

# Economics of Video Telephony and VoIP over EV-DO Rev A

A Service Provider Value Proposition



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**Networks 2008, Budapest**

**2 October 2008**

## Agenda

1. Study Overview
2. Key Driver of Value Proposition
3. Economic Models
  - VoIP
  - Video Telephony
4. Summary

## Study Overview

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### Premise

In addition to providing a viable migration path to 4G and investment preservation, EV-DO Rev A generates significant economic gains because of

- ▶ Higher voice capacity
- ▶ Higher data throughput capacity
- ▶ Incremental profit potential of new services

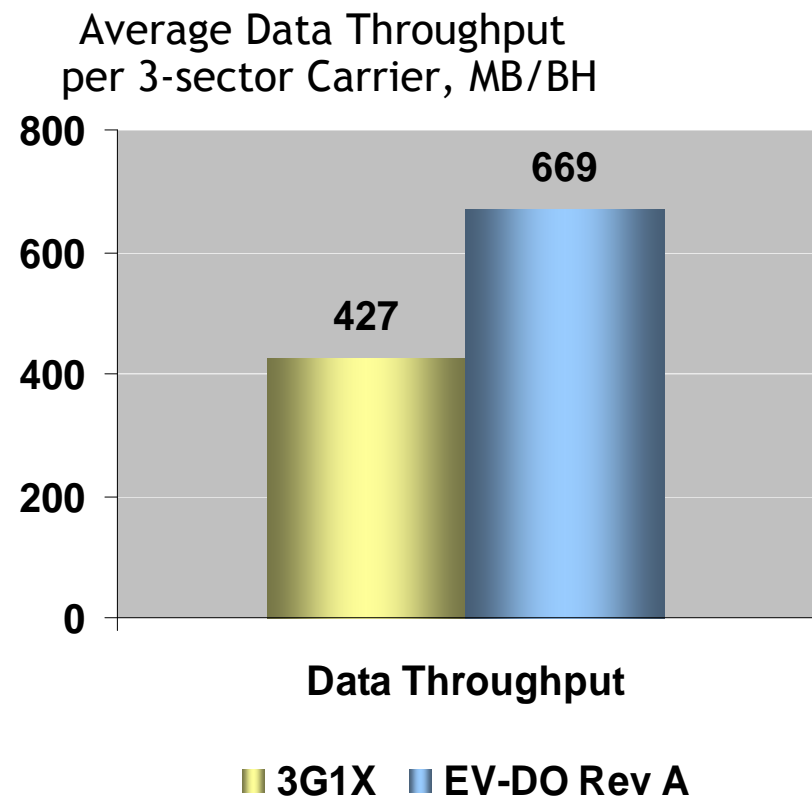
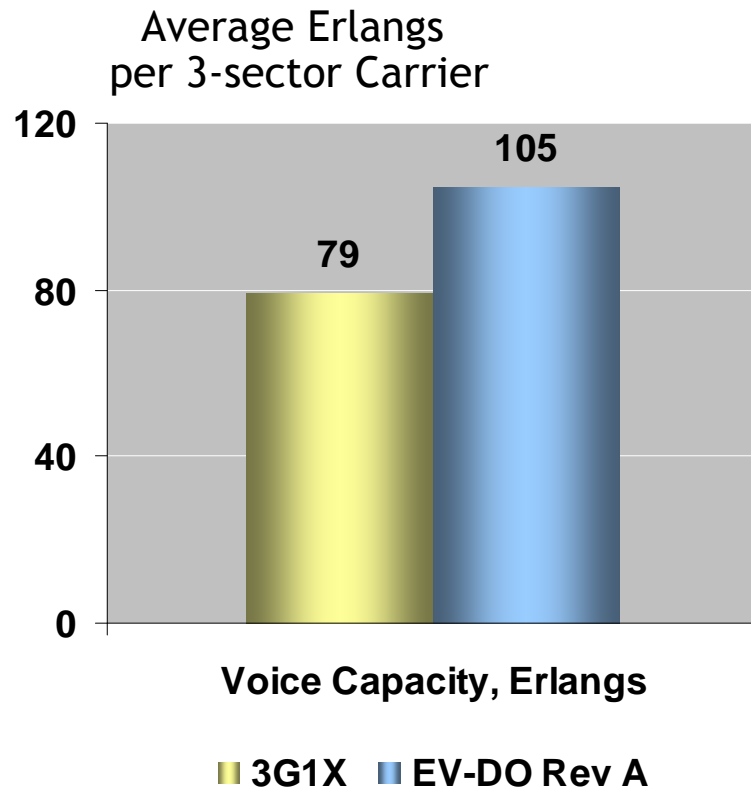
### Objective

