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Spectrum, a real value

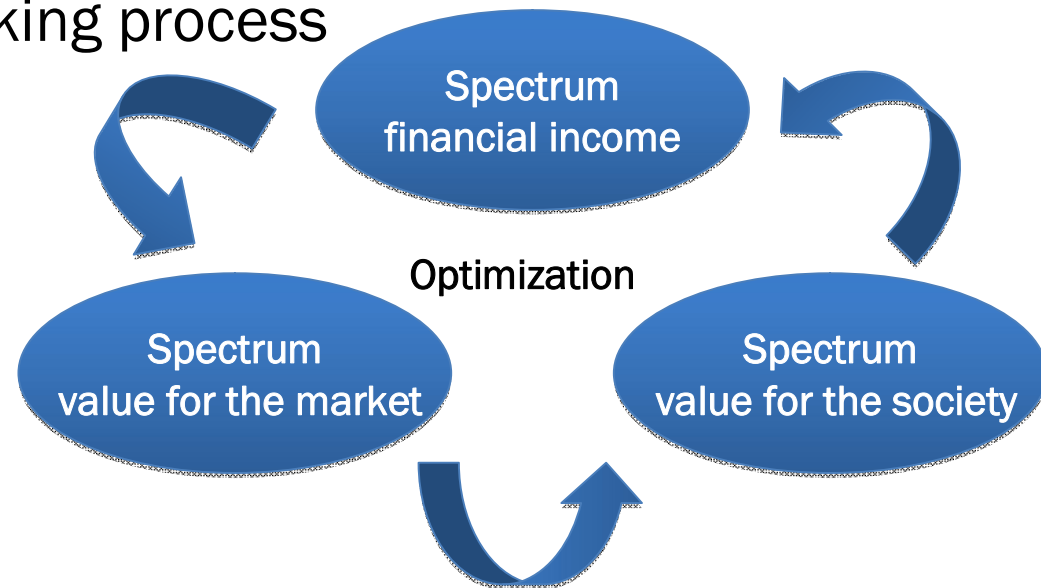
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12.05.2011.

ANCOM Conference, Bucharest

Why do we need to deal with spectrum?

- Government need to manage scarce resources
- Long term affect of spectrum management
- Need transparency for interested players
- Complex decision making process

