Task of this Lecture:

• Before we get to the nitty-gritty of information and media firms and how to manage them

• We will look at the big picture—the information environment and its economic characteristics.
Q: What was the world’s largest private company in the 18th Century?
Thurn und Taxis Postal Firm

• Postal Monopoly in Hapsburg territories
• Today, forgotten
Q: What was the world’s largest private company in the 19th Century?

Hint: Samuel Morse

Source: http://lcweb2.loc.gov/americainvent/morseinfo.html
World’s Largest Company in 19th Century

Western Union: Telegraph

- Western Union: Telegraph
- Monopoly in US
- started 1851
- By 2006: insignificant in communications; telegraph service ended.
  - owned by First Data Corp. as a fund-transfer operation
What was the world’s largest private company through most of the 20th Century?
• AT&T

– Built and owned 80% of all telephones and access lines in U.S.
– 2005: On the ropes, bought out for a mere $16 billion by SBC, which renamed itself AT&T Inc.

And finally, what was the World’s largest Mass Media Company, in 1967?
• These giant firms have all disappeared.
• Does this tell us something about media companies, and media markets?
• Large
• Platforms are largest
• Volatile
• Leads to strong governmental role
• New technologies upend markets
  – Today:
    – First IBM
    – Then Microsoft, then Google
    – Who next?
• The issue we will address today is how to operate in the media environment

What is the Media Sector?
Media Sector

- Within “media” one can distinguish 3 basic types of functions, with associated industries.

Content Production

- Distribution
  - Platforms
- Devices
## US Information Industry Sector 2011

- Content Industries $380 bil
- Distribution Industries $500 bil
- Device industries $130 bil

- Total ~ $1 Trillion

(includes double counting)

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- And the first question we will address is:
- Is Media (and Information) Management Different?
  - Different from management generally
Is Media Management Different?

Is Managing Media Different from Managing a Beer Brewery? A Shipyard? A Bank?
Two Views on Media Management in comparison to Management in General:

- “Different”
- “Just The Same”

The First View: Media Management is “The Same” as Management for Other Industries

Q: True?
• All businesses have major commonalities
  – Raise funds, select projects, hire employees, arrange for inputs, control costs, create outputs, price them, market them, account for the results, etc

The details may be different, but the basic principles are similar
• One could therefore conclude that there is no difference at all.
• But this would be simplistic.

Yes, basic management principles apply to all industries
• But media industries have several special characteristics that make media management different
• We must understand what they are
Q: Why Different?
How Different?

“Media are Different”
• Media is supposed to be a very distinct type of industry
  – Based on creativity, “feel”, intuition,
  – Plus, it is driven by spirit of public service, and not only profit-based
  – Therefore, it is not being mostly driven by numbers and analytical models
• In actual practice, Media management traditionally been one of experience and ‘gut’ feeling
  – For example, book publishers make only educated guesses: the number of copies they print; the price they set for consumers; the advance they pay to authors.

• Film distributors make educated guesses: guesses marketing budget of films, or about the number of DVDs they produce.

• Other industries, like banks, automobile makers, or airlines, use a much more scientific approach to management.
• In fact, management is often unpopular within media companies themselves

• Managers are derided by the “creatives,” who have the prestige and public visibility, as the “bean-counters,” as the “suits” as narrow-minded accounting clerks, as philistines who are only concerned with the bottom-line.
• In no other industry does management have to apologize continuously for being managers, for doing what managers do: raise funds, select projects, set budgets, control costs, market products.

• The media themselves generally show negative stereotypes of media managers.
  – When was the last time you saw in a film or TV show a media manager shown as a creative, interesting, educated person?
  – As a pioneer, or as a contributor to new ways to delight and inform? Usually it is the opposite.
• But is it true that media management is so different that one cannot apply much from the rest of management science?

• Economists and business researchers are used to almost every industry considering itself to be “different.”
  -- Agriculture, energy, health care, law firms, biotech, aviation, banking, lumber, steel, mining, construction, etc, etc, etc.
  -- All consider themselves to be “different.”
• It’s easy to talk about scientific media management
• And much harder to provide the elements of such an approach.

Start Out by Looking at the Classic Factors of Production
• Capital
• Labor
• Land
And now in the information economy, also:
• Information
• The first three are associated with 3 classes—capitalist workers, land owners. The fourth is associated with what has been called the “new class”, the “creative class.”

• At universities, the typical “media business” course, if it exists, is simply a survey of the various media—the film industry, the print industry, music, radio, TV, and now, the Internet.

• A second dimension that sometimes exists at universities is the economics of media policy: originating in the policy debates and reforms of the 80s and 90s.

