

# Business Scenarios in Ultrabroadband Deployment

Dr. Raul L. Katz  
Adjunct Professor, Finance and Economics  
Division

Director, Business Strategy Research  
Columbia Institute for Tele-information



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## **Our objective: integrate market, strategy and policy trends in a framework leading to outlining ultrabroadband deployment scenarios**

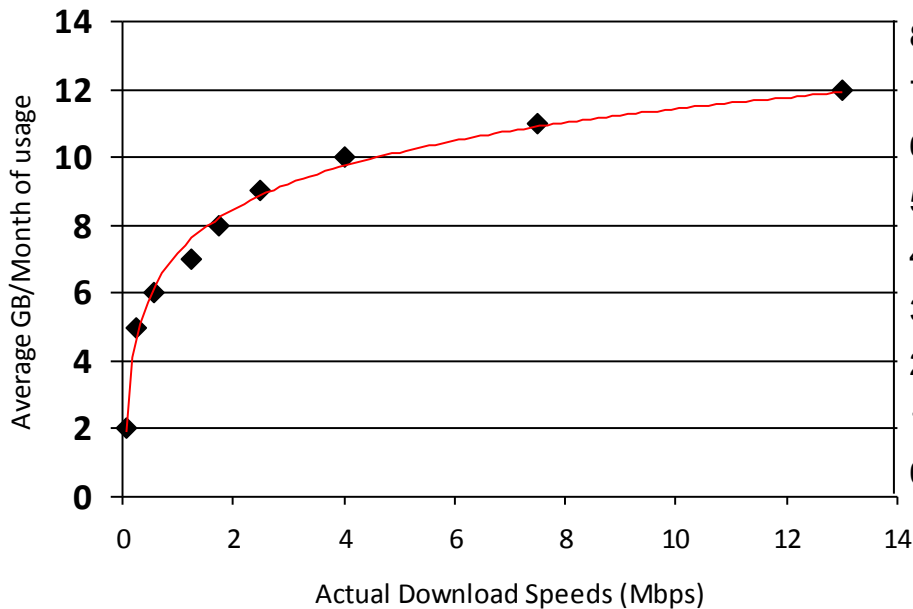
- **Starting premise: The appetite for speed and the emergence of bandwidth intensive applications are, like computer memory, mutually reinforcing phenomena**
- **First hypothesis: as in computer memory and functionality, ultrabroadband price realization (ability to charge more for speed) tends to erode, which affects the FTTx investment model**
- **Second hypothesis: the trend towards “Over the Top” content access (web—based) will tend to diminish the ability to increase revenues per user (ARPU), which will further erode FTTx ROI**
- **Potential scenario I: telco deployment of FTTx will be limited unless shareholders are willing to reward lower ROIC**
- **Potential scenario II: in countries with significant cable presence, cable will assume the lead in ultrabroadband deployment**
- **Potential scenario III: in countries with limited cable presence, governments could assume the leading role in deployment**

# Premise: Ultrabroadband demand is sustained by the rise in household digitization and an increasing “appetite” for download speeds

The appetite for speed and the emergence of bandwidth intensive applications are, like computer memory, mutually reinforcing phenomena

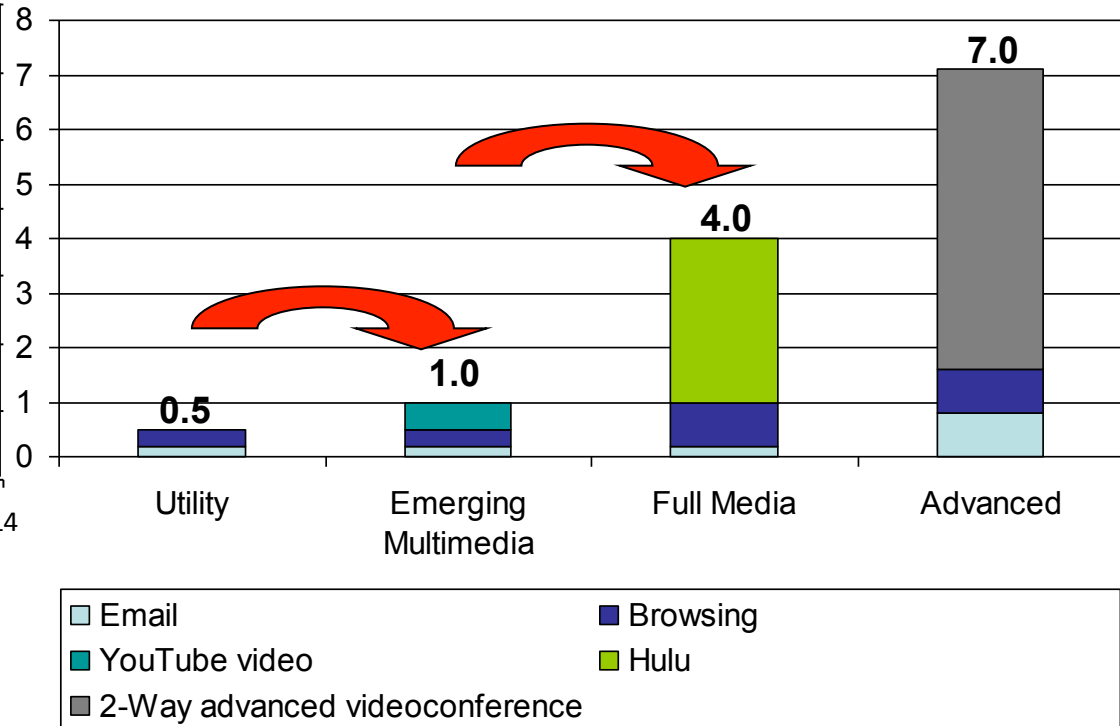
While demand for speeds is heterogeneous, a smartphone inference would allow us to visualize a convergence toward a uniform need for speed