Quantify the telecom operator value proposition of EV-DO Rev A for

- ▶ VoIP
- ▶ Video Telephony

# Key Driver of Value Proposition

## Increase in Voice and Data Capacity



Carrier voice capacity increases by 34%, and data capacity by 57% with EV-DO Rev A



VoIP



## Modeling Construct

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### Incremental Analysis

Economic value of VoIP over DO Rev A is derived from the incremental revenue, incremental capex and incremental opex under the proposed Future Mode of Operations (FMO) relative to the Present Model of Operations (PMO) where

**PMO:** Entire voice traffic carried over 3G1X network

**FMO:** Voice traffic increasingly migrating to VoIP over DO Rev A

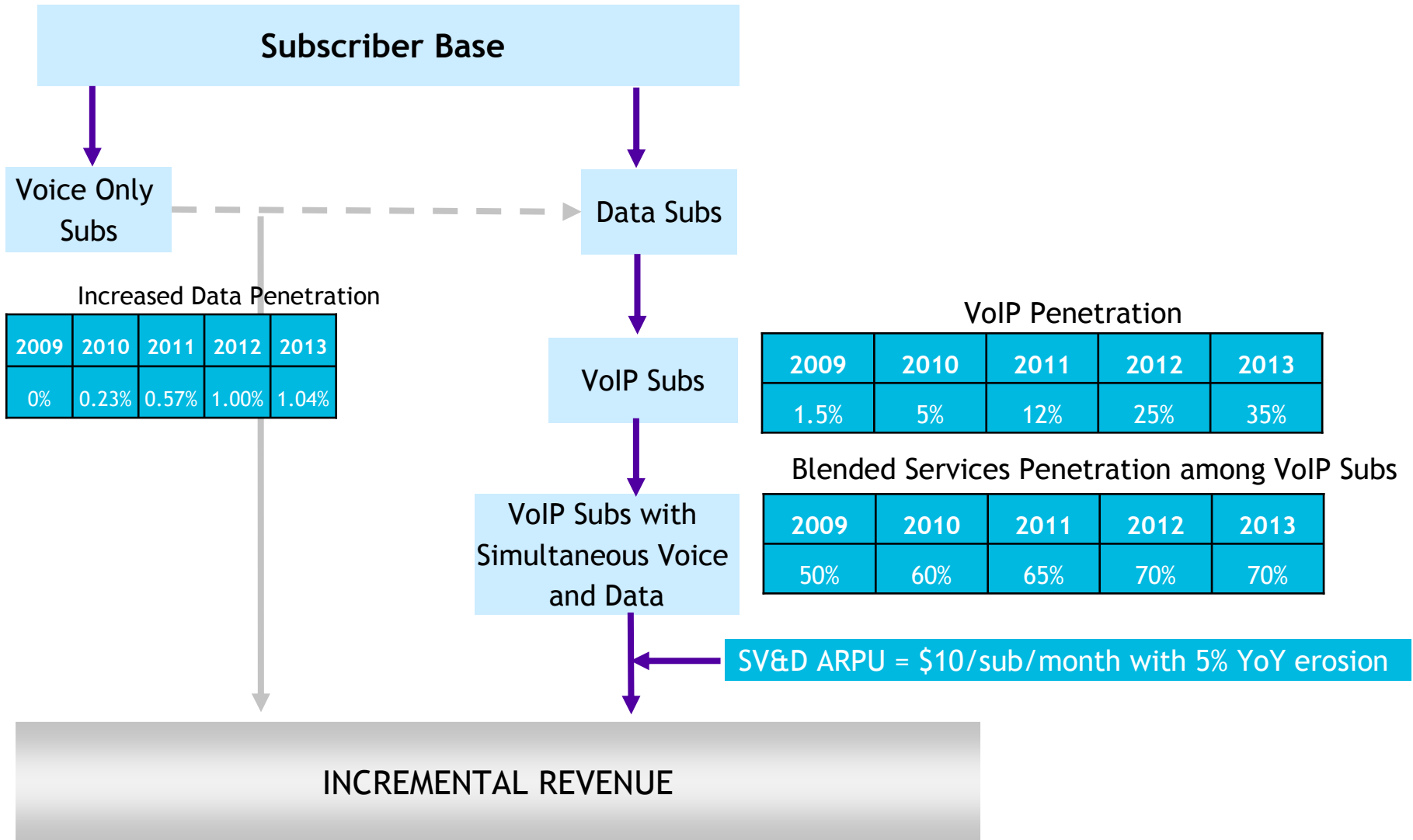
### VoIP Adoption

VoIP penetration occurs initially among heavy data users who consider VoIP as an enabler for simultaneous voice and data services. VoIP demand diffusion results in progressively higher penetration among other subscribers.