• A third dimension is to use existing basic courses—marketing, strategy—and apply them to the media sector.
The first three factors, being around for long, have underlying theories. But the information sector has no economic or social theory that is equivalent to the ones for finance, labor economics, real estate, and spatial studies. Information—as an input and output—has no real body of theory that could be used for management analysis and decision making.

What calls itself “information theory” is not really about media:

– One type of “information theory” is that of technologists: how to squeeze more bits into a pipe
– The other kind of “information theory” is that of economists about risk and uncertainty.
• So what is required is a new sub-discipline of media economics and management.

• Macro Differences
• Micro Differences
The Differences are on 2 Levels

• 1. The Environment.
• The “macro economy” of the information society

• 2. The fundamental business characteristics of the media and information industries—the “micro economy” of the information sector.
• These will be the 2 themes of this section.
II. The Macro-Environment of the Information Economy

The present upheaval in the nature of the economic system reminds us of an earlier technological and economical upheaval. Which?
The Industrial Revolution

What was the primary Technology Driver of the Industrial Revolution?
• Steam engine, invented in 1712

• Industrial Revolution
  – starting 1770s in England
• Extension of human physical strength
  – steam engine ---- muscles
  – production machinery ---- arms
  – railroads, cars, airplanes ---- legs, wings.
From Muscle Power

http://www.hendersonsredware.com/Scrapbook/carrying%20pottery.jpg

To Machine Power


http://www.tpwd.state.tx.us/spdest/findadest/parks/texas_state_railroad/
Q: What were characteristics of the Industrial Revolution?

Characteristic: Mass Production

Characteristic: Rising Living Standards

http://www.dover.gov.uk/museum/history/19thcent.asp

Characteristic: Urbanization

http://www.phase.com/image/814510
Characteristic: Social Strife

Now, another Economic Revolution

• The Information Revolution
The Information Revolution

• Q: If the Industrial Revolution extended muscle power, what does the information revolution extend?
Extension of human mental strength

- logical processing
- memory
- Communication: Story telling, talking
- senses

Because brain power is a more fundamental characteristic of humans than muscle power, this 2nd Revolution will be even more fundamental than the 1st.
Q: are the technology drivers of the Information Revolution?

The ability to manipulate sub-atomic particles (electrons & photons)
• The creation of devices that harness these particles for useful functions

Followed by stringing together of the devices into products and systems
Enormous rate of change

• Processor power and memory power costs in 2010 less than 1/100,000,000th than it did in 1971.

Source: Penn State University for Global Telecommunications & Consumers

Change follows Moore’s Law

Gordon Moore
• We are just at the **beginning** of this technological change
Example: Intelligence, Communications, and Wallets in Every Device, communicating with each other

• Suitcases will complain to airlines
• Front doors will check in with police departments
• Pacemakers will talk to hospitals
• Light bulbs will haggle with utilities\textsuperscript{81}

• And now, we are in the midst of a historical move
  --From the kilobit stage of individualized communications to
  --the megabit stage
  --within the reasonable future to the gigabit stage—Google in Kansas City
  --To the Terabit stage--(experimental)
2. People

• But actually, the *major driver* is not just *technology*, but just as much *people*.
Societal Info Production Trends

- 90% of all scientists who ever lived are alive today.
- Also true for architects, lawyers, electrical engineers, etc.
- Songwriters, screenwriters, composers, filmmakers
- MBAs

- In almost any scientific field, more research articles written this year alone than in entire human history before 1900.
Information Output

- "Chemical Abstracts":
  - 32 years (1907 to 1937) for 1st million abstracts of scientific articles in chemistry.
  - 1.9 years (1999-2001) for 10th million
  - 8 months in 2011 for the 24th million

History of Information Production (Western Cultures)
• Every 30 seconds a new book
• Every day 10 new feature films
• Every day, 1500 TV shows

US Department of Commerce:
• Information sector accounted for more than one-quarter of real economic growth in US in 1990s.
• Declining prices in information sector lowered overall US inflation by 1%/ yr.
• So this is the macro environment in which media companies
— Exponential technological change
— Exponential human skill change
— Exponential knowledge base
— and perhaps an exponential transformation of economy
III. The *Microeconomics of the New Media Economy*
• The question arises, what are the implications for the management of companies that are part of this sector?
• How does one manage in this sector effectively?
• One needs to understand the basic properties of media and information

The 10 Economic Properties of Media
Fundamental Economic Characteristics of Media

1. High fixed costs, low marginal costs
2. Network effects
3. Accelerating returns
4. Non-maximizers of profit
5. Excess supply
6. Convergence of production
7. Price deflation
8. Non-normal distribution of demand
9. Intangibles
10. Public goods and Government Role

Characteristic #1 of Media Information:

- Usually very high fixed costs and very low marginal cost.
  - Expensive to produce, cheap to reproduce
Expensive to produce, cheap to reproduce

- Films, TV programs
- Computer software
- Electronic networks
- Newspapers
- Semiconductors

High fixed costs, low marginal costs

High fixed cost, and low (and often declining) marginal cost
Q: What are the Business implications of this economic property of “high fixed cost and low marginal cost?”

