

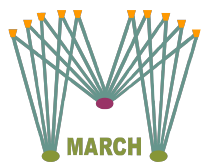


An early business assessment showing profitable multilink networks

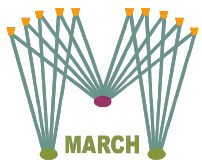
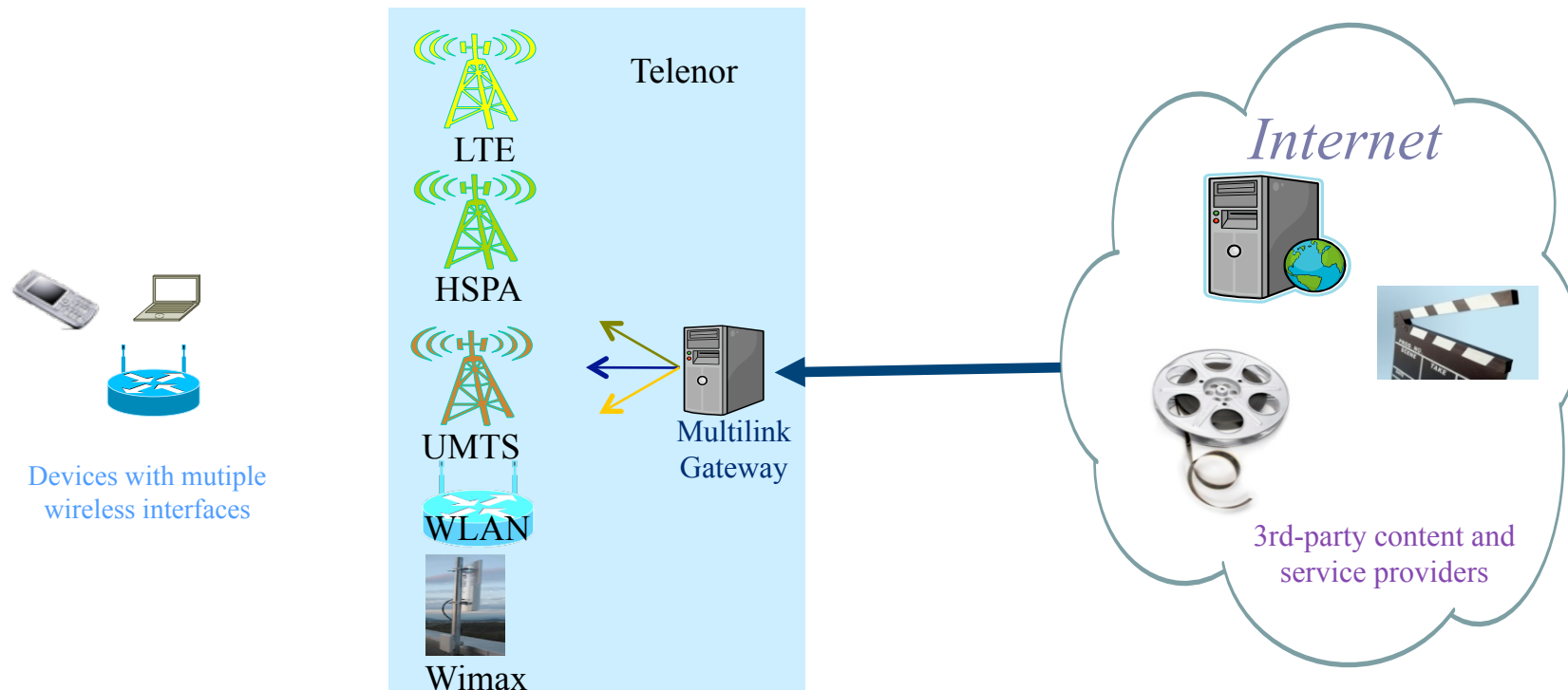
Audun Fosselie Hansen, Simula Innovation

