The Handsets – What Do Users Want?

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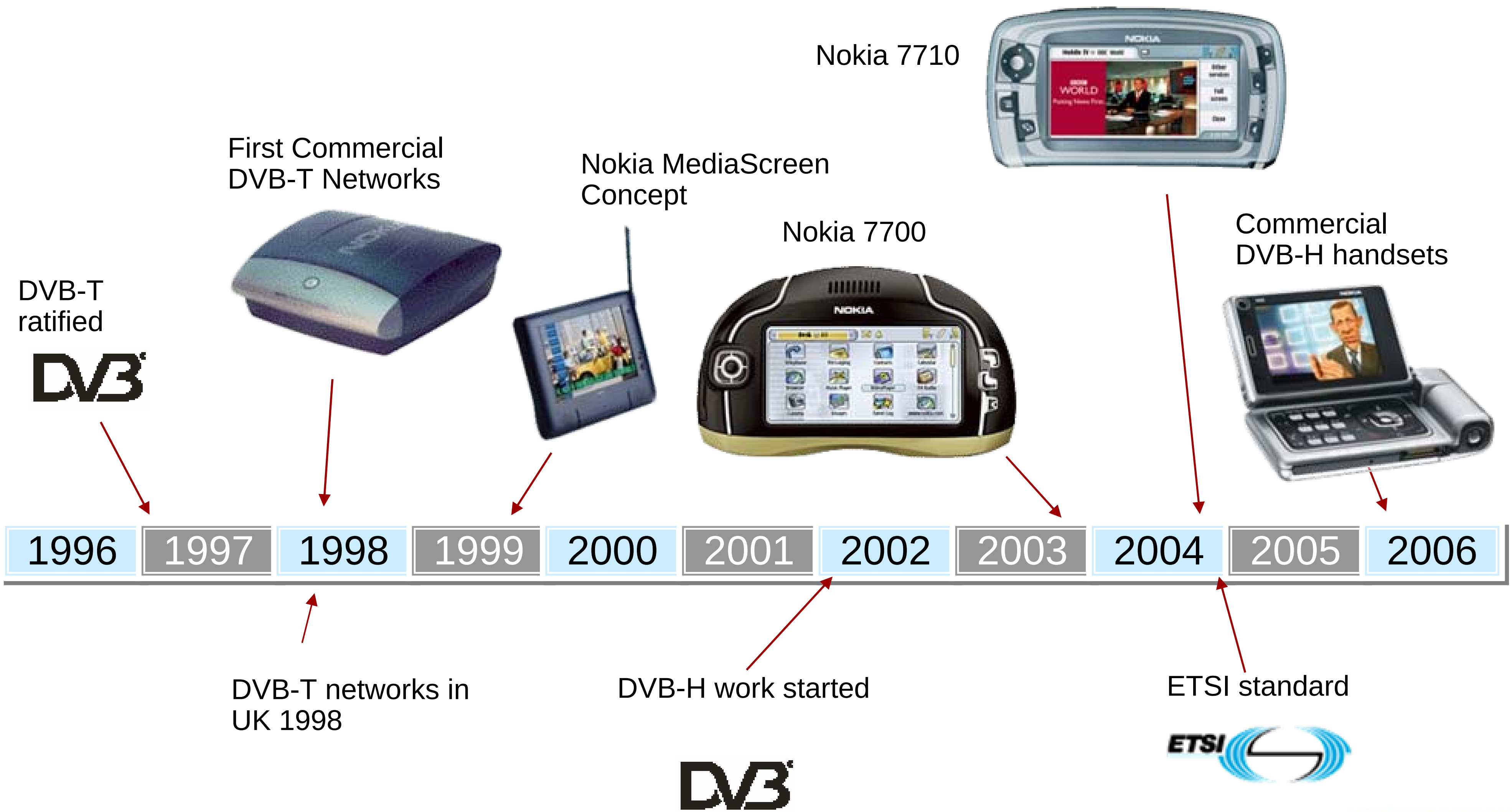
Nokia Multimedia

