

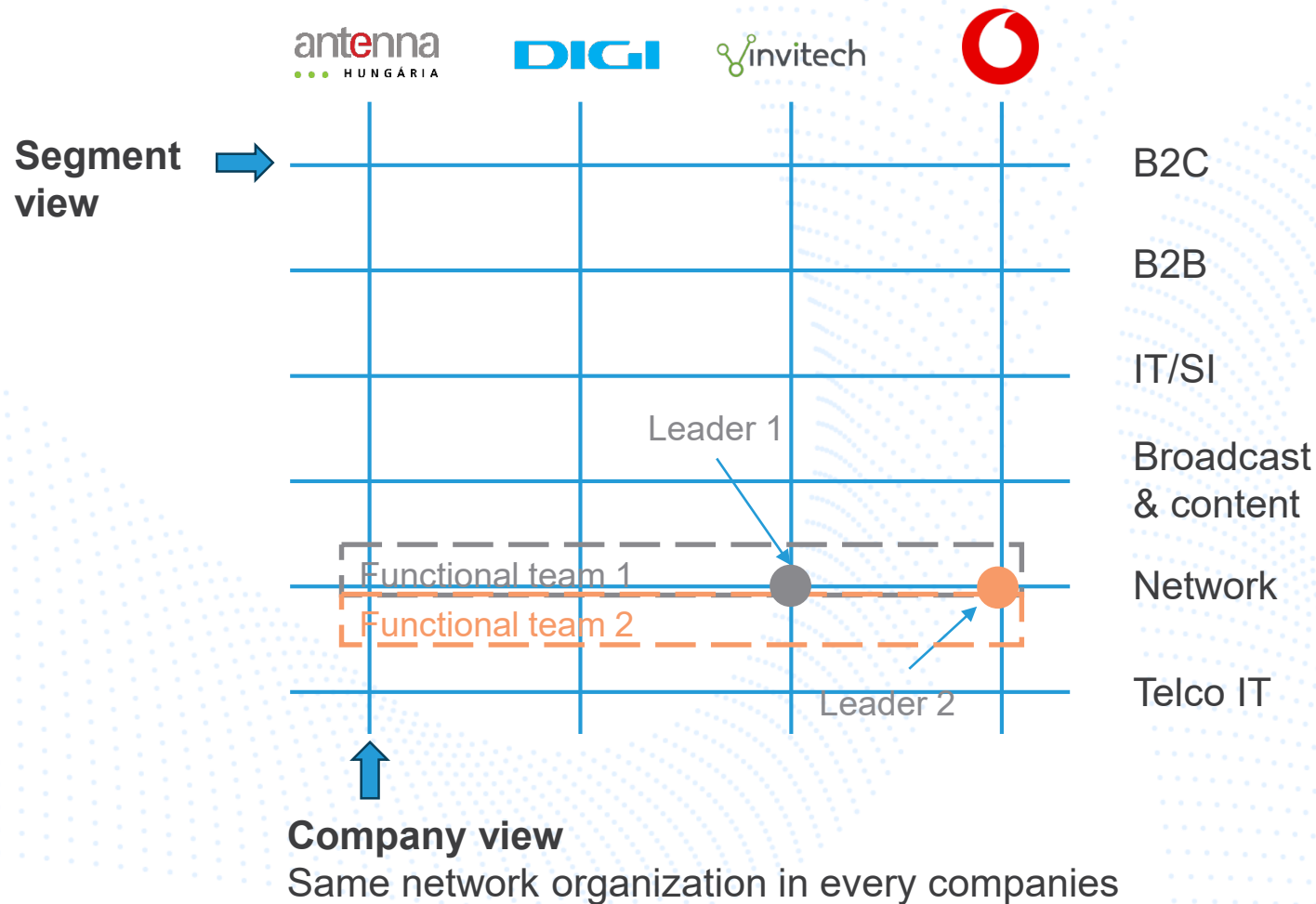
Szinergiák keresése párhuzamos infrastruktúráknál

NMHH, XVIII. Építtetői, Tervezői és Kivitelezői Fórum

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Dévényi István, Technológiai igazgató, Digi Kft.

Interim operating model



Characteristics of the matrix organization

- Multinational model, only here the companies are in one country because of the legal environment
- Employees do not need to be moved between companies
- Managers lead according to functions, not according to company structure

Network Segment Formation - professional workstreams

Steering Committée / 1. Governance Work stream leaders, advisors

5. Wholesale
Kis Albert

6.1 Technical
services

6.2 Fix
passive
Network
(backbone,
aggregation,
loacal access)

6.3 Fix active

6.4 RAN

6. NW 1

6.5
Broadcast,
Modulation,
Content
provisioning

6.6
Transport

6.7
Microwave

6.8 Data
Center

7.1 Core,
value added
services

7.2 TV

7.3 IP

7. NW 2

2. Development

3. Operations, NOC

4. Service provisioning and vendor management

Real
estate

HR

Controlling

Security

Procurement

8. IT TOOLS / OSS
Lead by IT

Our technologies: We are using 10 different technologies that can be grouped by competitiveness



2.SHORT TERM COMPETITIVE TECHNOLOGIES

- Against weaker competitor can be an alternative for short term (retention)
- In case of GPON competition mid term fiber/FTTB upgrade to be considered

1.LEGACY TECHNOLOGIES

- Not competitive even for short term
- Should be phased out within 1-5-years
- Available (subsidy) funds to be involved

Access technology		Available bandwidth DS/US (Mbps) Max.	Competitiveness			
			Weak or no competitor	Strong competitor (Telekom, GPON)		
			1-3 yrs	5yrs	10yrs	>10 yrs
Copper	ADSL	24/1,4				
	VDSL	100/22				
	ED 2.0	30/6				
HFC	ED 3.0	500/22				
	ED 3.1	2000/100				
	Deepfiber	2000/100				
	FTTB_HFC	2000/100				
	FTTBe	1000/100				
Fiber	RFoG	3000/100				
	GPON	2500/1250				
	XGSPON	10000/10000				