# Multilink solutions open new business opportunities

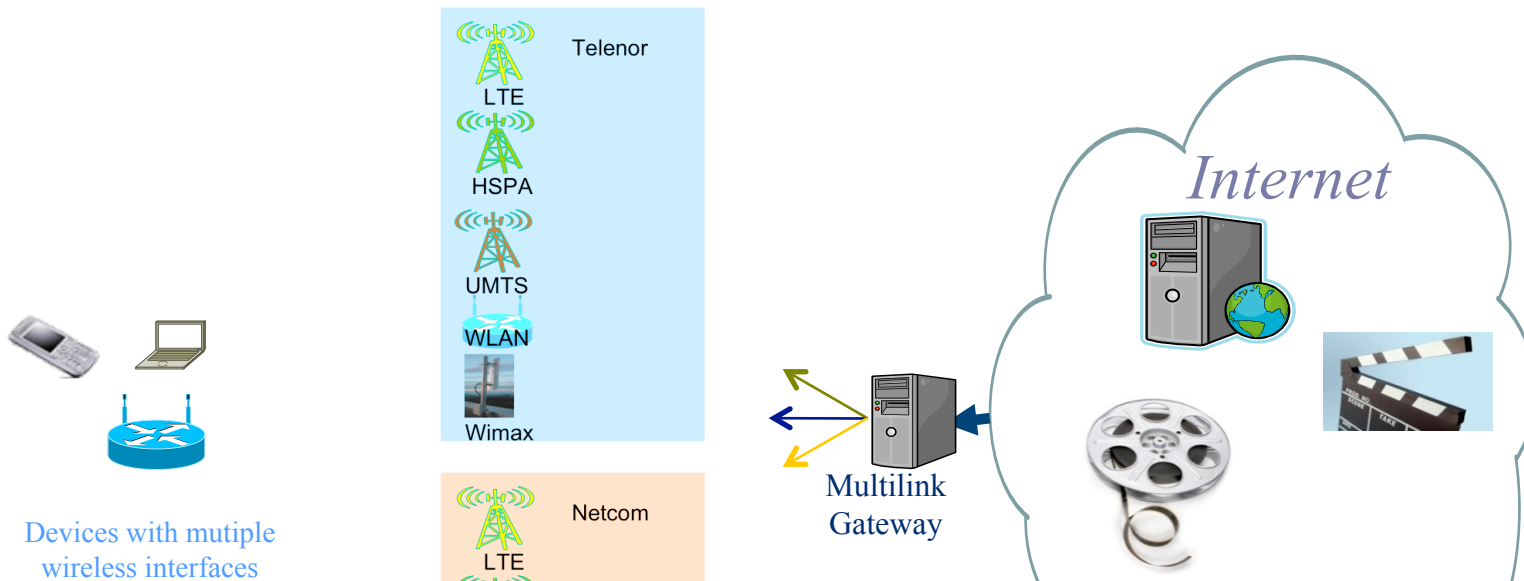
- No changes to standards
- No changes to operating systems
- New apps
- New roles
- New actors
- Limited investments
- Positive business case
- Happy customers



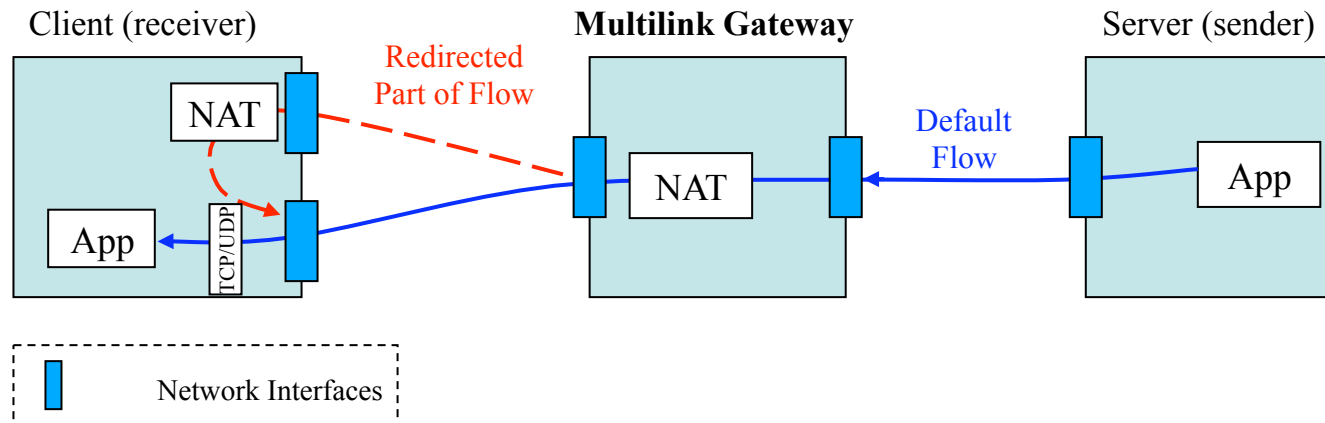
# Multilink gateway enables solutions that avoid OS hacking and server changes