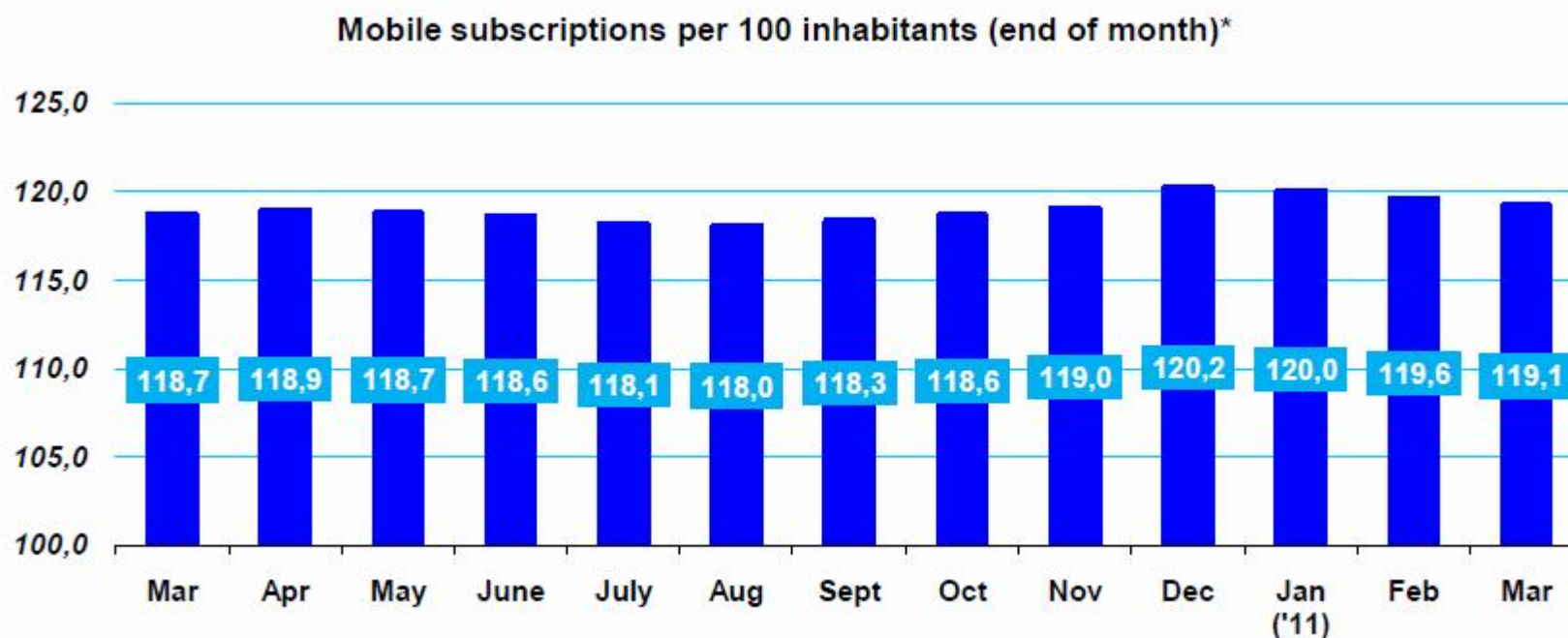


Broadband is key for economic and social development

- European Union – EU 2020 Digital Agenda (2010)
 - High speed and super high speed broadband access across the EU
- Hungary – Plan for Digital Renewal (2011)
 - Government has a plan to implement the objectives of the EU 2020 Digital Agenda
 - Cover the whole country with high speed internet access
 - Give opportunities to service providers to expand their services (frequency)