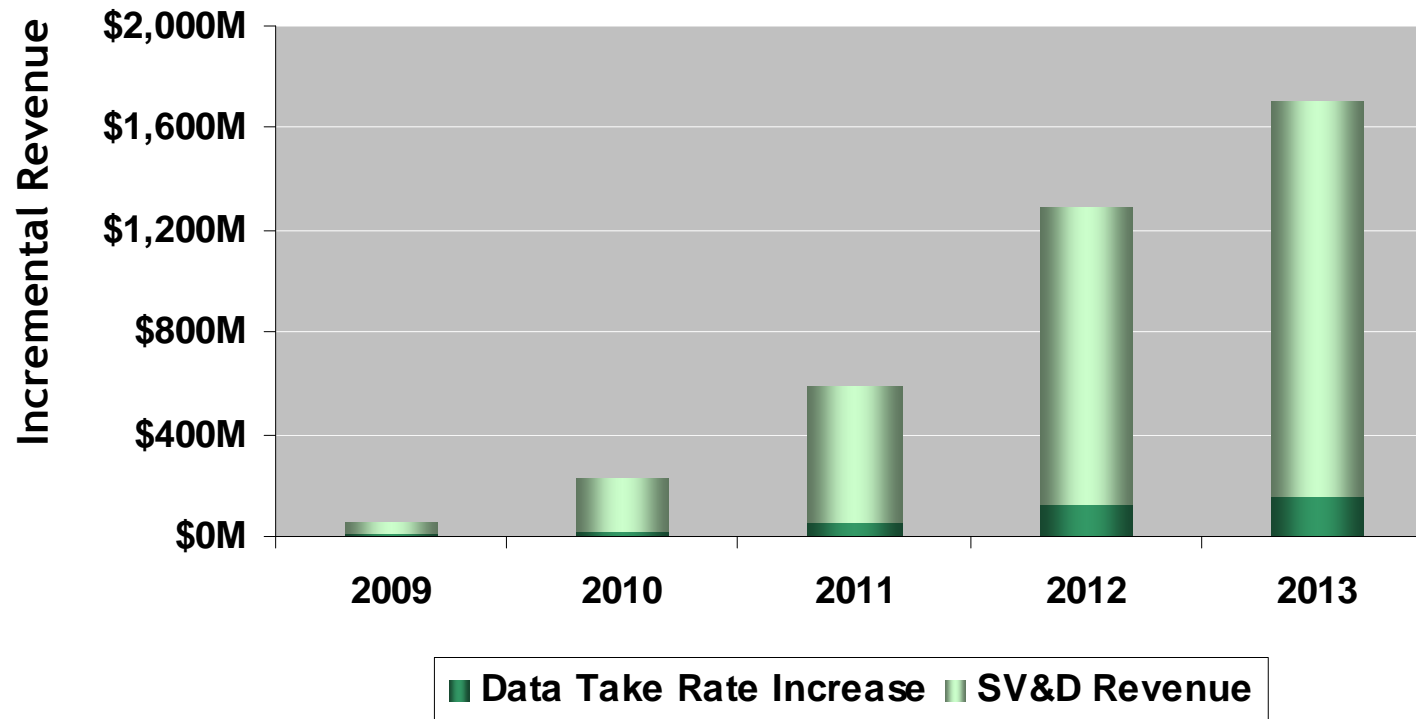
VoIP adoption results in

- Incremental revenue: Higher ARPU for simultaneous VoIP and data (SV&D) capability, monetized through an incremental charge
- Higher data penetration
- Lower churn due to improved quality of experience