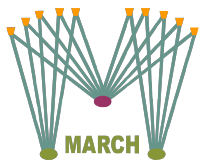
# Multilink gateway enables solutions that avoid OS hacking and server changes



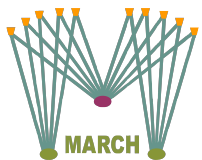
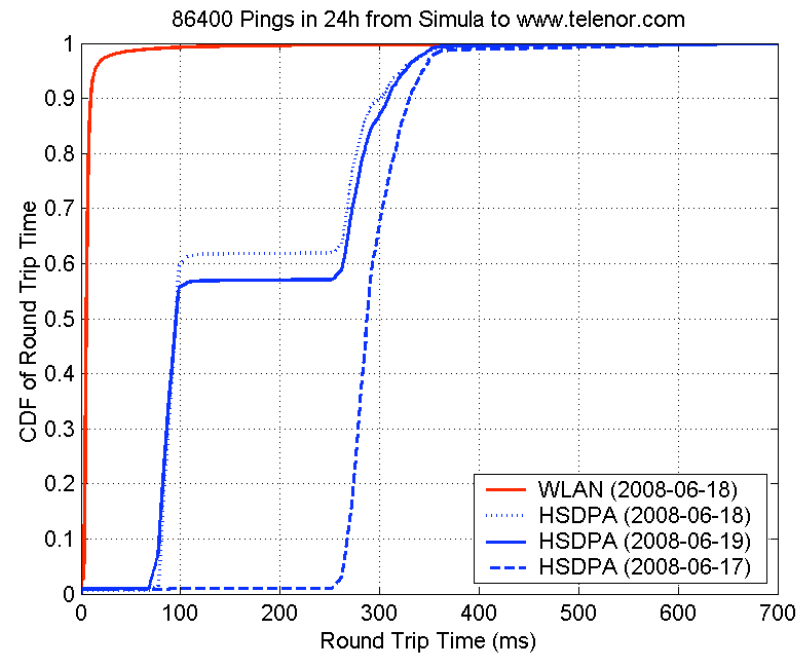
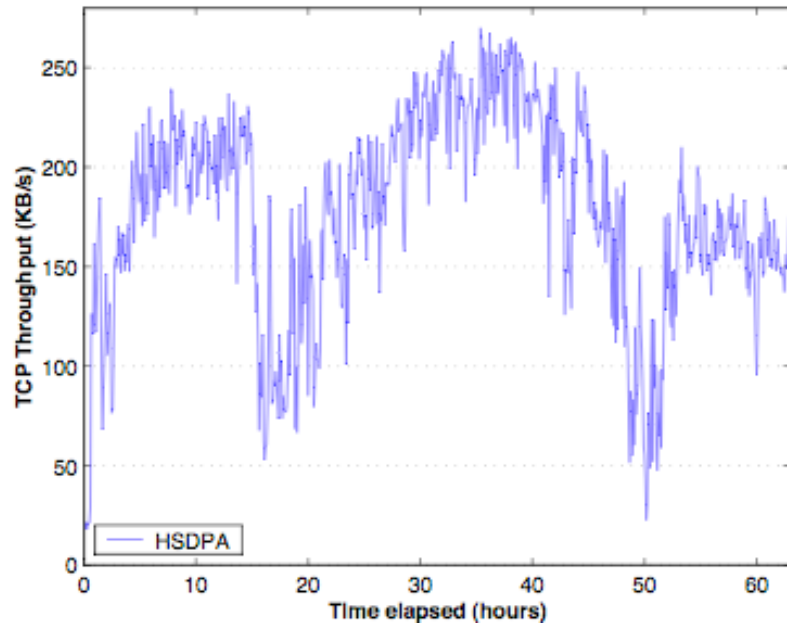
# One stream for transport layer