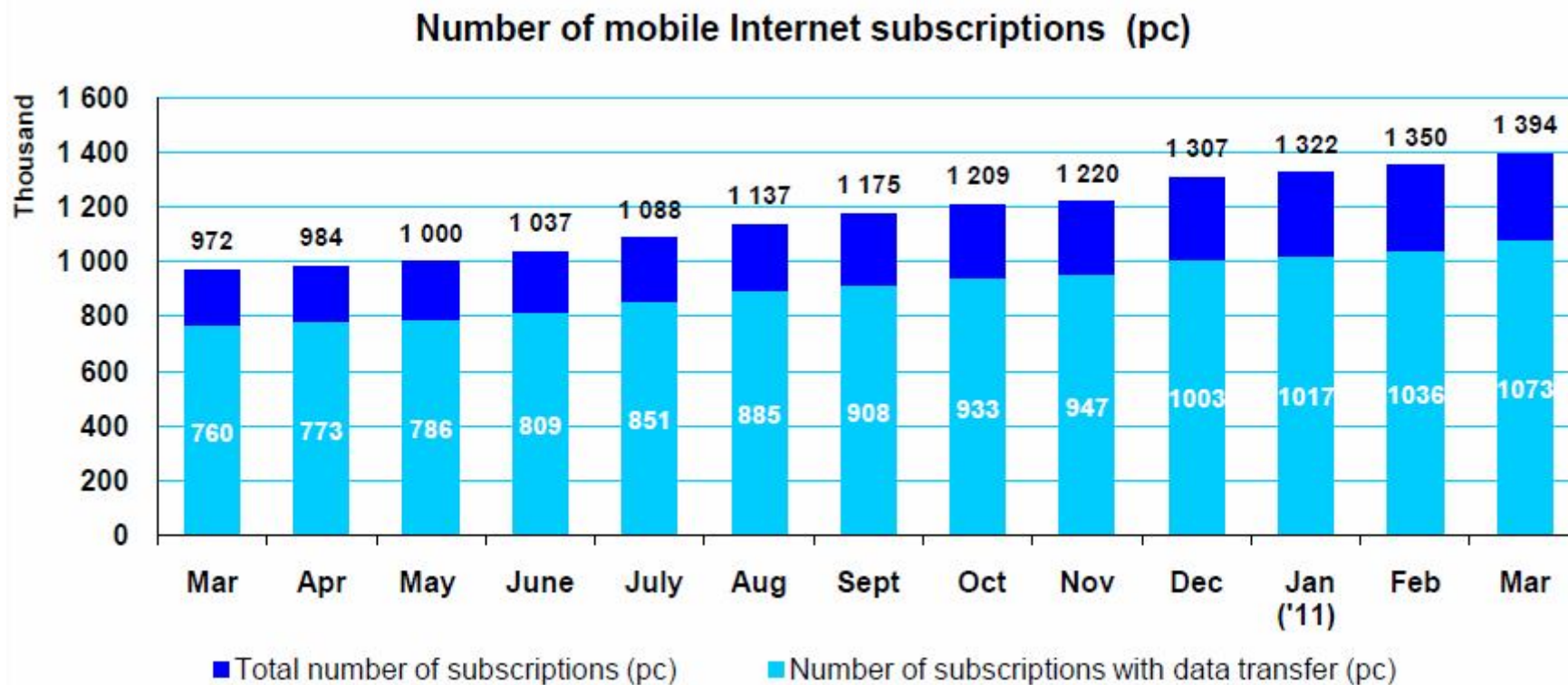
The Hungarian mobile market

- The number of mobile subscriptions is not increasing any more, the penetration is high (around 120%)
- The market share of the 3 mobile providers is not changing



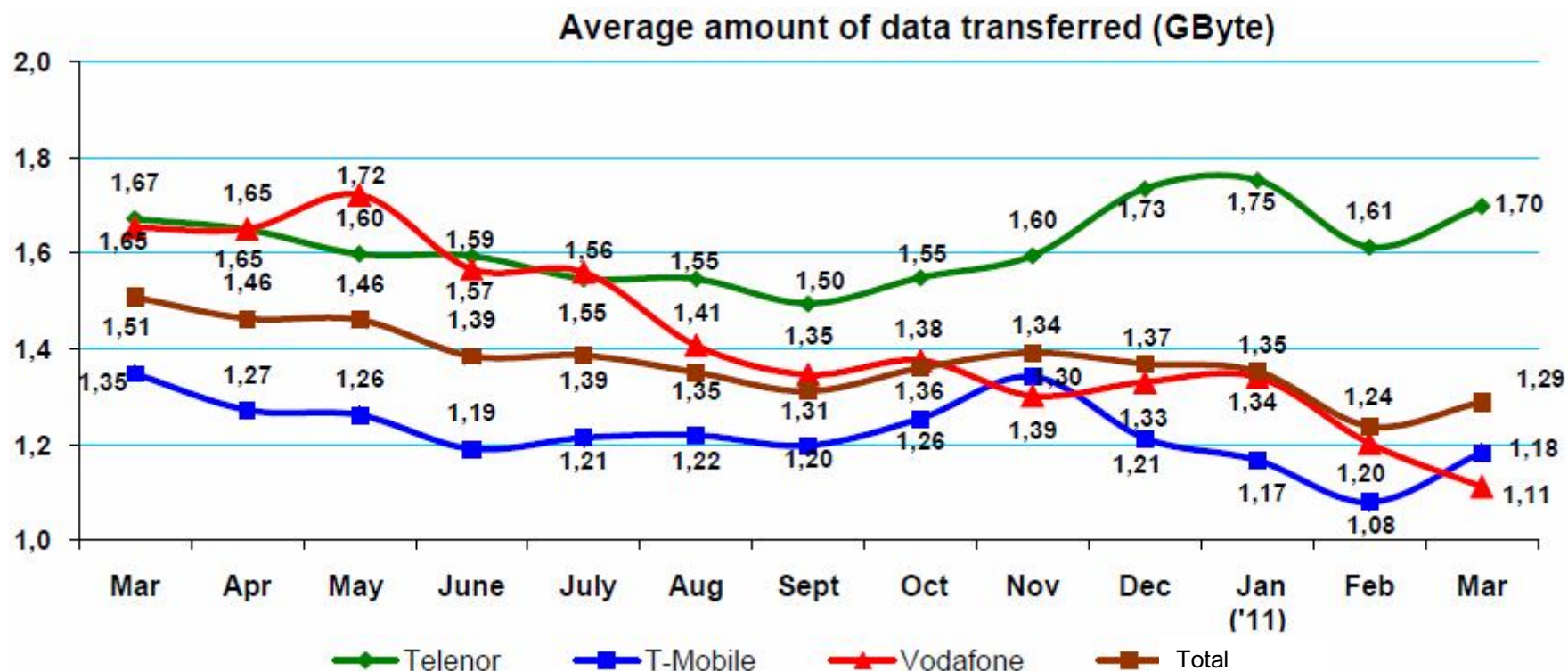
Mobile internet

- The number of mobile internet subscriptions is growing (much faster than fixed internet subscriptions)