UNITED STATES: DOWNLOAD SPEEDS VS. DATA USAGE

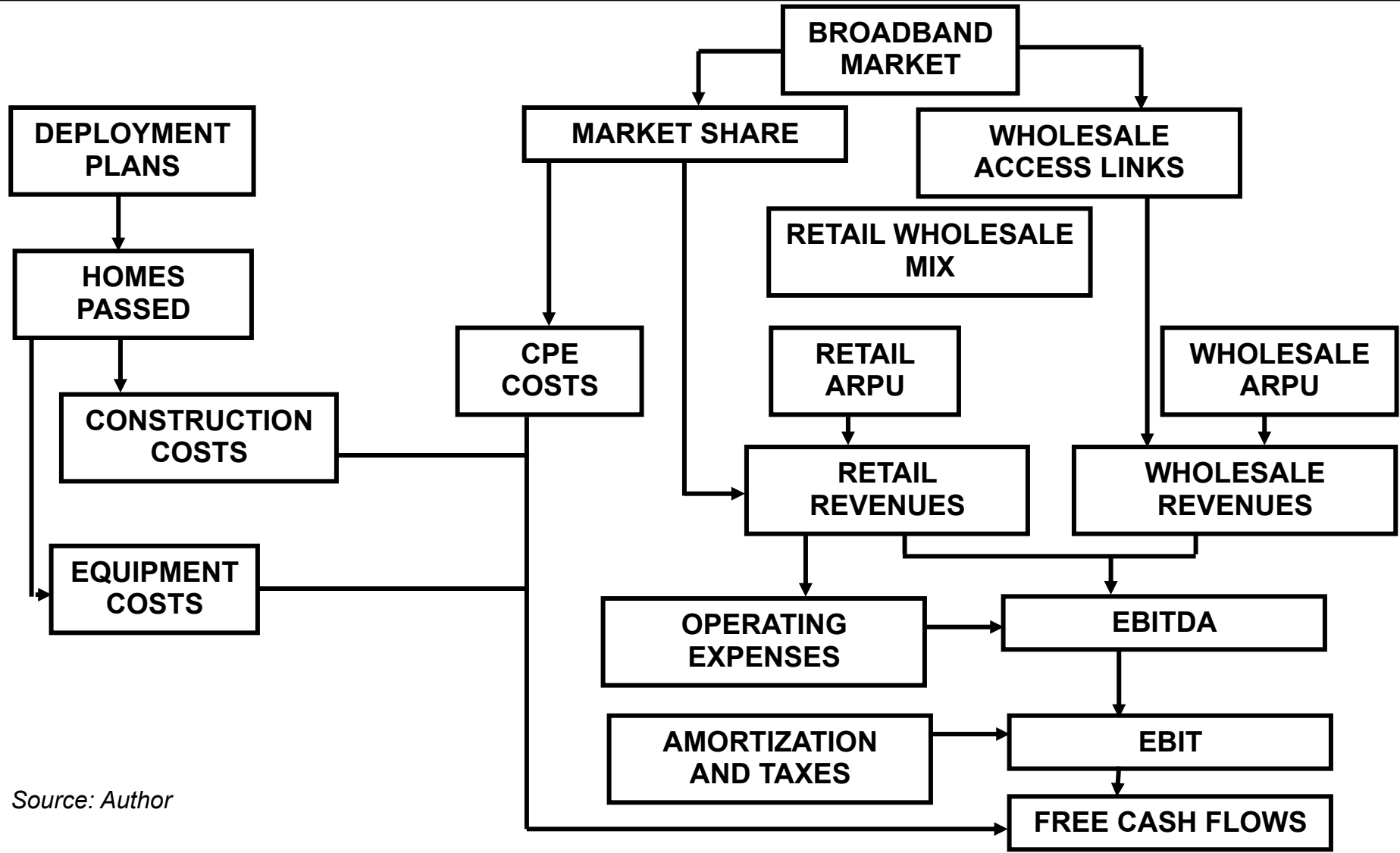


Source: Adapted from FCC. “Broadband Performance: OBI Technical paper No.4”

TYPE OF USERS (by download speed demand)



# H1: To meet growing demand for speed and respond to the cable threat, telcos deploy FTTx under a conventional business case



Source: Author

# H1: The business case, under very restrictive assumptions, yields a positive NPV

## BASELINE BUSINESS CASE

### ASSUMPTIONS

- Homes connected/homes passed: 25%
- Retail ARPU: 63 Euros
- Wholesale ARPU: 28 Euros
- Retail/Wholesale mix: 85/15