Heterogeneity and dynamics are challenges

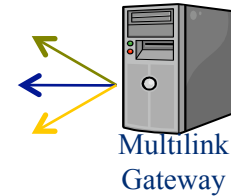


# Heterogeneity and dynamics characterize WLAN and HSDPA



# Multilink solutions introduce new roles for existing or new actors

Multilink network enabler/mediator



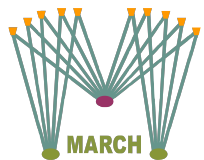
Multilink terminal enabler



(Multilink Broker)



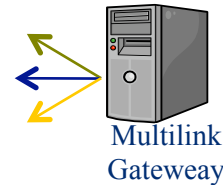
NetCom



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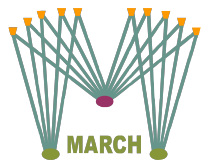
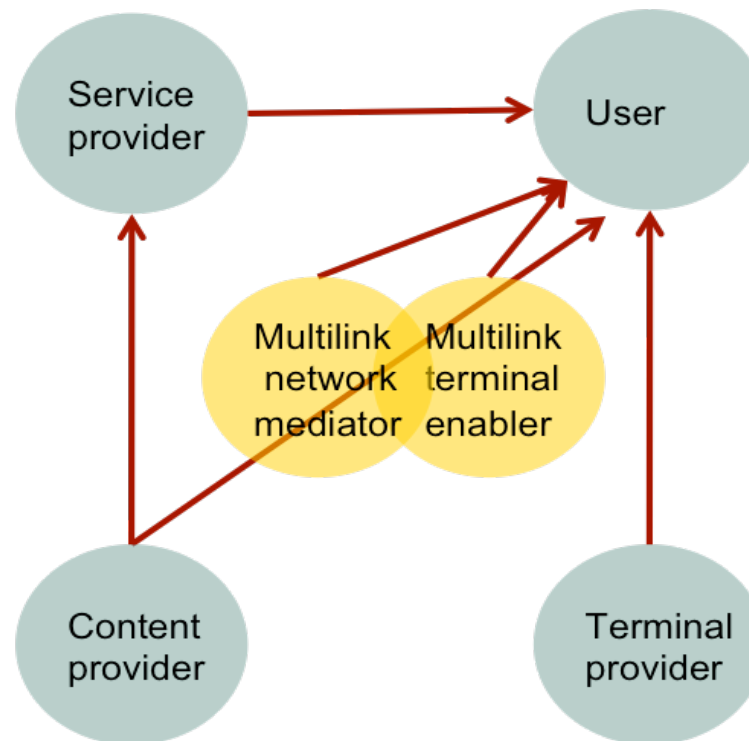
# Analysis of a simple scenario shows the first potential

Actor that has the role of **network mediator**  
and **software enabler**



User provides multiple subscriptions and terminal HW

Multiple 3G and WLAN





# A business analysis is based on some key assumptions

Discount rate: 6 %

Population: 5 000 000

Mobile penetration: 90 %

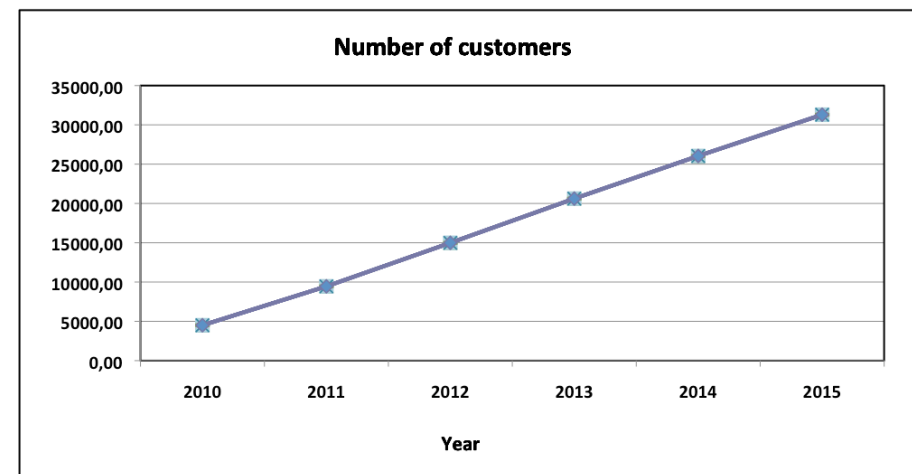
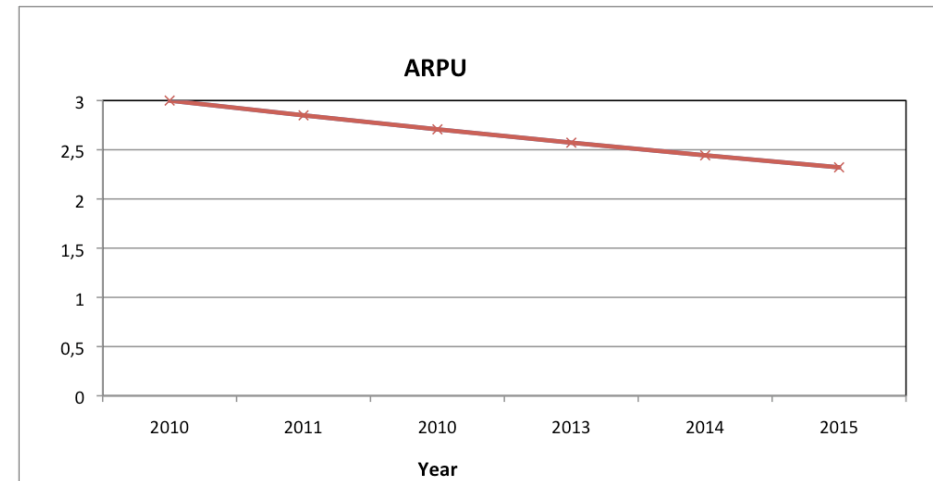
Multilink terminal penetration year 0: 20 %