Migration cases: migration between overlapping technologies needs massive investments while savings from synergies notable on long term

Migration cases				
Technology overlap	Main activities to do	Challenges	Migration Cost* kHUF/HC	Synergies
GPON-xDSL	- capacity expansion on GPON - new customer connection - new ONT and STB-s - product "swap"	- works at customer's premise - changing of equipment - changing/degradation of service (IPTV)	55	- Upsell potential - Dismantling of copper - Site consolidation - Utility tax, Pole rental, energy saving potential
GPON-HFC	- capacity expansion on GPON - new customer connection - Inhouse cabling - new ONT and STB-s - product "swap"	- works at customer's premise - changing of equipment - changing/degradation of service	61,5	- Upsell potential - Dismantling of HFC - Site consolidation - Utility tax, Pole rental, energy saving potential
HFC-xDSL	- capacity expansion on HFC - new customer connection - new modem and STB-s - inhouse cabling - product "swap"	- works at customer's premise - changing equipment - changing/degradation of service (VDSL)	115,5	- Upsell potential - Dismantling of copper - Site consolidation - Utility tax, Pole rental, energy saving potential
FTTBe-HFC	- cross-connect between technologies at the distribution point (in MDU-s) - inflat cabling - changing of CPE - product swap	- new active equipment at customer's premise - changing service - inflat cabling	99	Moderate energy saving potential

* Dismantling cost of legacy network not included

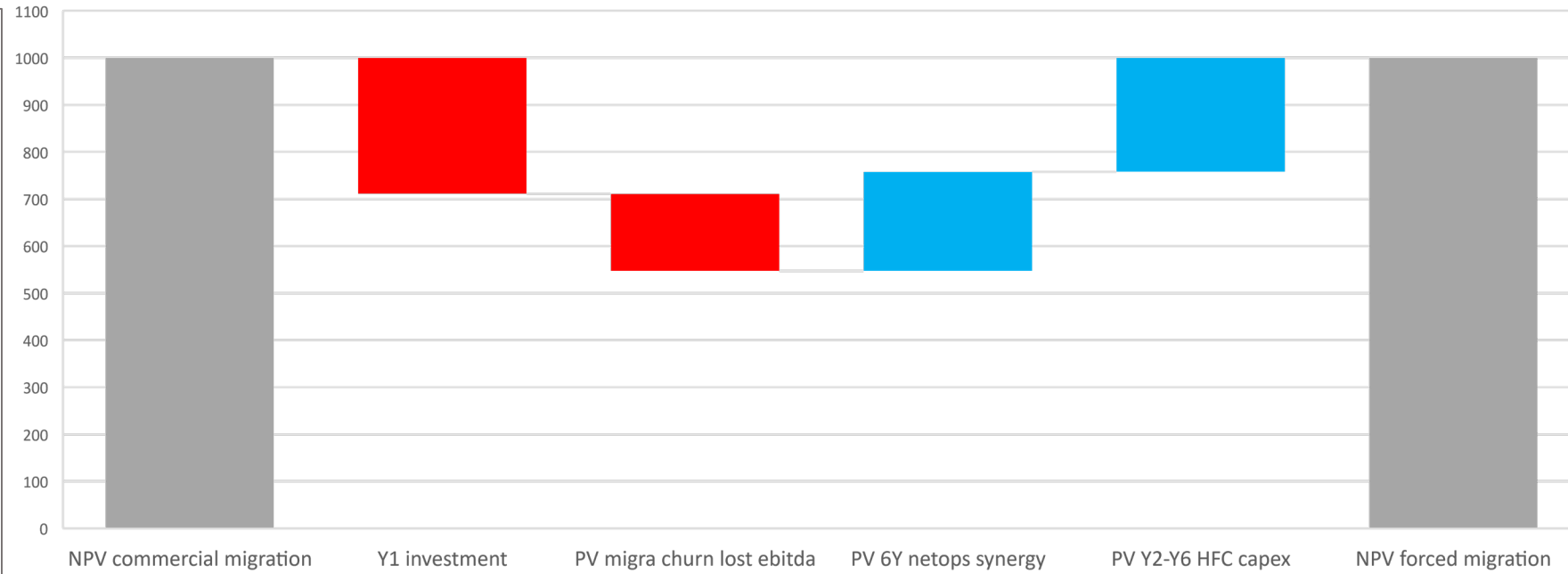
BC alternatives: Initial CPE investments and migration churn risk are also key drivers when deciding between commercial and forced migration

Two alternatives for a GPON-HFC area (w/ Telekom overlap):

- Commercial migration, 6Y HFC phase-out
- Force migration in Y1

Key assumptions

- 30-30% initial GPON-HFC penetrations
- 15% churn due to forced migration
- 75k HUF CPE&install swap CX
- 2pp better price increase for GPON
- 6y HFC operation with proportionally decreasing customer ops opex
- HFC maintenance CX, no upgrades, customer retention on GPON



Key takeaways

- CPE capex: model is sensitive to the CPE Capex, differences between Digi (no box) and Vodafone (1,7 box/customer) CPE unitaries – need to clarify which TV model to be assessed; disconnected modems/STBs can be re-used after refurbishment (costs&VTV re-use to be clarified)
- Network synergies of first 1-3 years usually covering the initial investment into migration only in case of low (<15%) penetration of the to-be migrated technology
- Forced migration churn: usually >15% forced migration churn makes commercial migration more and more attractive (w/ current assumptions)