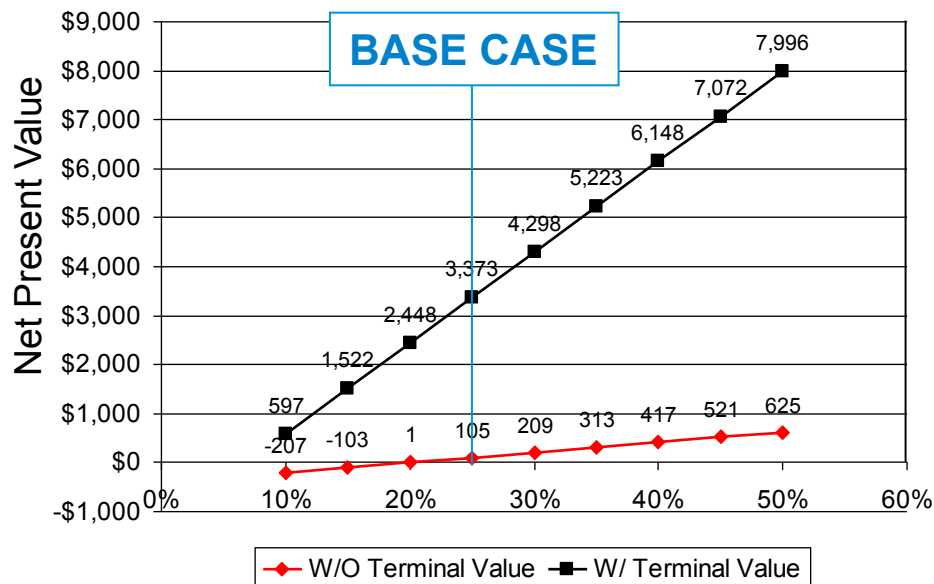
	Year 1	Year 2	Year 3	Year 4	Year 5
REVENUES	115	335	563	799	1,022
OPEX	31.4	56.9	84.4	113.6	131.4
EBITDA	83.7	277.9	478.4	685.8	879.4
EBIT	55.1	214.5	374.2	582.5	776.9
FCF	(170.6)	(83.3)	17.24	208.7	349.6

NET PRESENT VALUE (W/O terminal value)	€ 105 MM
NET PRESENT VALUE (W/ terminal value)	€ 3,373 MM

Source: Katz (2010); analysis by the author

# H1: The case is sensitive to penetration and ARPU – penetration under 20% of passed households or an ARPU under €60 yields a negative NPV

## SENSITIVITY TO HOMES CONNECTED TO HOMES PASSED

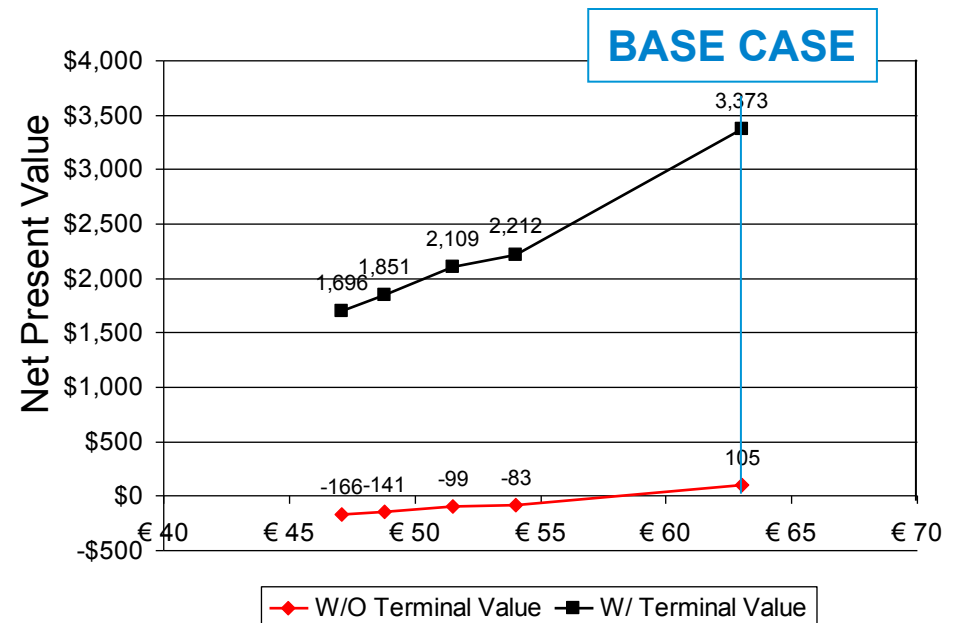


### HOMES CONNECTED TO PASSED (6/10)

- Japan: 39 %
- United States: 33 %
- Europe: 17.4 %

Source: IDATE (2011)