New customers every year: 0.5 %

Yearly decrease of current customers: 10 %

ARPU per month customer: 3 Euro

Yearly ARPU reduction: 5 %



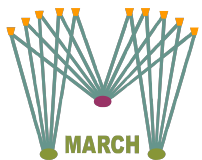
# How much and how many?

## Unit cost

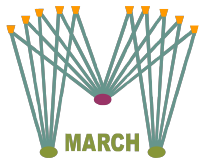
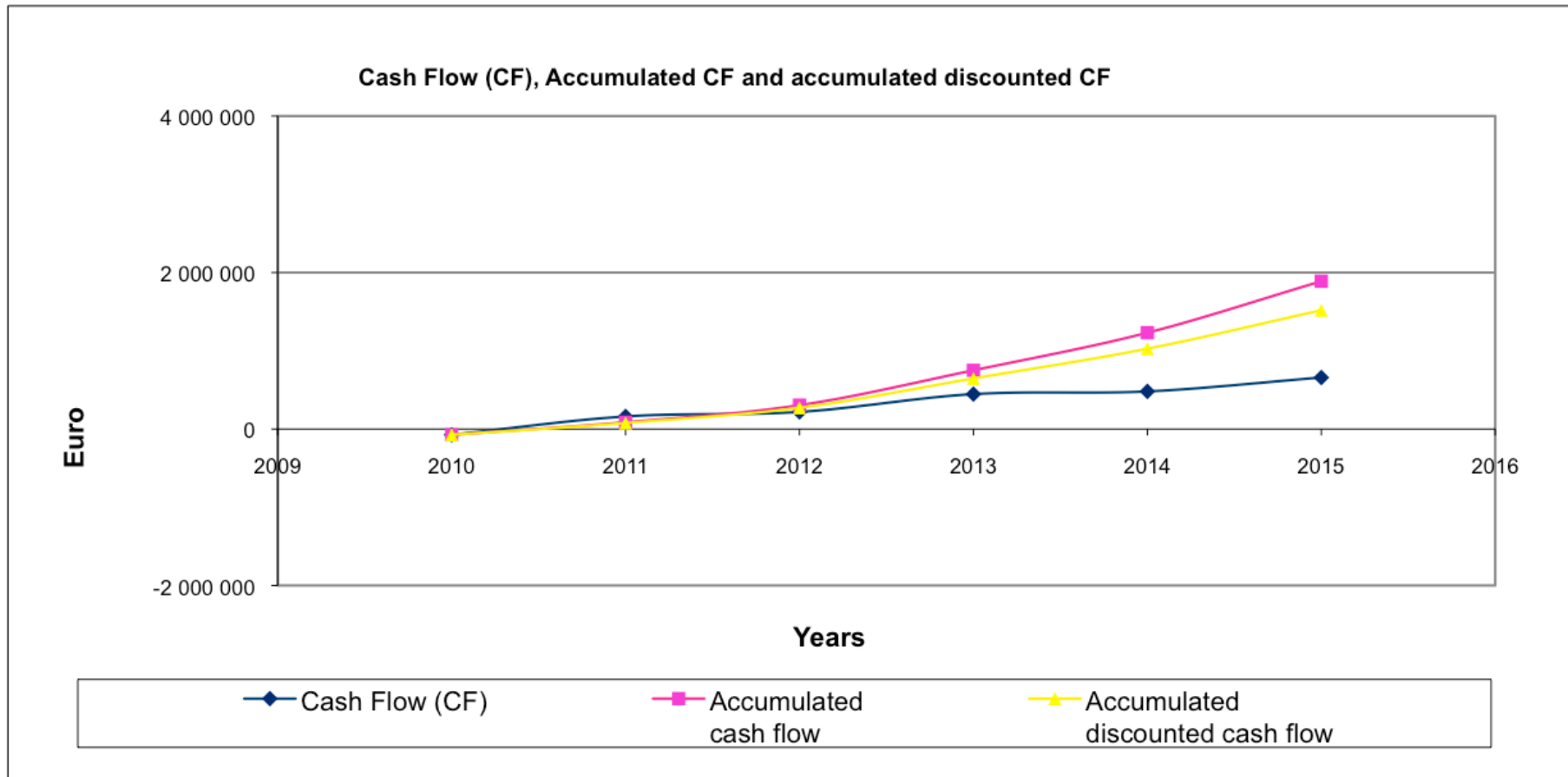
	2010	2011	2012	2013	2014	2015
Multilink terminal Software	8	5,6	4,2	3,36	2,856	2,5704
Proxy	100000	95000	90250	85738	81451	77378
OPEX per year (e.g marketing, support etc.)	100 000	110 000	115 500	121 275	127 339	133 706