# Incremental Revenue Model

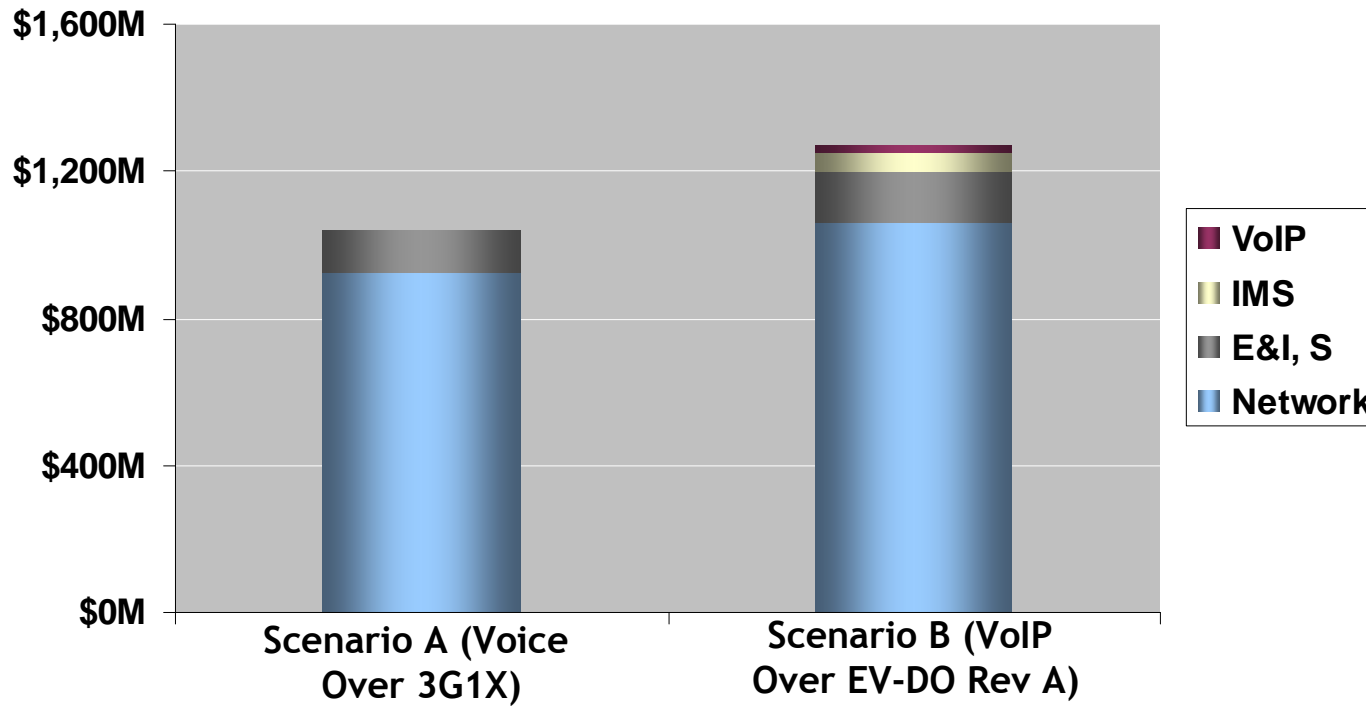


## Impact of Incremental Revenue



