

# Laura Martin: Real Options

## Cox Communication



## Background

ROIC History	Key Facts for Underestimation
<ul style="list-style-type: none"> <li>1998-2000: 15%</li> <li>2001-2003: 12%</li> <li>2004-2006: 10%</li> <li>2007-2009: 8%</li> <li>2010-2012: 6%</li> <li>2013-2015: 5%</li> </ul>	<ul style="list-style-type: none"> <li>Capital spending to EBITDA ratio increased from 1.5x to 2.5x</li> <li>Operating leverage increased from 1.2x to 1.8x</li> <li>Debt to capitalization ratio increased from 15% to 25%</li> <li>Operating margin decreased from 15% to 10%</li> <li>Operating assets to EBITDA ratio increased from 1.5x to 2.5x</li> </ul>

## Multiple Analysis

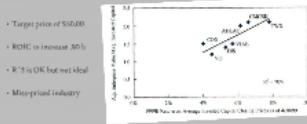
Strengths	Weaknesses	Valuation Pitfalls
<ul style="list-style-type: none"> <li>Simple</li> <li>Transparent</li> <li>Easy to use</li> </ul>	<ul style="list-style-type: none"> <li>Overly simplistic</li> <li>Not always relevant</li> <li>Subjective</li> </ul>	<ul style="list-style-type: none"> <li>Overstating the value of intangible assets</li> <li>Overstating the value of R&amp;D</li> <li>Overstating the value of goodwill</li> </ul>

Martin believes multiples are Primitive, incomplete and static  
Assumed that valuation is constructed using the same views, assumptions and accounting policies

## Inputs into Multiples

- Complete
  - Utilize relevant market values
  - Correct for seasonality
  - Include all core and non-core assets with value
- It is assumed that accounting policies are generic across an industry.

## Exhibit 5. ROIC Target Price Analysis for Cox Communication



## Martin's EBITDA Growth Assumptions

- Revenue growth to increase and diversify
  - Capital spending to decrease, decreased risk levels
  - Increased ROIC from new digital revenue streams
- Assumes that all companies considered define EBITDA the same way and calculate it accordingly.

## Unaccounted For Changes

- Regulatory changes within the industry
  - Dilution in developing ecosystem of scale
  - Disrupting boundaries within the industry
  - Potential acquisitions
  - Cox super-voting shares
- Martin assumes that if you can't quantify it, you can't include it

## Cox Communication

- Martin's multiple analysis over values Cox Communication
- 33% appreciation of share price is unrealistic
- Qualitative information impacts value
- Biases and assumptions incorrect

## Issues with Multiple Analysis

- Only reflects the past figures
- Doesn't account for different accounting practices
- Changing industry structure makes finding comparable firms difficult

## Discounted Cash Flow Analysis

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>Provides a clear picture of the value of an investment</li> <li>Can be used to compare different investments</li> </ul>	<ul style="list-style-type: none"> <li>Requires a high degree of accuracy in the inputs</li> <li>Can be sensitive to changes in the inputs</li> </ul>

## Martin's Assumptions

- Revenue growth would accelerate and diversify: From 1998 to 2003 at a CAGR of 14.2%
- Capital spending would slow and nature of investments change: From 2000 it would decrease at average CAGR of -6.3%
- Falling risk for investors as change from non-revenue upgrades and investments to revenue based CAPEX
- Digital revenue streams earn higher returns on capital: Higher marginal ROIC (including cost of upgrade of cable plant) 43% - 65% compared to 1998 ROIC of 36.6% COX.

## Martin's DCF

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Revenue	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600
EBITDA	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150
Capital Expenditure	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
Free Cash Flow	250	310	370	430	500	550	600	650	700	750	800	850	900	950	1,000	1,050
WACC	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Value	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600

## How realistic are Martin's DCF assumptions?

- Vary high stock valuation of \$54.29
- EBITDA growth rate of 10% over the next 15 years. We have evaluated this as more conservative 13.75%
- Physical growth rate of 4.4% is realistic assumption by Martin
- Conservative CAPEX decreasing as capital will depreciate on existing over time.