Mobile internet data traffic

- There is no significant increase on data usage, it is still below 2 GB



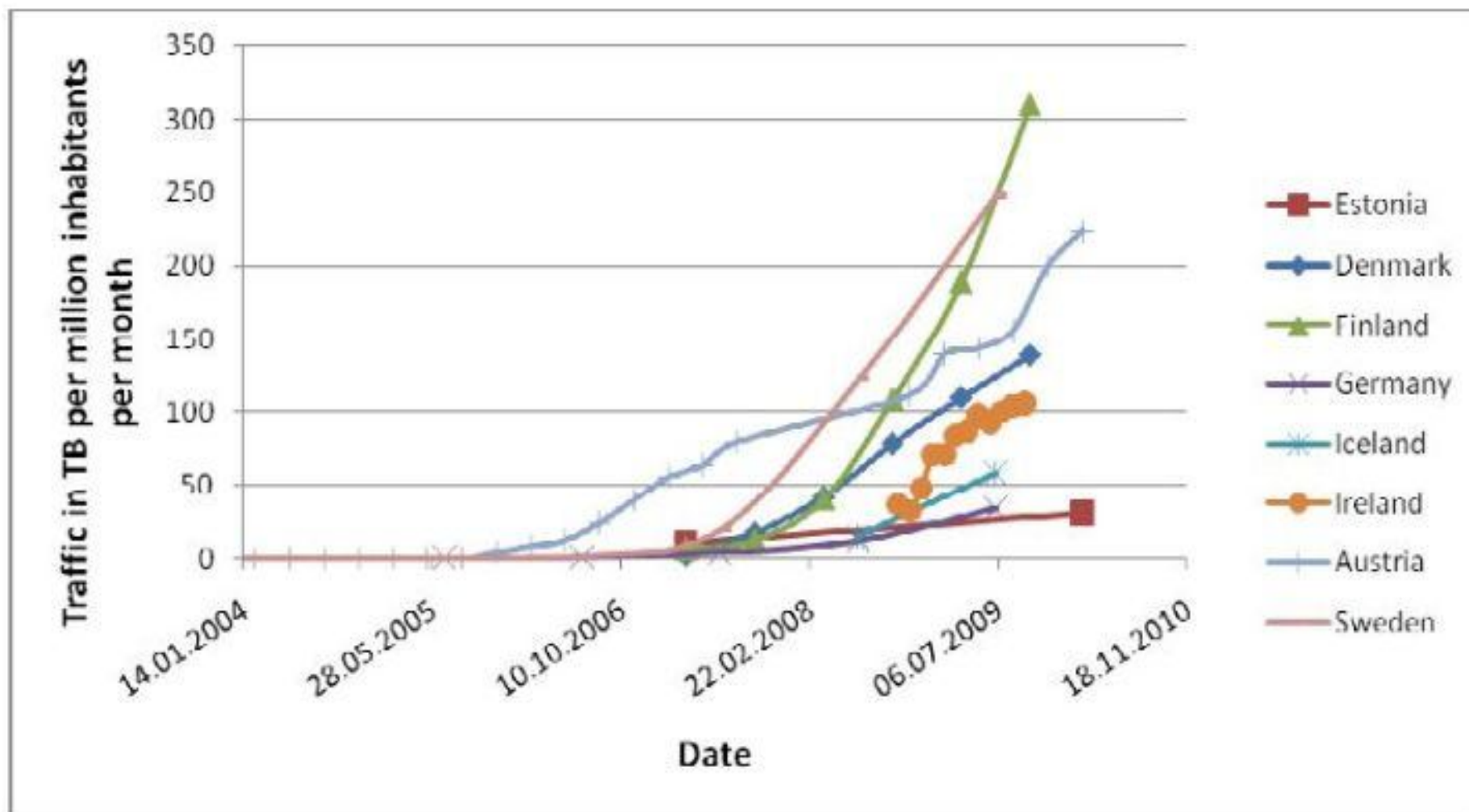
What are the challenges ahead of us?