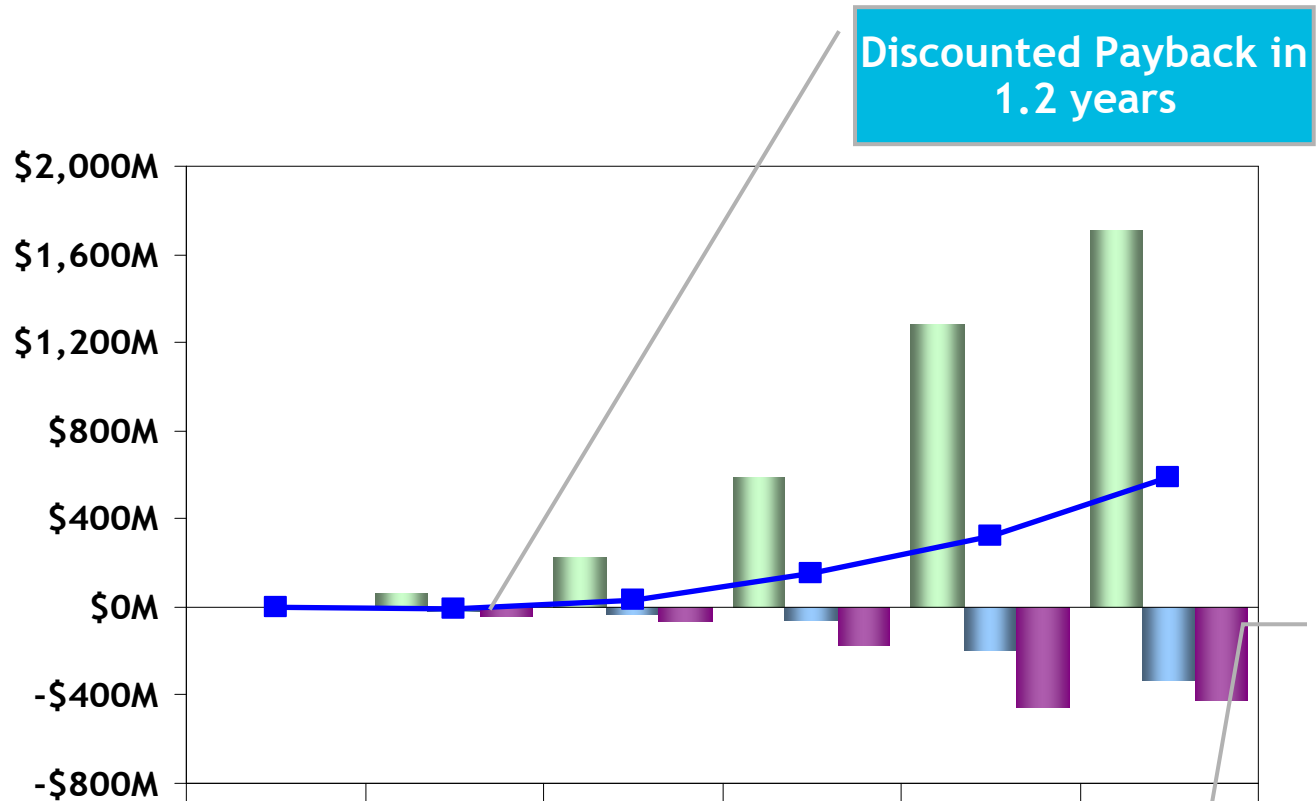
Simultaneous Voice and Data service provides the major share of incremental revenue