Connecting People

Long History, Many Lessons Learned



Consumer Expectations

Good AV quality

Service availability

Right selection of channels

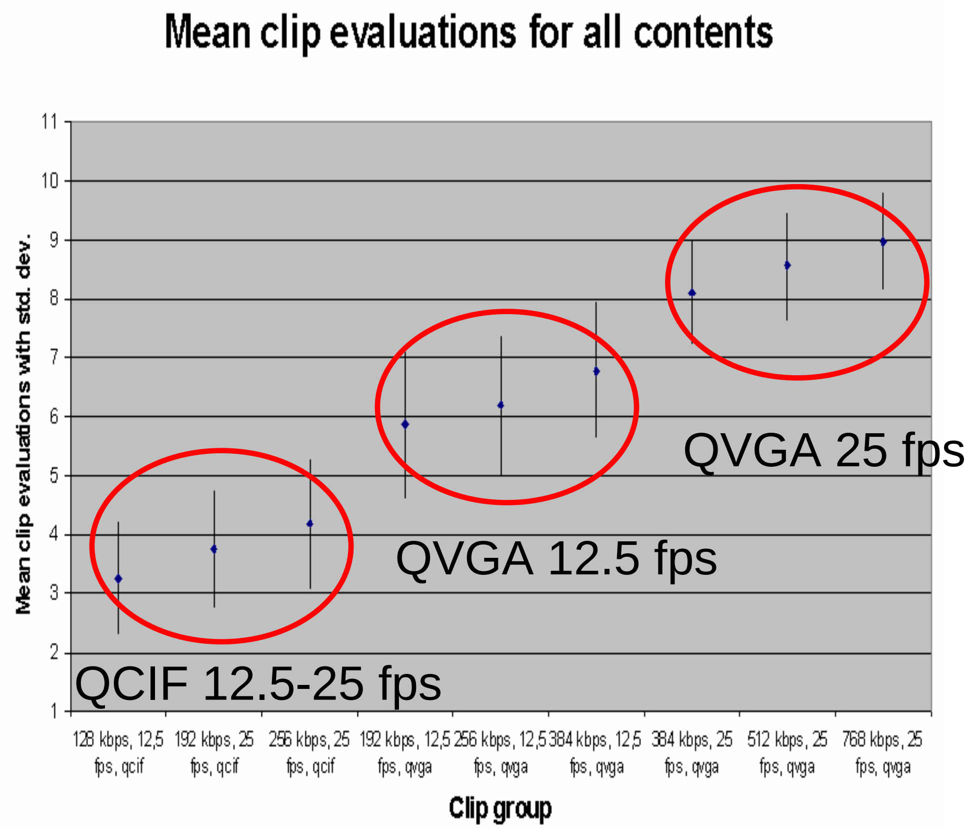
Simplicity of use

Value for money

Multimedia Device

Good AV Quality

- Screen cannot be big enough! With the exception of when pocketing the device…
- Consumers perceive clear different levels in picture quality
- However, increased perceived quality with higher bit rates must also convert to higher subscription incomes (number of channels carrying opex and capex cost of network investment)
- QVGA @ 12.5 - 15 fps seems to be sweetspot for cost of delivery / perceived quality

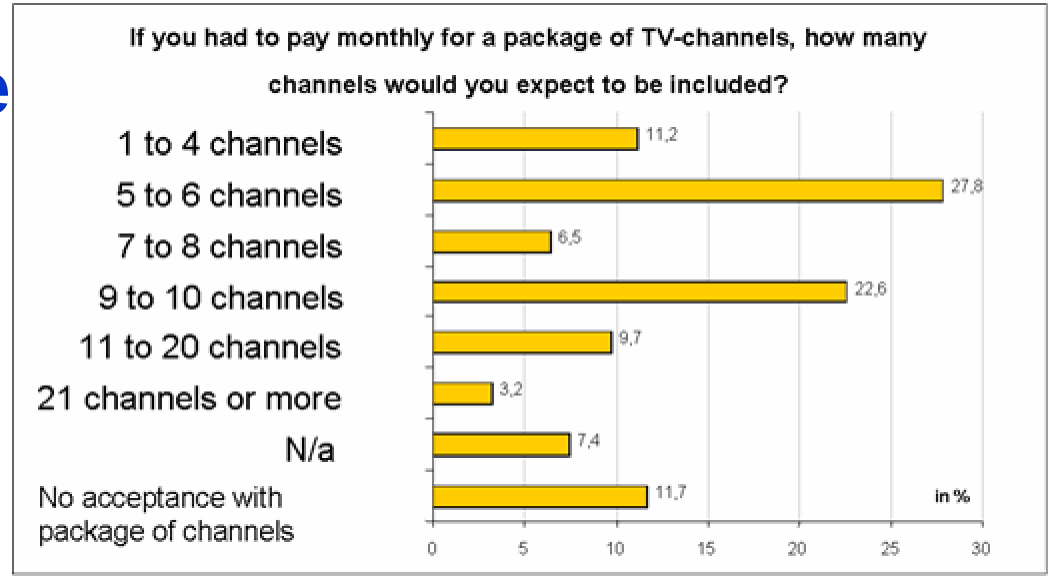


			Number of Channels in One Multiplex	
	Video kbit/s	Audio kbit/s	16 QAM	QPSK
Cat A (H.264 AVC QCIF@15 fps)	128	48	**52**	**26**
Cat B (H.264 AVC QVGA@15 fps)	384	48	**21**	**10**
Cat C (H.264 AVC QVGA@30 fps)	768	48	**11**	**5**