Business Implications

- Large size of many firms
- Incentives to acquire large size by M&A, and to be first-mover
- Incentives to piracy
- Large “consumer surplus” in competition
- Incentive to price discriminate among customers
- Competitive prices often unprofitable
Characteristic #2 of Media and Information: Network Effects
• Individual benefits from media is often interdependent with that of others:
  – For Internet: Telecom, the benefits to users rise with the numbers of others on the network
    • Fax, email, websites
  – For Film, TV, Music, popular Magazines and Books: a major benefit of media consumption is to share experiences with one’s peers

• This changes the economics of demand
• The demand increases with size of networks. The more people are on the network, or share the experience, the more people are willing to pay.
  – i.e. the larger the quantity demanded, the higher the willingness to pay.
  – reverse from normal
• Network effects turn into high barriers to entry


Q: What are the business implications of network effects
• Market share is important (first-mover advantage)
• Interconnectivity is important
Characteristic #3 of Media Information: Information grows Exponential and Cumulative.

• “you can wise up, but you can’t wise down.”
• A media product, once created, becomes part of the human stock of information, knowledge, culture
- Evolutionary progress accelerates because methods from previous evolution is used in the next stage

• The rate of technological change is exponential and *accelerating*
• And that even this acceleration is itself accelerating


• A community or organization is getting smarter, even if individuals are not getting smarter.

Source: www.3dplanet.co...cts/iq/email/email.htm
Q: Implications for business functions?

- Firms must adapt faster
- Knowledge assets last shorter
- Adaptation to new knowledge becomes essential
- Experience becomes less important
Characteristic #4 of Media and Information: Presence of Non-Maximizers of Profit
• Producers get utility from the creation of the product
• Production is often not a chore (cost) but a positive benefit (consumption)
• Often hard to distinguish production from consumption.

• Economic theory is based on profit maximizers on the production side
• And on “Utility maximization” on the consumption side
• In media production, a key incentive for peer creatives is to maximize instead recognition
  – close to utility maximization than to profit maximization
• Q: What are the business implications of the strong presence of non-maximizes of profits?

Eli M. Noam, Mobility, 2006

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• Implication: managers need to reconcile these two conflicting goals of their employees and customers.
• Managers volunteer to compete against participants
  – Microsoft against Mozilla and Linux
  – Hulu against YouTube content
  – Washington Post lost against Huffington Post
• Artists need to compete against “volunteer” artists
• Warner Music against [free volunteer music content].
Characteristic #5 of Media and Information: Excess Supply

• Production increases exponentially, while consumption increases linearly and slowly.
Constraint: time budget

- CAGR of media production: 12%
- CAGR of media time consumption: 1.2% (slow)
- 2,100 hours of media consumption/cap/yr
- New media consumption must be mostly supported by substitution from existing media in terms of time or full attention

• Leads to competition for
  – “mindshare”
  – “attention”

• Has consequences on content style and on marketing
• Economics of Attention – “A wealth of Information creates a poverty of attention” (Herbert Simon)
• Q: What are the implications of excess supply for Media Companies?

Eli M. Noam, Mobility, 2006

• Compared to 1998, fewer than half as many of the new products make it to the bestsellers lists, reach the top of audience rankings, or win a platinum disc.

• Leads to increase in specialization & customization of media content
• Requires increase in production & Marketing effort
• Put together: costs rise per use.

Characteristic #6 of Media and Information: Convergence of Technology and Industries
Q: What are the business implications of convergence

- Competitive pressures, from firms now in same market
- Incentives to conglomerate firm across several media
Market Characteristic #7 of Media and Information: Price Deflation

“Information Wants to be Free”

- Information has become cheaper for many a decade
- It is becoming difficult to charge *anything* for it.
  - Music
  - Online publishers
  - Newspaper prices barely cover the cost of paper and delivery; the content is thrown in for free.
Dropping Prices

- Phone calls
- bandwidth
- Software
- Semiconductors
- IT devices
- Advertising
- Music

It is one of the fundamental economic trends of our time
• The entire competitive part of the information sector – from music to telecoms to consumer electronics and anything in-between – has become subject to a gigantic price deflation in slow motion.