## Impact on Capital Expense



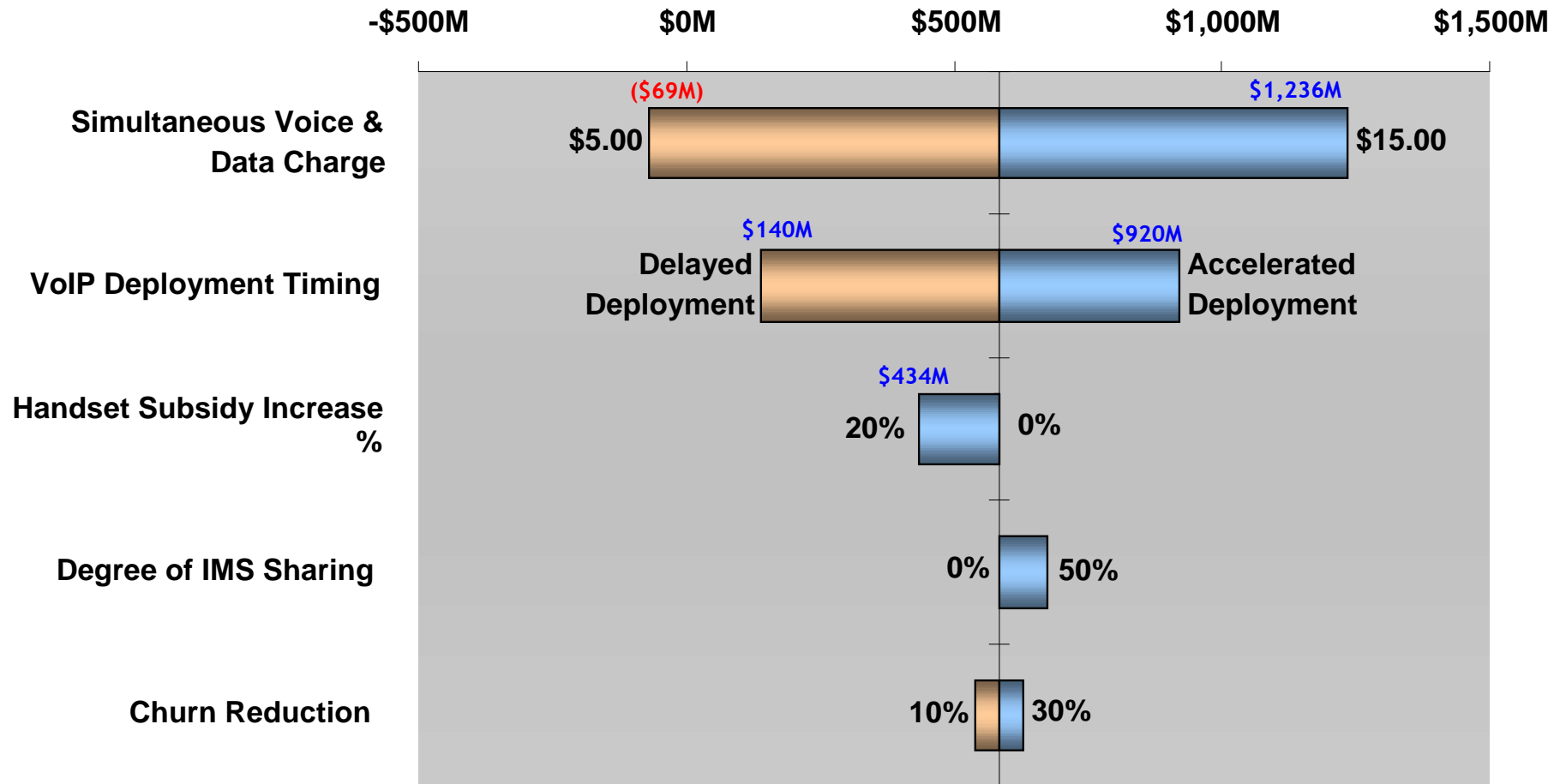
Capital investment shifts from 3G1X carriers to EV-DO Rev A carriers, IMS and VoIP, facilitating future investment growth.

# Incremental Cash Flows



	2008	2009	2010	2011	2012	2013
Incremental Revenue	\$0M	\$60M	\$228M	\$591M	\$1,286M	\$1,708M
Incremental Opex	\$0M	-\$17M	-\$34M	-\$59M	-\$198M	-\$330M
Incremental Capex	\$0M	-\$42M	-\$67M	-\$173M	-\$450M	-\$420M
Cum NPV	\$0M	-\$11M	\$35M	\$155M	\$321M	\$585M

# Sensitivity Analysis



Incremental SV&D charge, VoIP deployment timing and handset subsidy impact VoIP profitability critically.