## SENSITIVITY TO ARPU



### SAMPLE FIBER ARPU

- Netherlands (KPN): USD 83.5

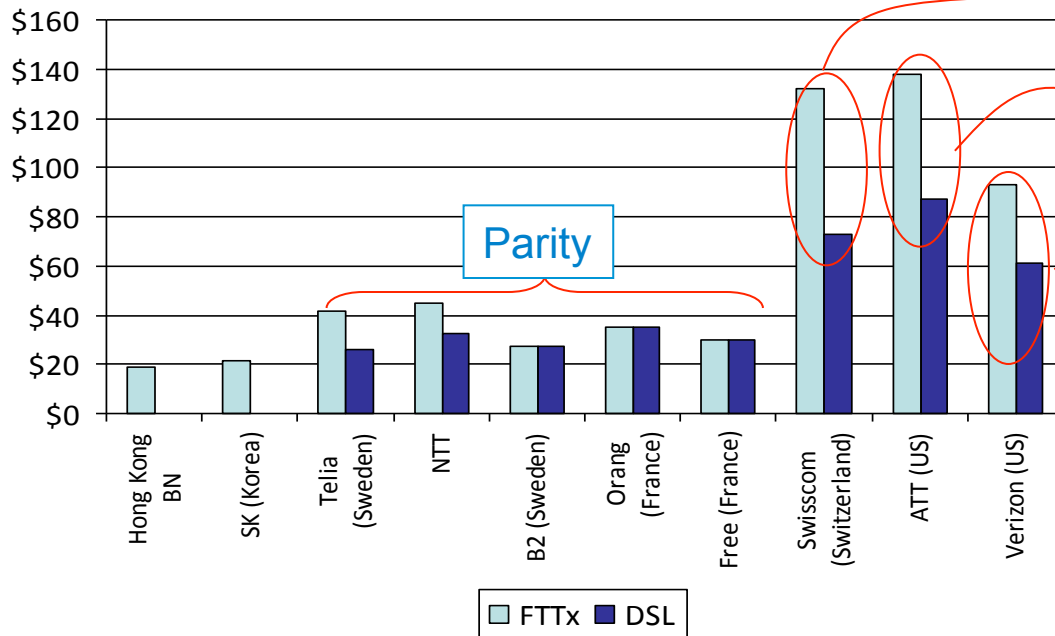
•Source: Company publications

# H1: Current FTTx strategies in several countries indicate serious limitations to realizing price from ultra-broadband

Offer fiber access at prices comparable to DSL

Promote speed, tv and applications offer

PRICE OF TRIPLE PLAY BUNDLES BY ACCESS TECHNOLOGY



ADDITIONAL OFFER ON FIBER BUNDLE

- Fiber: 9 HD channels, 40 Mbps more
- Fiber: 270 more channels, 6 Mbps more
- Fiber: 40 HD channels, 9 Mbps more

Sources: IDATE; NTT; analysis by the author

# H1: In light of the limits to capture value from speed, the perspective for telcos is not attractive

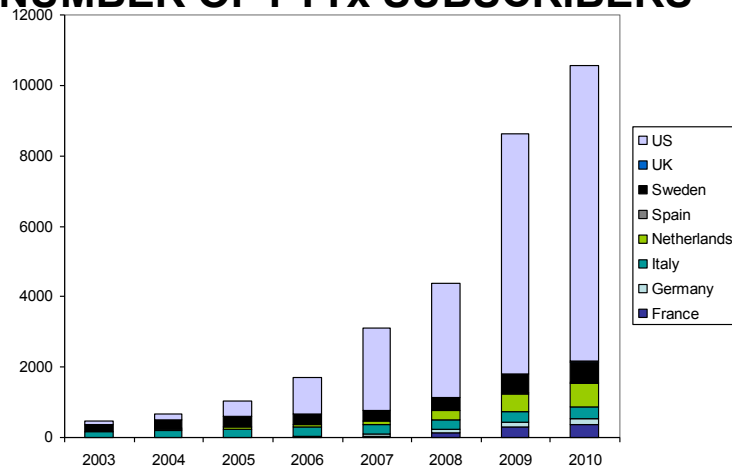
## Europe

- FTTx accounts for under 10% of broadband connections
- Customers continue to be satisfied with DSL (including ADSL 2+ offers), especially their bundled offers
- Operators are struggling to offer innovative services, while funding deployment in light of competing LTE opportunities and limited CAPEX

## United States

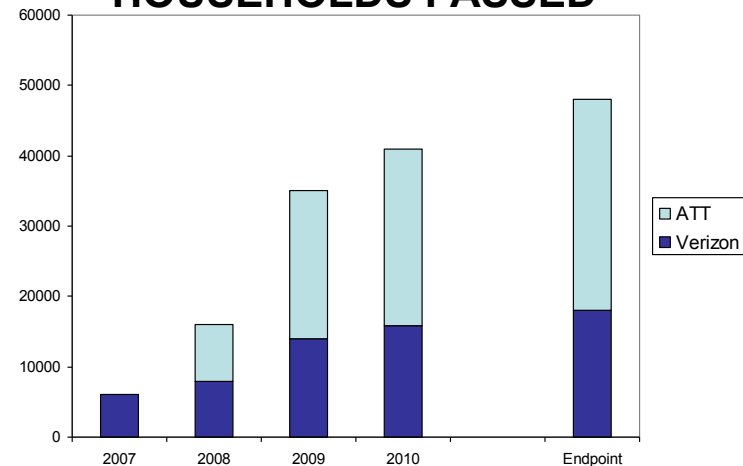
- Aggressive fiber deployment has enabled telcos to prevent the migration of DSL customers (searching to higher speeds) to cable broadband
- However, telcos are not expected to cover more than 40 % of the footprint leaving the rest of the territory to cable broadband providers (see below)
- Therefore, in order to limit their DSL losses, telcos need to gain a larger share in fiber served areas
- However, cable will retaliate any telco moves by dropping the TV prices and squeezing telcos out

**UNITED STATES/EUROPE:  
NUMBER OF FTTx SUBSCRIBERS**



Source: IDATE

**UNITED STATES: NUMBER OF  
HOUSEHOLDS PASSED**



Source: Operators reports



# H1: In fact, a large portion of FTTH/B rollouts in Europe are carried out by non-telco incumbents (without even counting DOCSIS 3.0)

Incumbent Telco		Alternative Carrier		Cable TV Operator		Power Utility	
Name	Homes Passed	Name	Homes Passed	Name	Homes Passed	Name	Homes Passed
TDC	230,000	SFR	500,000	Blizoo	1,000,000	Net Cologne	200,000
Telia Sonera	550,000	Slovenia	310,000	Numericable	4,500,000	Wilhelm Tel	200,000
France Telecom	640,000	T2	310,000			Altibox	260,000
Magyar telecom	235,000	Fastweb	2,000,000				
Telecom Italia	450,000						
TEO	570,000						
KPN	658,000						
Portugal telecom	1,000,000						
Orange Slovensko	370,000						
Telefonica	350,000						
T-Com/Slovak	370,000						
<b>TOTAL</b>	<b>5,423,000</b>		<b>3,120,000</b>		<b>5,500,000</b>		<b>660,000</b>