- Need more capacity
 - Because the number of internet subscriptions is increasing
 - Speed is a key issue to further develop the market
- Need better coverage
 - Currently only half of the country is covered by 3G services
- Technology is evolving
 - New releases of UMTS (HSPA, HSPA+)
 - LTE – ready for launch. EU adopted the use of LTE in the 900 – 1800 MHz band. Hungary will follow with the regulation.

What's driving spectrum (capacity) needs?

- The data usage by mobile devices will exponentially grow in the next 5 years driven by
 - Mobile video applications (HD video, VoD)
 - Mobile P2P, M2M, gaming, mobile web, mobile healthcare, education, etc
 - Internet of Things – data communication (logistics, intelligent homes, buildings, telematics, etc)

Large increase in mobile data usage



Source: GSM World

What answers are possible?

- Allocate more frequencies for BWA
- Refarming, reshuffling
- Plan for future spectrum needs

The 900 MHz band status

- Hungary cleared non-civil services from the 900 MHz band by the end of 2010
- The E-GSM frequencies became available
- Currently this band has the best technological, economical characteristic for further BWA services
- Possibility of quick and seamless use of the band

Focus on E-GSM frequencies

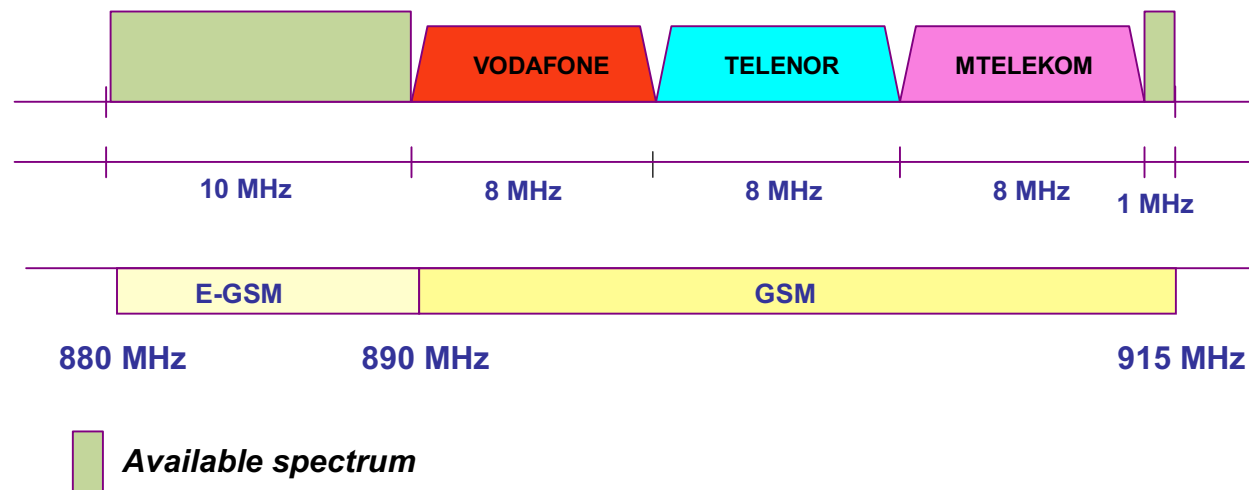
- Urgent need from the 3 incumbent mobile operators to obtain more spectrum to provide more bandwidth and increase their broadband coverage
- Government wants to increase broadband coverage in rural areas to offer more choice for people living out of high density population towns
- Mobile broadband increases competition on broadband market and fosters other providers to develop faster and cheaper propositions



Time for auction

The E-GSM situation in Hungary

- In the 900 MHz band (880-915/935-960 MHz) each of the 3 incumbents have 8 MHz (paired) slot
- In this band 10.8 MHz is available for use



Important issues - frequency auction

- An experienced, financially stable new comer could positively affect the market – is there anybody interested? Probably the last chance to enter into Hungarian mobile market.
- The spectrum could be used by existing operators to increase the quality of broadband services and cover unserved areas
- The value of the band, hard to calculate price
- Based on a new decision LTE is allowed
- Reshuffling after the auction

Digital Dividend

- The government postponed the date for analogue terrestrial switch-off (Analogue Switch-Off) from 2011 to 2012 (2014 the latest)
- After the ASO a wide range of spectrum will be available for BWA, most probably in 2013
- The use of DD requires some cross-border consultations with neighboring countries
- DD offers another unique opportunity for BWA services

Thank you for your attention!

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More info at www.nmhh.hu