# Video Telephony

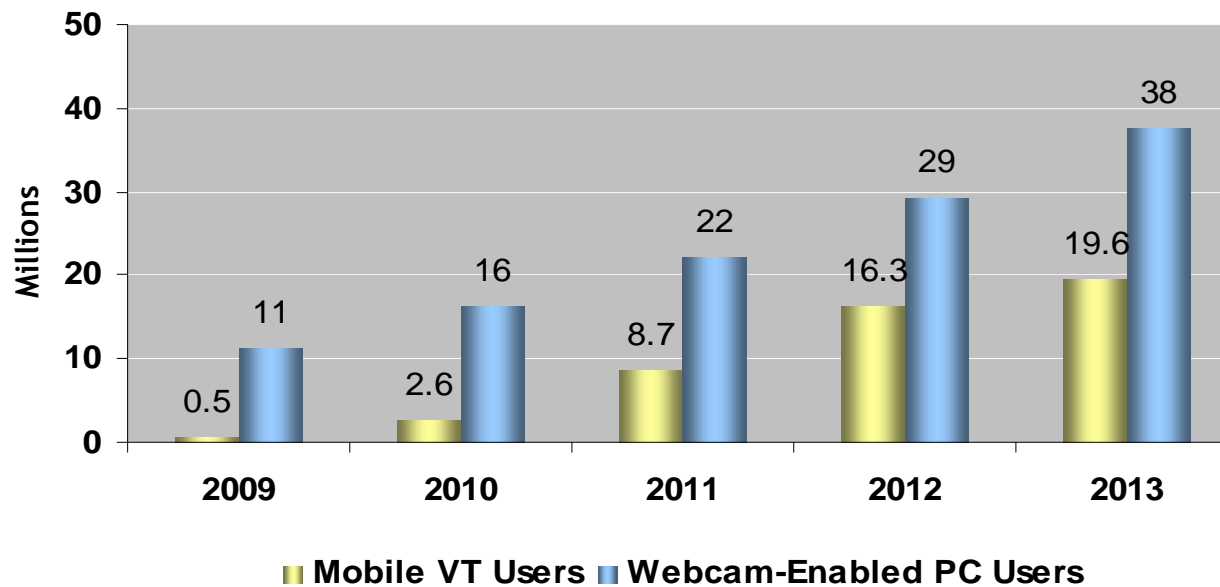
## Modeling Construct

### Value Analysis

Economic value of Video Telephony over EV-DO Rev A is based on new service revenue, and incremental capex and opex

### Video Telephony Revenue Model

Video Telephony is adopted by subscribers with VT-enabled devices. Total minutes of use include mobile-to-mobile and mobile-to-PC calls.