Source: IDATE

**9,280,000**

## **H2: In this context, it is pertinent to examine the additional impact of a migration of consumers to web-based TV (“Over The Top”)**

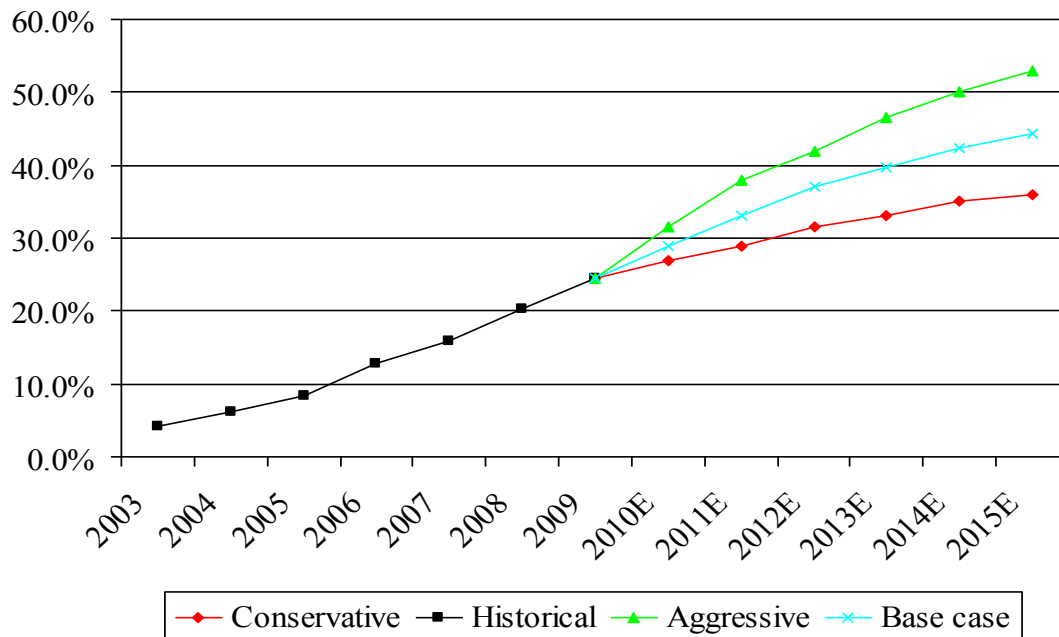
- **Video downloading from the Internet is increasing rapidly in the US**
- **In In the 2Q10, the major public pay TV companies reported a decline in video subscribers**
  - **In total, the pay TV operators lost 16k customers in 2Q, which is the first time we have ever seen a decline**
  - **The telecom companies added 383k customers, the cable companies lost 480k, and the satellite companies added 81k, for a total loss of 16k.**
  - **Each category (telecom, cable, and satellite) saw its net adds get worse year-over-year**
- **In the 3Q10, the pay TV services market declined for the second quarter in a row**
  - **Total number of video subscribers declined by roughly 133,000, with cable losing 702,000**
  - **Management of pay TV operators continue to blame the economy except that declines in past quarters (2009) were not that sharp and demand for higher speed broadband and smartphones experience record growth**
- **There are several possible reasons for this decline**
  - **There is some economic impact**
  - **Its impact on household formations (i.e. more young people staying with parents for longer periods)**
  - **While churn is down, gross adds is also down (people starting a household do not request cable, similar to fixed line telephony)**
- **We also think that we are seeing the early stages of people canceling their pay TV subscriptions and watching video “over the top.”**

## **H2: There are some early signs of OTT substitution in the United States**

- **Comcast reports that 20% of their high speed data capacity usage during primer time is related to Netflix and other OTT video providers**
- **Netflix subscriber base grew 25% in 2010; current subscribers: 20 million, revenues \$ 2 billion**
- **28% of students in a Hudson Square Research report OTT as their primary source of programming**
- **The trend will develop over the next 5 to 10 years**
- **In order not to lose the bundle discount, a lot of consumers will not disconnect their cable but could downgrade the service**
- **Still, as an obstacle for the trend to accelerate, only 5% of HDTVs sold in the US last year have capacity to go online and bypass traditional cable and satellite service**

## H2: However, it is unclear yet whether the OTT adoption curve will mirror the wireless “cutting the cord” dynamic

### U.S.: WIRELESS ONLY HOUSEHOLDS



### OTT ENABLERS

- 77.4 million web-enabled consoles sold in 2010
- OTT set-top boxes in 2.5 million households
- Content availability (Netflix, Hulu, etc.)

