Forthnet / Nova in 5G

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Forthnet is a market pioneer and the company that brought Internet and Pay TV in Greece.
Leading position in Greek Market

- 1.02m Broadband and Pay TV subscriptions
- 720k unique households
- 302k households with 3Play services
- 325m (€) total revenues
- 55m (€) adjusted EBITDA
- 126 shops all over Greece
- 40k SMEs and Corporate subs
- 5.8k km of fiber optic network

Serving **17%** of households in Greece

Company Key figures H2 2016

Number of HHs: 4.2M, Hellenic Statistical Authority
Corporate Sustainability

Main strategy of investing in Greek Sports and Culture

355M€ in the Greek Football and Greek sports between 2009-2015

54M€ in the local production and Greek Cinema between 2009-2015

136 co-productions of local movies and we continue...

Social solidarity initiatives

Initiatives to support recreational sport

- novasports
- beach volley tournament
- 3X3 tournament Φιλίππος Συρίγος
- novasports Running Team
100% DTH coverage in Greece and Cyprus.
Leasing of 4 HotBird transponders from Eutelsat.
Four digital Multiplexers with uplinks to HotBird Satellite.
Earth Station Services.
Optimized picture quality with latest MPEG, statistical multiplex technology.
IP and MPEG-4 infrastructure.

HD broadcast infrastructure.
HD production studios, editing, graphics and recording facilities.
HD multi-channel play-out, monitoring and continuing rooms.
HD live coverage of sports events.
Latest generation tapeless technology.
OTT facilities to prepare content for Mobiles.
VOD platform.

Present in all Mobile devices with Live & VOD.
Premium Content offering (sport and movies).
Forthnet CDN in all Major Cities.
Service features: Live TV / VoD / CatchUp TV / Favorite List / Bookmark / Timeshift TV.
OTT Platform: Integration with existing BSS, Complete NMS System, Recommendation Engine.
Fixed Infrastructure

- 5,850 km fiber optic MAN and WAN
- 476 collocations to incumbent’s local exchanges
- 94% of active customers served from private network
- 100% population coverage through SAT BB
- DWDM with 100G λ capacities
- Full IPv6 network
- IMS to provide Voice & VAS
- 160 Gbps international connectivity
- 70 Gbps national connectivity & 136 Gbps CDN in Athens & Thessaloniki
Innovative new products driving multi-platform offering

Upgraded STBs with connected functionalities leads to better customer experience, builds customer loyalty and gives opportunities for growth

New services

**novago**

- 132K registered users
- 32% penetration in active base
  - Live TV and On demand titles at any mobile device / anywhere / anytime
  - 23 linear channels, over 1,500 VoD titles

**nova On Demand**

- 30K Connected STBs
- 10% penetration in eligible base
  - Wide choice of top Movies, series, docs and kids programs for all family members on the big screen
  - Excellent quality through Nova VDSL
Wide range Retail product portfolio

Retail propositions

3play
- Broadband, Telephony and Pay TV

2play
- Broadband, Telephony

Internet
- ADSL 24
- VDSL 50

Telephony
- Telephony, SmartTalk

Pay TV
- Full / Sports / Cinema & Start pack

VAS
- Nova On Demand, Nova Go, Nova HD, Nova Multiview

Distribution channels

Company promotes its services through more than 750 points of presence nationwide

- 126 shops (350,000+ visitors per month)
- 2 retail chain stores, the large and well known retailers (kotsovolos, mediamarkt)
- 350 resellers throughout Greece includes more than 120 authorized partners / nova technicians
- External call centres
## Strong commitment in Business sector

### Highlights

- 20 years experience in Telco and Pay TV Business sector

- Specialized service portfolio for every sector (tourism, commerce, etc)

- 360 communication solutions for advertising market

- Service Level Agreement (SLA) to meet today’s demanding business needs

- Premium technical support line (13858)

- Certified for quality services provision (Cisco Cloud & Managed services master certification, ISO certification)

### Complete service portfolio

- Nova professional private view
- Data services
- Voice services
- Manage IT services
- Data center services
- Cloud services
- Wifi hotspot
- nova hotspot
- nova3play professional
- nova media
- nova professional public
Expectations from 5G era

Content Services

M&E will be a major Vertical Market of 5G ecosystem

“Unlimited Experience” + “For Everything” compose an ideal Transport for our Content

Issues to be solved:
Volume, Concurrency, QoS, Anywhere, Anytime, Any device

Introduction of more demanding services (4K, VR, AR,...)
Expectations from 5G era

New Business Models

5G & Verticals will revolutionize IoT services business models

New kinds of Services to be offered either by
• Existing Market players (n-play), or
• Emerged & “Vertical” SPs

New perspectives on what can be considered as Customer

Use cases drivers for 5G

Source: Ericsson Business Review, issue 1, 2016
Expectations from 5G era

**Openness for MVNOs**

MVNOs contribute significantly to the market competition.

E2E Network Slicing pushes toward efficient use of resources by both MVNOs and MNOs.

Slices from all layers should be presented to MVNO.
Challenges ahead

Users perception & experience

In the before 5G era, Voice and Internet perceived as the main services offered by mobile networks.

Smart devices & Apps explosion emerged OTT, but mostly without guaranteed service levels.

Quite heterogeneous services to be offered by 5G, through various business models.

User adoption level is critical for Success.
Challenges ahead

Networks Transformation

Backhaul challenges and Fiber role
• Capacity & Latency requirements best fulfilled by dense fiber networks
• Fiber must be in place during rollouts

SDN/NFV significant role in 5G
• Limited NFV deployments
• Strong orchestration required to avoid operational complexity
Challenges ahead

... and as always

5G Security

- Use Cases & Services Data (Privacy)
- Heterogeneous End Devices (Unmanaged)
- Sliced & Virtualized Networks (Data Integrity & Availability)
- Bigger Capacities (Volumetrics)

Confidence Level and Availability are crucial
Thank you.

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