## Shopping list

	2010	2011	2012	2013	2014	2015
Multilink terminal Software	4 500	9 450	14 985	20 615	26 037	31 292
Proxy	1		1		1	
OPEX per year (e.g marketing, support etc.)	1	1	1	1	1	1



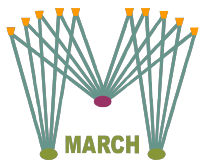
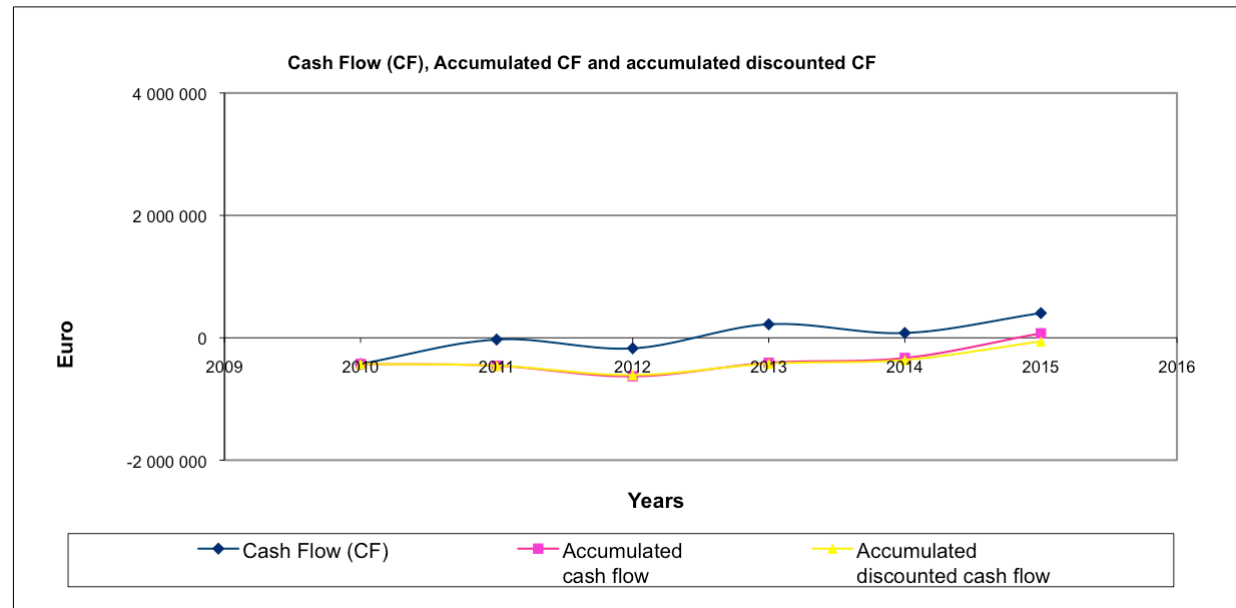
# One scenario that turns out positive