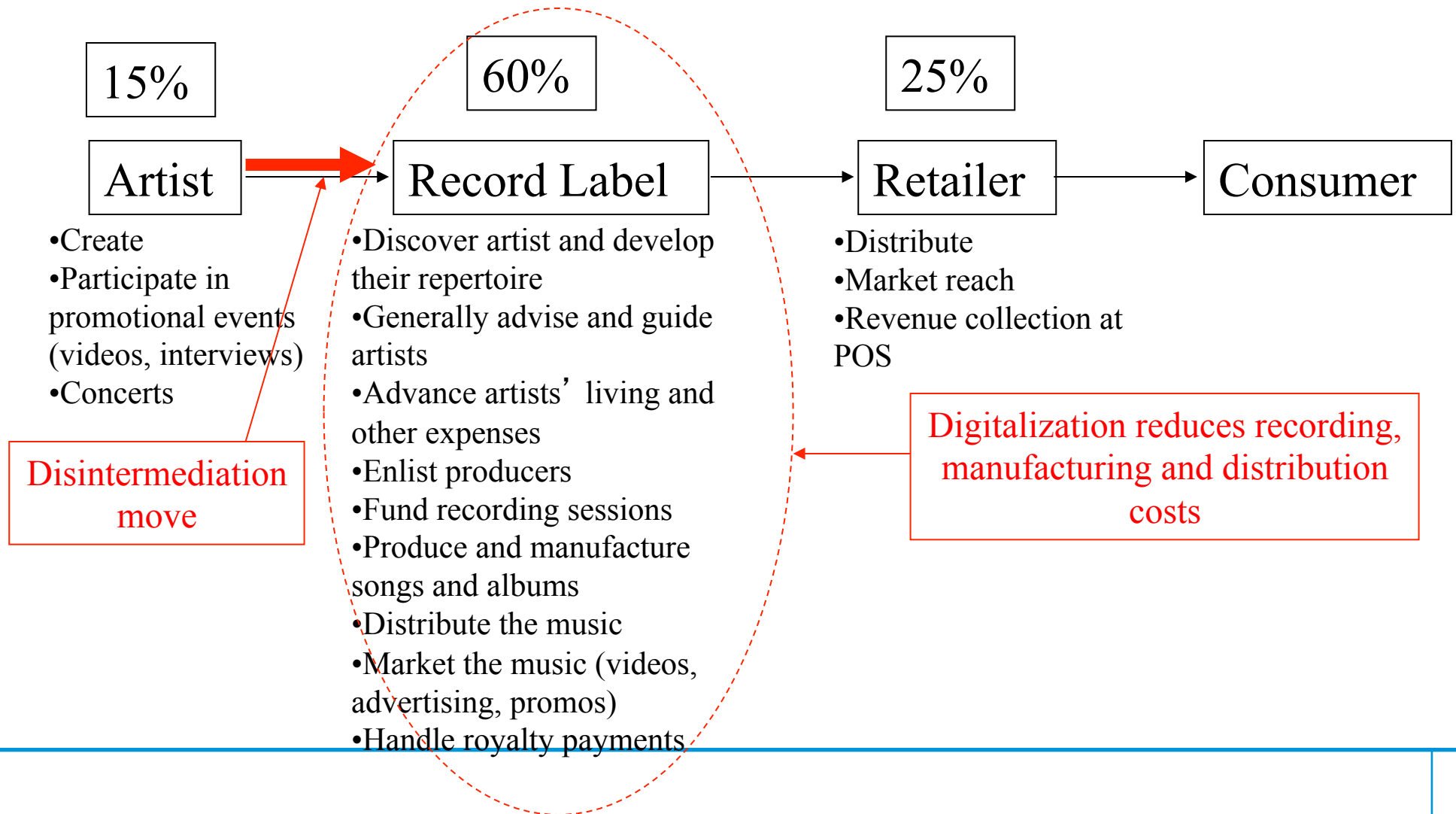
### OTT OBSTACLES

- Shortfalls in User Interface
- Live sports
- Familiarity with web-enabled TV potential

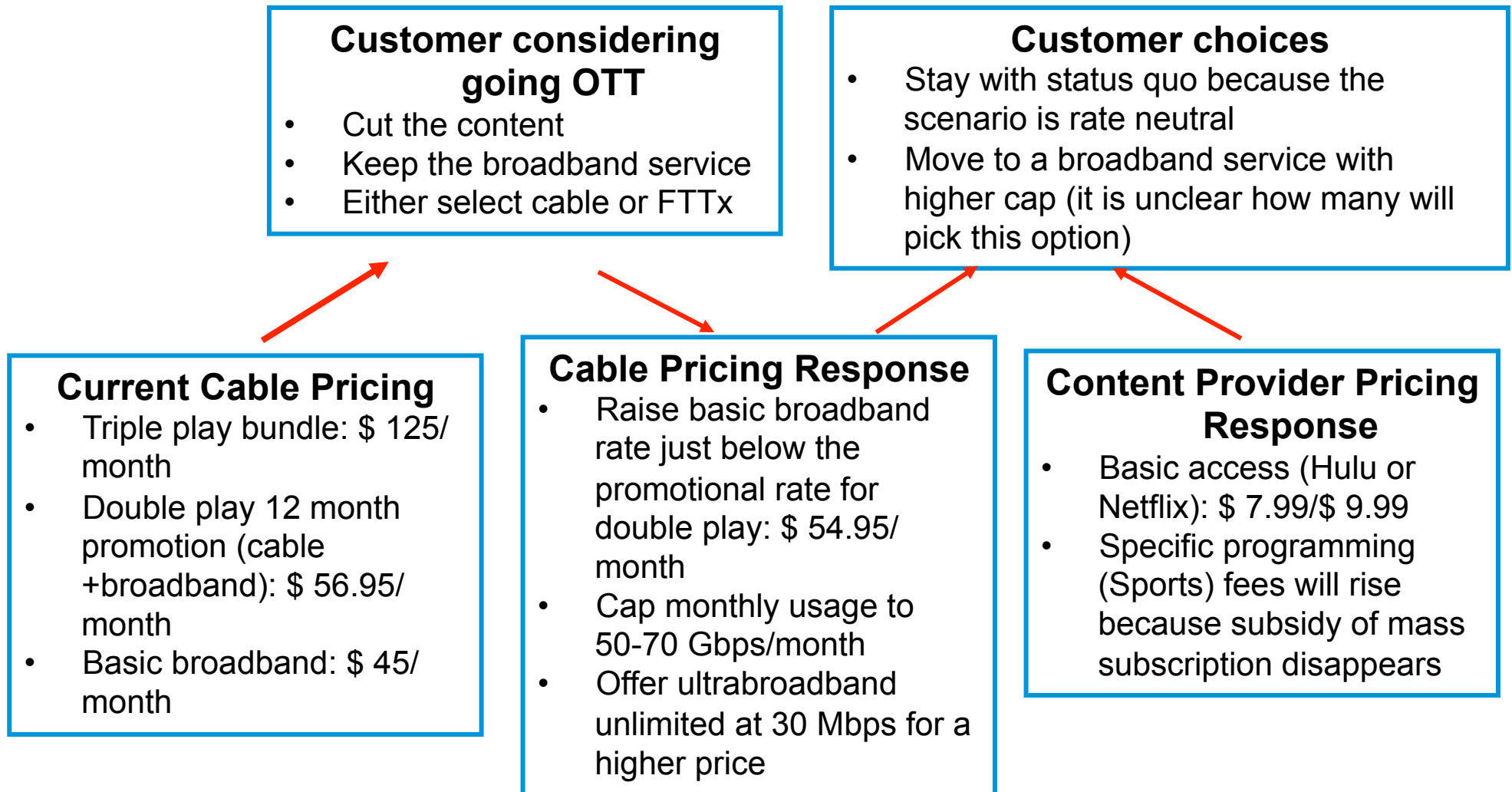
Source: National Institute of Health; Morgan Stanley