This price deflation leads to:

1. Volatility of prices
2. Instability in the entire information sector
Q: What are the management implications of price deflations?

• One main strategy for media managers is to avoid such price competition.
  – through product differentiation
  – price discrimination
  – consumer lock-in strategies
  – industry consolidation
Characteristic #8 of Media and Information: Non-Normal Distribution of Success
Riskiness in many media projects

• “80-20” rule
  – 80% of all films do not generate enough audience to become profitable.
  – 80% of books
  – 80% of music

Profits

• 90-10 rule

• 90% of all profits by 10% of the products

• 50% of profits by 1-2% of products

Eli M. Noam, Mobilized, 2006
• But it’s not simply the small odds that are the problem
• But it’s that the distribution of success is weird
• The statistical distribution of media performance is not normally (“Gauss Distribution”)
• Distribution for many media products is instead a ‘Pareto Distribution’ (exponential distribution)
• An example for a ‘Pareto Distribution’ is a “Zipf Distribution” – payoff is extremely high for a few products, low for most others
For many media products, the average (of revenues, or of profits) or mean is not the most probable outcome. The average is dominated by rare, extreme outcomes and is very far higher than the most probable outcome. (The mean scenario)


Q: What are the business implications of such a skewed exponential distribution of success?
• Most projects a failure
• Attractive to risk takers for big payoff
• Risk containment and reduction become a key management task

Characteristics #9 of Media and Information: Significance of Intellectual Assets
• Many activities based not on physical products, but on ‘intangibles’
• Cumulatively known as ‘intellectual capital’ or “Intellectual Assets”

Characteristics of Intellectual Capital
• Not inherently a scarce resource
• Does not deplete, with use (non-rival consumption)
• Can be shared
• Hard to prevent others from use
Q: What are the management implications of a strong presence of Intellectual Capital?

Central element for media firms:
• How to create?
• How to price?
• How to protect?
Characteristic #10 of Media and Information: Often a “Public Good” with a strong role for government
• “Public good” means a freely available good, like national defense or environmental quality.

Hard to exclude, Hard to control access and sharing
• It is difficult to control the access to information because it is non-physical (non-excludability).

• It is easy to share the product (joint consumption).

• Together, there are the classic economic characteristics of “Public Goods”.

Q: What are Management Implications of Information having Public Good characteristics?
Management Implications:

• Difficult to charge for information
• Difficult to protect property rights
• Implications: under-investment

* 

• This under-investment leads to government taking a role in assuring creation (intellectual property rights) and supporting non-profit creation (e.g. basic research; funding of the arts, etc.)
• Also, high impact of media companies on politics and culture is such that they are always controversial, highly visible, regulated, or fought over.

• Strong participation and regulation of government in broadcasting, cable, satellite, telecom, mobile, film (subsidies), and IT development, and many more.

Q: What are the management implications of the strong role of government in the media sector?
• Strong need to manage government relations

Summary:

• We have identified 10 factors of the media industry which, in combination, make its management different, in some ways, from management more generally
**Fundamental Economic Characteristics of Media**

1. High fixed costs, low marginal costs
2. Network effects
3. Accelerating returns
4. Non-maximizers of profit
5. Excess supply
6. Convergence of production
7. Price deflation
8. Non-normal distribution of demand
9. Intangibles
10. Public goods and Government Role

To reduce the numbers we can merge several of these 10 factors, and are left with:

- **Strong economies of scale**
- **Price deflation**
- **High uncertainty and instability**
- **High governmental role**
• These characteristics impact every media industry, every media company, every media activity and every media manager
• We will encounter them throughout this course.
V. Conclusion

• The question was: Is media management different?
• Managers of media and information face several and substantial characteristics that create different incentives, demands, and constraints from those of industrial productions or of other services.
• This creates often a need for a somewhat different management approach
* 

- Right-brain, left-brain
- Culture, numbers
- Intricate technology
- Art, science

And the big picture is: information
Where Information was once a scarce resource. It is now becoming an abundant resource
Information has moved
- From a supplementary factor
- To being the central business input
- and major output of an advanced economy: media products.
• We are going through arguably the most creative period in business history, ever.

• And of the most creative period in technology history, since the industrial revolution.

• For those interested in this resource - how to produce it, how to distribute it, how to use it - this is the most exciting period ever. Good news.

• Bad news: it’s also the period with the greatest uncertainty.
• Remember those giants of the past, media and communications companies that have vanished

World’s Largest Company in 19th Century

• Western Union: Telegraph

(http://www.radiosites.com/)
Remember the old AT&T

http://www.eop.com/AT&T_logo.gif
Eli M. Noam, Media Environment

Remember RCA
End of Lecture