# The results are very sensitive with respect to assumptions

## Unit cost

	2010	2011	2012	2013	2014	2015
Multilink terminal Software	20	14	11	8	7	6
Proxy	300 000	285 000	270 750	257 213	244 352	232 134
OPEX per year (e.g marketing, support etc.)	200 000	220 000	231 000	242 550	254 678	267 411



Discount rate: 6 %

Population: 5 000 000

Mobile penetration: 90 %

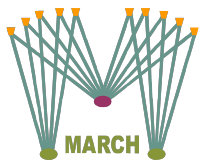
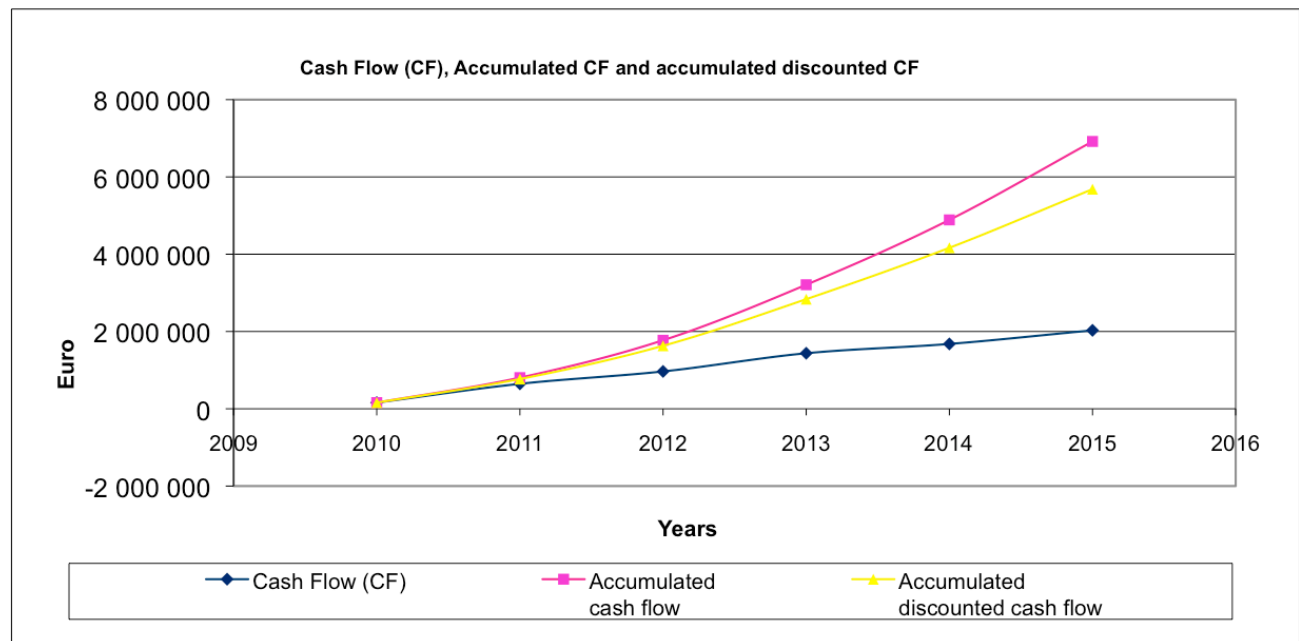
Multilink terminal penetration year 0: 20 %

**New customers every year: 1.0 %**

Yearly decrease of current customers: 10 %

**ARPU per month customer: 4 Euro**

Yearly ARPU reduction: 5 %



# The picture is more complex

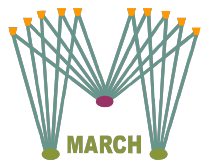
Sell new and higher quality applications

Keep customers

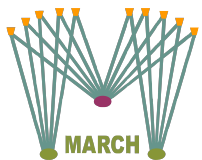
Happy customers

Attract customers

Better utilization of network resources



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