## H2: OTT could accelerate the trend toward value chain disintermediation, as happened in digital music

### VALUE CHAIN DISINTERMEDIATION IN DIGITAL MUSIC



## H2: cable operators will respond to OTT by undermining the video “price arbitrage” benefit to restore economic equilibrium



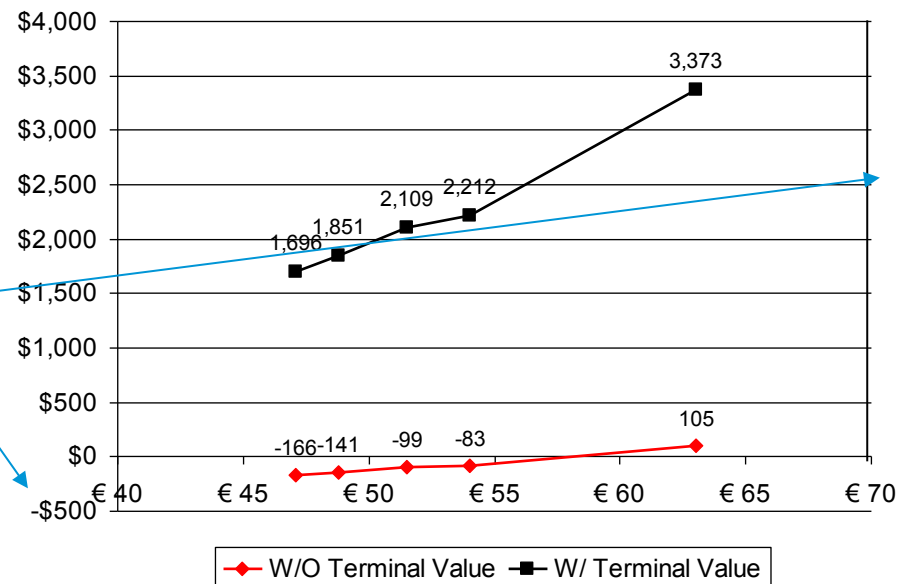
Source: Moffett, C. *US Cable and US Telecommunications: Broadband End game?* Sanford Bernstein, October 2010

## H2: As a result of the cable pricing, the pressure on telco FTTx ARPU will increase, further deteriorating the fiber business case

- A potential decrease of price of the video component of the cable bundle would squeeze the telco “ultrabroadband” providers
- Telcos pay more for video content than cable on a per sub basis
- They cannot reduce the video pricing because they count on that component to increase ARPU and reach a positive NPV of their fiber investment
- The alternative is to price aggressively in the hopes of building critical mass