## Revised Inputs

- Capital structure remains unchanged, debt to capital ratio of 18%
- Risk free rate has increased, cost of equity increases to 10.67%
- Increases the WACC to 9.42%

## Our DCF Analysis

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Revenue	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600
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## Our Valuation Results

- Cox Communication is still undervalued
- New DCF valuation stock value of \$41.33, 34% premium over market price
- Martin was too optimistic in her assumptions
- With only DCF, conventional we recommend Cox as a buy

## Cable Company Infrastructure

Category	Value
Fixed Assets	1,100
Intangible Assets	1,200
Goodwill	1,300
Other Assets	1,400
Liabilities	1,500
Equity	1,600

## "Stealth Tier"

- 100Mths of unused capacity
- Intangible revenue streams
- Net Valueless
- could include services such as:
  - Video on-demand
  - Interactive e-commerce
  - Interactive games
  - Excess bandwidth

## How is the "stealth tier" incorporated into the DCF and multiples analysis?

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## "Stealth Tier" as a call option

- Firm has a choice, but not the obligation to exercise the use of the additional bandwidth
- Most closely equates to American style option, where options can be exercised at any time.

## The Underlying Asset

- The value of Cox asset is based upon two variables:
  - Quantity Available
  - Price of Insurance
- Underlying Asset - Each individual cable

## Strike Price

This strike price is the calculated cost to light up 1 new cable 17 channels available in the "stealth tier".

Martin makes the assumption that technological cost will be zero. We do not see sufficient security of a zero channel would cable channel services be lost.

This leads to us believing the strike price being represented in the upper equity cost of our "stealth tier" option value.

## Our Recommendation

- We find Martin's valuations too optimistic
  - Cox communication DCF valuation = \$41.33 per share
  - WACC above the current share price of Cox Communication
  - Expect positive changes to occur in cable industry
- Recommended to "BUY" Cox Communications.

Thank you for your time.

Any questions?



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# Laura Martin: Real Options

## Cox Communication



# Background

## Cable Industry

- Cable television early 1950s: Community Antenna Television systems
- Started in rural areas, expansion to suburban systems and urban areas.
- 1978: cables through 26.8 million households
- 1999: cables through 97 million households – 97% households in country
- Historically primary revenue through analogue video
- Today: digital video, cable technology and internet speed

## The Firm: Cox Communications

- Privately owned subsidiary of Cox Enterprise
- Digital cable, television, telecommunications, wireless services
- 3rd largest cable entertainment and broadband service provider in the USA

### Three main businesses:

- Cable programming services: 2.9 mill subscribers
- Internet: 3.5 subscribers
- Telephony: 3.2 million digital telephone subscribers: 7th largest telephone carrier in US

## Key Value Drivers

- Revenue growth would accelerate and diversify
- Capital spending would slow and the nature of investments would change
- The digital revenue streams would yield higher returns on invested capital.

## Equity Analysts

- Gather and evaluate information, generate forecasts,
- Make recommendations that lead to buying or selling of the
- Buy side and sell side analysts.

## Sell Side vs Buy Side

### Sell side:

- Work for brokerage firm
- Follow a list of companies, provide regular in depth reports
- Distribute/sell research to buy side clients

### Buy side:

- Employed by asset management companies
- Internal recommendations and forecasts to money managers
- Research distributed to firm that employed analyst

## What Constituencies do they serve?

### Sell side:

- Martin's three main constituencies central to her work
  - The companies she covered
  - The buy-side firms she advised
  - The internal CSFB constituencies.

### Buy side:

- Investment banks
- Money management firms

## Incentives:

### Sell side:

- Accumulate unique, in-depth, quality information
- Good relationship with businesses

- Laura martin's two primary drivers of compensation:
  - Her annual ranking in institutional investor magazine
  - Her revenues linked to corporate financial deals

### Buy side:

- Take correct position on stocks
- Value firms as accurately as possible
- Maximizing value of portfolio.

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