Financial Analysis in Telecom, Media & Technology
FINC-GB.3126.10

Schedule: Mondays 6:00 PM ~ 9:00 PM (6 sessions)
Location: TBD
Instructor: Tom Cha, CFA, Adjunct Assistant Professor
Office Hours: Before class and/or by appointment
E-mail: tcha@stern.nyu.edu

Course Description:

This course is designed for students who intend to pursue careers across the investment banking industry as well as those exploring careers in corporate strategy and management. Students will analyze recent and ongoing transactions in telecom, media and technology industries to make the material topical and relevant. Areas covered include equity and debt analysis, mergers and acquisitions, and corporate strategy. While the core of the course is corporate finance, the issues encompass strategy, marketing, and aspects of economics.

Students will learn the unique characteristics of telecom, media and technology companies/industries while building on fundamental analytical skills. In addition, students will learn how telecom, media and technology company management teams, shareholders and debt holders analyze the merits and risks of investments, mergers & acquisitions, valuation and capital structure to create value across different industry dynamics.

This course examines a series of completed and potential corporate transactions in telecom, media & technology industries to understand how TMT companies respond to secular changes and transform their business models in the midst of evolving ecosystems. Students will examine these cases from the vantage point of company management, shareholders and debt holders. Discussions will include:

- Overview: Media & Telecom Ecosystems and Technology Evolution
- CBS vs. Viacom: *Separated at Birth* - Equity Valuation Analysis in Media Entertainment
- NFL: New Digital Media Initiatives and Economics
- AT&T, DirecTV and Time Warner: *"Game of Thrones"* - M&A and Debt Analysis in Telecom & Media
- Tesla: *A Bumpy Road Ahead* - Business and Financial Analysis in Technology
- Alphabet vs. Apple: *iPhone or Android?* - Equity Valuation & Investment Framework in Technology
- Amazon Web Services, Twitch, YouTube and Instagram: *Hidden Gems* - Valuation of Hidden Gems

Guest lecturers are integral part of the course. Executive level guest lecturers will share their insights and behind-the-scene stories to bring the cases studies to life. Guest Lecturers will likely include:

- **Blake Stuchin, Vice President, NFL:** Discuss digital media and sports rights
- **Sandeep Gupta, Executive Director, Barclays:** M&A Rationale at AT&T

Prerequisites:
Foundation of Finance

Course Material:
Lecture notes (will be handed out in class in advance)
SEC filings and company reports (links provided)
Related news articles (links provided)

Grading

Category	Weight (%)
Class Attendance/Participation	35%
Final Project	65%

Final Project

Students will be asked to apply their understanding of the TMT ecosystem and integrate various topics discussed during the course, including M&A valuation, financial modeling and capital deployment to the final project, which can be completed as an individual project or as a group project (maximum 4 members per group).

Students can choose one of two tracks - Investment Track or M&A Track:

Analyst/Investment/Private Equity/VC Track	CEO/CFO/M&A Banker Track
• Identify an investment opportunity in the TMT universe for equities, debt, LBO or VC • Address investment rationale, including expected returns and potential risks • Recommend a course of action (buy or sell)	• Identify a strategic alternative, including M&A or divestiture for a TMT company of your choosing, which addresses changes taking place in the TMT ecosystem • Address the rationale of the proposed transaction, including strategic and financial implications

More details and guidelines are posted on NYU Classes.

Module 1: Media & Telecom Overview: Understanding the Ecosystems and Technology Evolution

Entertainment, media and telecom industries have evolved rapidly in the last decade with the proliferation of digital and mobile technologies. In the midst of significant uncertainties, students will:

• Explore the business and financial models across the value chain/ecosystems in media and telecom industries (content producers to content aggregators to content distributors in media industry and equipment vendors to infrastructure providers to service providers in telecom industry)
• Learn critical components of analysis (industry, company, financial, regulation and egos)
• Illustration of multiple revenue flows in the ecosystem, including multiple revenue streams and ARPU
• Learn financial and operating metrics used to analyze media and entertainment companies (content obligations and accounting implications)
• Understand the regulatory climate and the key players that shape the agenda
• Understand the changing competitive dynamics in media & telecom industries
• Learn technology evolutions in mobile, video and broadband services and identify future opportunities
• Explore business use cases in 5G and build financial models to analyze financial implications across media and telecom industries
• Understand the evolution of disruptive innovations and examine challenges of allocating financial resources to emerging platforms in a rapid paradigm shift
• Revolution in entertainment industry and disruptive technologies impacting the incumbent's business

Special Guest Lecture: NFL: New Digital Media Initiatives and Economics

This module is designed to study the economics of the National Football League to understand financial dynamics involving sports media rights in the context of the evolving digital media landscape.

Discussion Points:
- History and overview of NFL
- League economics/ecosystem and franchise value
- Media rights across multi-platforms
- NFL on digital
- Future of NFL

Module 2A : Equity Valuation Analysis in Media & Entertainment

Media & Entertainment business models have changed due to proliferation of digital technologies and changing media consumption behaviors. During this module, students will:
- Examine revenue profile and assess revenue and earnings growth forecast
- Understand the factors that drive equity valuations and movements in earnings pertaining to media & entertainment industries
- Examine revenue mix to assess revenue and earnings volatility
- Understand key valuation metrics such as cash flow multiples and sum-of-the-parts
- Explore the relationship between public and private market valuations
- Examine recent media horizontal M&As in the context of evolving media ecosystems and understand the underlying industry themes and rationale as well as financial/valuation implications of strategic directions taken those companies (Merger of Discovery and Scripps, Merger of Disney and FOX vs. NBCUniversal's takeover attempt)

Module 2B : CBS & Viacom: Separated at Birth

In 2004, Sumner Redstone decided to split Viacom into Viacom ("GrowthCo") and CBS ("DividendCo") to provide alternative investments that would be more appealing to investors: CBS was a high cash flow, mature, low growth company that would pay a significant dividend while Viacom would have greater investment opportunities and grow shareholder value. After more than 10 years since the split, the fortunes of the two companies have reversed. Viacom is struggling to grow and CBS is steadily growing while paying a significant dividend. Looking forward to the next 10 years, both Viacom and CBS face strategic and financial challenges as the media ecosystems continue to evolve. During this module, students will explore strategic and financial rationale for recombination of CBS and Viacom and financial implications of pro forma financial structure.