### Ultra-Broadband Fiber Pricing

- France Telecom: € 34.90
- Telia: € 41.45
- Swisscom: € 132

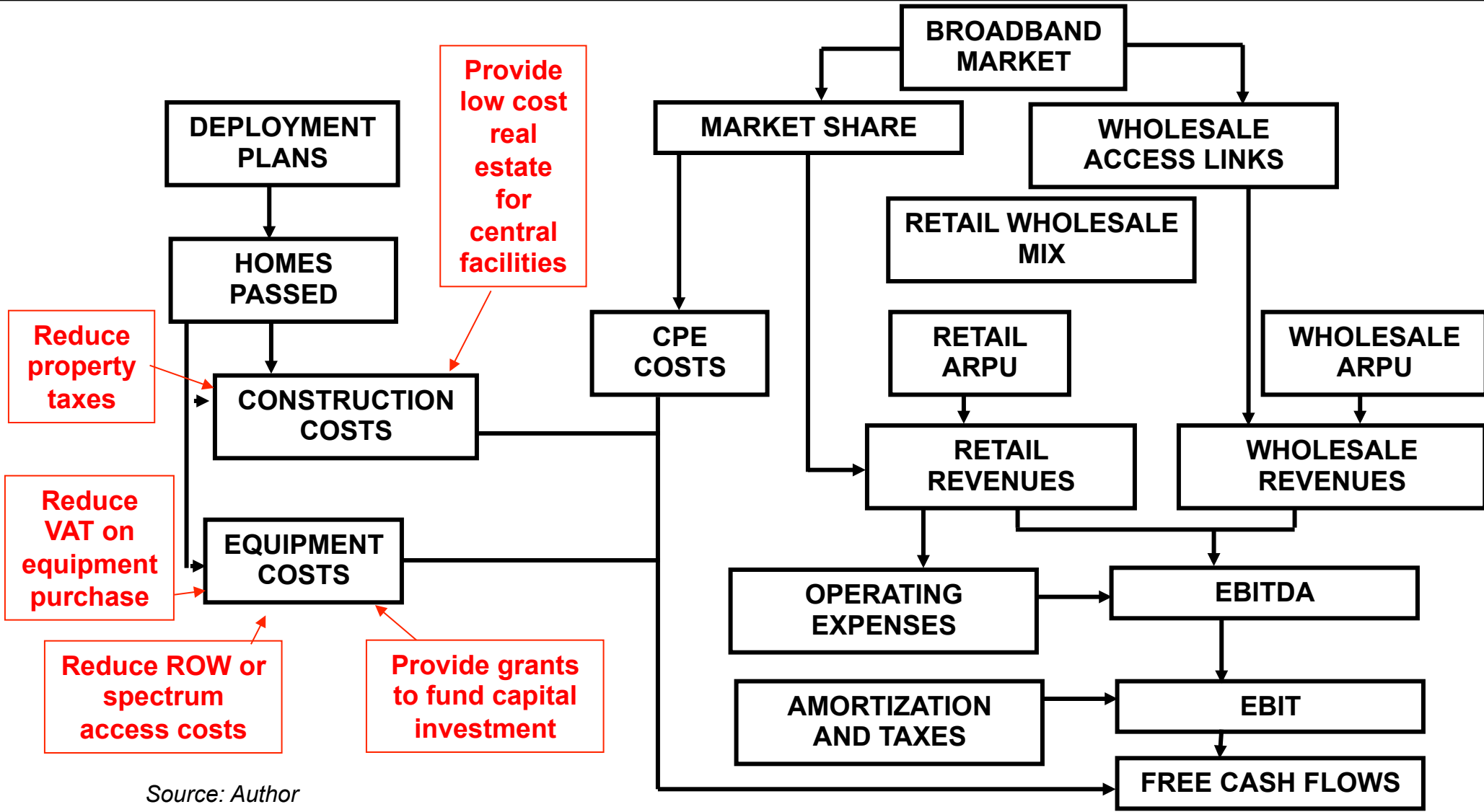


# Potential scenarios

- **Potential scenario I: telco deployment of FTTx will be limited unless shareholders are willing to reward lower ROIC**
  - ROIC for the US wireline industry is at 4.1%, while WACC is at 8%; the question is how long will this be sustainable (or better, how long can this be hidden under the carpet of wireless ROIC of 11.1%?)
  - Alternatively, telcos will limit its ultra-broadband deployment to highly dense areas, leaving the rest of the territory to DSL
- **Potential scenario II: in countries with significant cable presence (US, Netherlands, UK), cable will assume the lead in ultrabroadband deployment (Craig Moffett scenario)**
  - Cable wins over DSL in the uncovered areas
  - Cable squeezes FTTx by lowering the video component of the bundle, and raising the broadband
- **Potential scenario III: in countries with limited cable, governments will assume the lead role in deployment (Australia scenario)**
  - Government recognizes a massive market failure and intervenes through policy or other initiatives



# Under scenario III, the first approach governments should follow is to address some of the “choke” points of the business case



## **If despite incentives, private sector investment does not materialize, government intervention can be justified**

- **Condition: only if expenditures are outweighed by the broader socio-economic benefits**
- **The first question is where should the State intervene?**
  - **Which communities can be, or are, served by market forces?**
  - **Which communities will need assistance with initial investment to become self-sustaining?**
  - **Which communities cannot become self-sustaining and will require ongoing funding?**
- **The second question is how should the State intervene?**

# Modes of government intervention

- **Subsidize incumbent telco/BB to upgrade to “utility”**
- **In greenfields, government could build (contracts) for the construction of universal access network**
  - **Promote competition for government contracts to lower initial costs**
  - **Government can then auction the broadband infrastructure to highest (qualified) operator**
  - **Monopoly for wholesale-only/open access “utility” operator?**
  - **Any “loss” is a one-time infrastructure subsidy (like building a highway and road system)**

## **In conclusion, the future of ultrabroadband deployment is still fraught with uncertainties**

- **Consumers are requiring and will demand more speed**
- **Fiber deployment economics require higher price realization than what the market is allowing**
- **Over the top access to content could render the outlook for fiber deployment even more negative**
- **In this context, cable (in countries where it is well developed) could assume a leading role in deploying ultra-broadband**
- **In all scenarios, if governments recognize broadband positive externalities, they might need to assume a larger role, through policies that stimulate private sector investment or direct intervention, to make sure deployment targets are met**