# Revenue Model

Subscriber Base

3G Subs

EV-DO  
Rev A Subs

VT Subs

TOTAL VIDEO TELEPHONY REVENUE

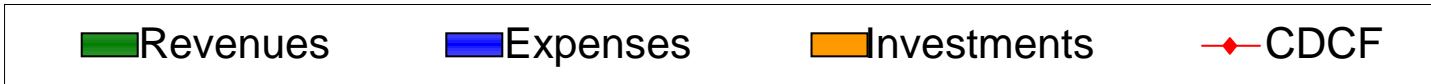
### VT Penetration

2009	2010	2011	2012	2013
5%	8%	11%	13%	15%

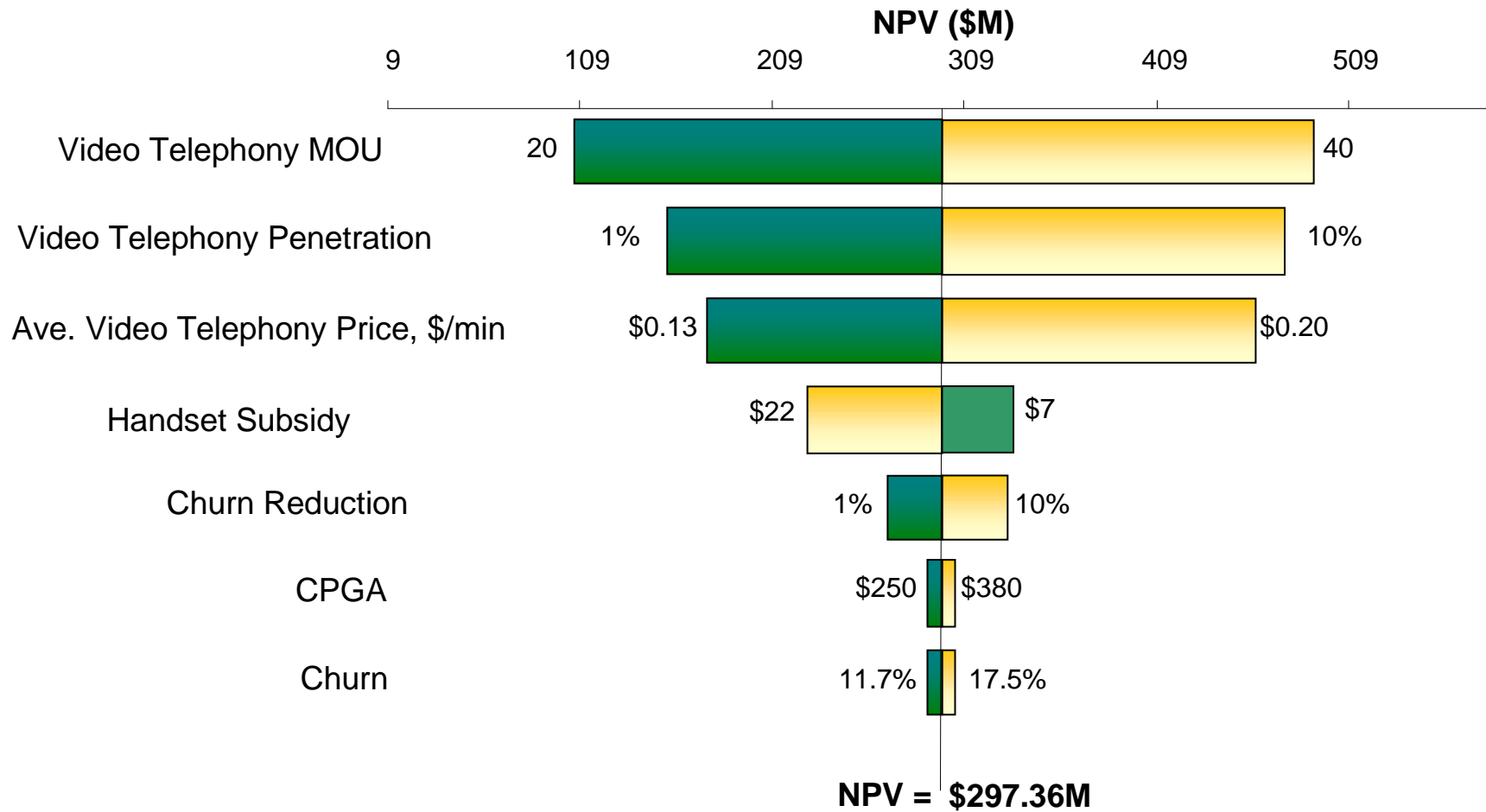
### ARPU, \$/mo

2009	2010	2011	2012	2013
\$4.79	\$4.98	\$5.17	\$5.37	\$5.58

# Cash Flows



# Results - Sensitivity Analysis



Critical parameters are VT MOU, VT Penetration Rate and VT Price/Min

## Summary

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1. Higher voice capacity and data throughput enabled by the greater spectral efficiency of EV-DO over Rev A enables profitable new services, in addition to improving network costs.
2. In the case considered, VoIP over EV-DO Rev A has a 5-year NPV of \$585 million, relative to circuit-switched voice over 3G1X, over 2009-2013. This value is critically sensitive to ARPU generated by the simultaneous voice and data charge, the timing of VoIP deployment, and the handset subsidy required for VoIP deployment, but it is positive for wide range of parameter values.
3. In the case considered, Video Telephony generates 5-year NPV of \$297 million over 2009-2013 as a standalone service. This value is sensitive to VT minutes of use, VT penetration rate and VT Price/min, but remains positive for a wide range of parameter values.

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