Module 3A: M&A and Debt Analysis in Media & Telecom

Telecommunication business models have evolved as the underlying mobile technologies continue to evolve and new applications are developed, creating new business opportunities for the telecommunications ecosystems. During this module, students will:
- Understand the mobile telecom business model and the ecosystems to examine telecom revenue profile and assess telecom earnings growth forecast

- Examine recent vertical M&As in the context of evolving telecom ecosystems and understand the underlying industry themes and rationale as well as financial/valuation implications of strategic directions taken those companies (Merger of Comcast and NBCUniversal vs. Split of Time Warner and Time Warner Cable)
- Understand the trends in the debt capital markets such as syndication and execution
- Learn the methods used by credit rating agencies to assess financial risk
- Understand the factors that drive telecom equity valuation and examine business models to assess revenue and earnings growth prospect
- Understand key telecom equity valuation metrics such as cash flow multiples and dividends

Module 3B: AT&T, DirecTV and Time Warner: Game of Thrones

Faced with a changing industry dynamics and growing dividend burden, AT&T agreed to acquire DirecTV for $67 billion. The acquisition increased AT&T's scale and scope in the video distribution market. Two years later, AT&T agreed to acquire Time Warner for $109 billion. The acquisition not only expanded AT&T's scope in content, but also allowed AT&T to explore new monetization models leveraging new technologies, such as digital streaming and data analytics. However, the acquisition also increased AT&T's debt leverage significantly. During this module, students will examine AT&T's acquisitions of DirecTV and Time Warner in terms of transaction structures, strategic and financial merits in the midst of evolving industry and capital market dynamics.

Module 4A: Business and Financial Analysis in Technology

Electric vehicles are transforming the auto industry and digital technologies are reinventing the hardware and software design in vehicles. In the future, cars will be fully autonomous and human drivers will be replaced with cameras, sensors and lasers for autonomous navigation. This revolution will lead to a paradigm shift in in terms of manufacturing and consumption of cars in the future. During this module, students will:
- Explore key technology trends including mobile devices, cloud computing, hybrid cloud, edge compute, converged infrastructure and 5G as well as Internet of Things and Artificial Intelligence
- Discuss innovations, disruptions and obsolesces in technology
- Learn to analyze critical fundamental factors including industry, company, competitive, financial, and regulation

Module 4B: Tesla: A Bumpy Road Ahead

Tesla is an innovative technology company that makes and sells electric vehicles. Investors and analysts describe Tesla's future business and financial outlook as "turning the corner," "a bumpy road ahead," and a "race against the time." During this module, students will examine Tesla's production/manufacturing problems and its impact on profitability by conducting revenue and earnings sensitivity analysis as well as cash flow analysis. In addition, students will evaluate Musk's buyout offer in terms of $420/share price, possible financing structure and feasibility.

Module 5A: Equity Valuation Analysis and Investing in Technology

Technology is one of the largest sectors in terms of market capitalization and offers significant opportunities for investors. While the technology sector offers significant returns, investors need to understand the inherent investment risks as technology changes rapidly and leaders and laggards can change instantly with innovators and disruptors emerge. During this module, students will:
- Understand framework in fundamental analysis of technology companies

- Understand the factors that drive equity valuations in technology and framework in technology investing
- Distinguish pipeline businesses vs. platform businesses and understand the valuation implications
- Discuss innovators and disruptors as well as technology obsolesce risk
- Understand key valuation metrics such as earnings multiples that are different within the sub-segment of the technology sector and from other industries

Module 5B: Apple vs. Alphabet: Are You An iPhone Person or An Android Person?

In terms of total market value, Alphabet and Apple are two of the most valuable companies in the U.S. However, in relative value terms, Apple is half as cheap as Alphabet. During this module, students will compare and contrast the valuations of Alphabet and Apple in the context of respective business strategies and technology obsolescence risk.

Module 6A: Analysis & Valuation of Subsidiaries with Limited Financial Disclosures

FAANG companies led by visionary technologist CEOs have the free pass from the public shareholders to invest in "Moonshot" projects that may or may not be successful. However, these Moonshot projects typically lack financial disclosures and transparency. During this module, students will:
- Understand the underlying industry dynamics and trends in cloud computing, video games/eSports, self-driving car and social media based on information available from their respective industry peers
- Learn to gather and synthesize information from the respective pure-play peers to make informed assumptions for financial projection analysis
- Understand different forms of separation, including spin-off and divestiture as well as Reverse Morris Trust

Module 6B: Amazon Web Services, Twitch, YouTube and Instagram: Hidden Gems

Calls to break up Amazon, Facebook and Google have been rising given their market dominance in the "winner-takes-all" world of platform economy. In this module, students will conduct business and financial analysis of Amazon Web Services, Amazon's Twitch, Google's YouTube and Facebook's Instagram based on publicly available information and estimate enterprise value.