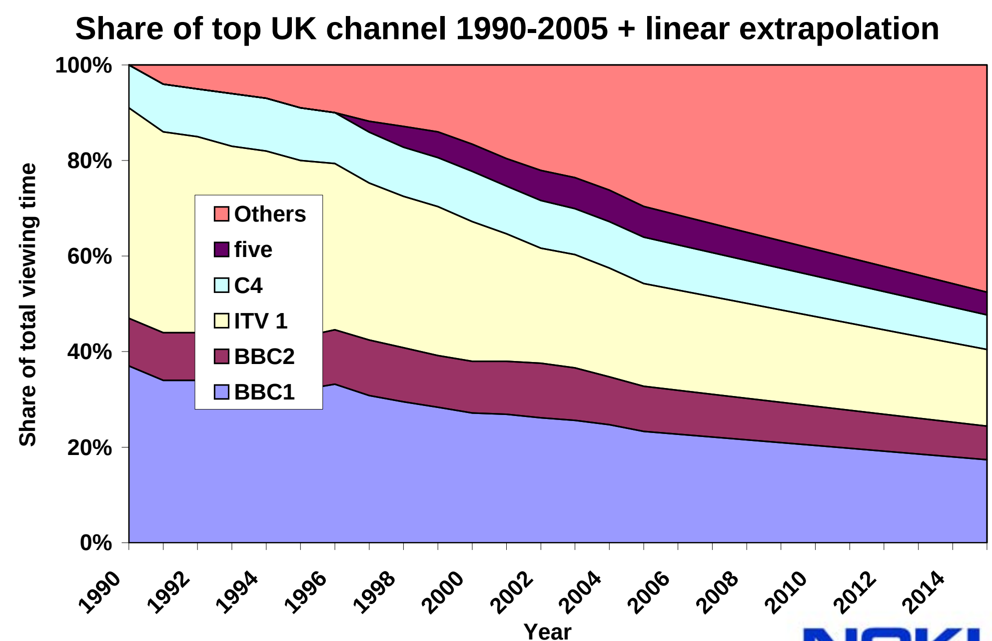
8 MHz BW, 11 Mbit/s @ 16 QAM, 5,5 Mbit/s QPSK

Right Selection of Channe

- In the early days expectations were divided between less than 10 and more than 10 channels (Goldmedia study, Berlin, 2004)
- In Terrestrial TV user preferences for TV content are fragmenting
    - UK free-air broadcast TV channels have lost 13% viewing 2000-2005. (83%->70%). (BARB 2006, UK)
- Mobile TV is not changing consumer content preferences.
- In recent studies the number of channels is a critical success factor and 16 channels is seen only as "adequate" (O2 & Arqiva, Cambridge, 2006)



Potential Users with willingness to pay; n=403; OPEN ANSWER



Value for Money

- Consumers understand pay TV model, however, role of Free to Air must be understood
- Flat fee subscription model is an absolute must. Pay per view is a complementing model.
- Transparency of costs is a clear benefit in comparison to mobile TV streaming.
- However, content is still the king: consumers willingness to pay is heavily dependent upon the content they get.
- Cost of device is important decision making factor. Mobile Phone markets form consumer baseline for device value and range perception.
  - Horizontal terminal markets to enable both cost and range are required

Attitudes toward Mobile TV service costs

	Finland	UK	Spain	France
Willingness to pay for mobile TV	41%	76%	55%	68%
Acceptable monthly fee for mobile TV	€10	-	€5	€7

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Multimedia Device – Lessons Learned from 7710

- Majority liked to have Mobile TV as a part of their mobile phone - option for separate Mobile TV device was not very interesting
- The key challenge put forward was combine adequate screen size and Mobile TV features to a compact phone so that good mobile phone usability is not compromised
- Respondents described their ideal Mobile TV in the following way:

IDEAL MOBILE TV

Usability of phone must be the first priority – looks and feels like a mobile phone

Easy to use and intuitive user interface

Keypad included

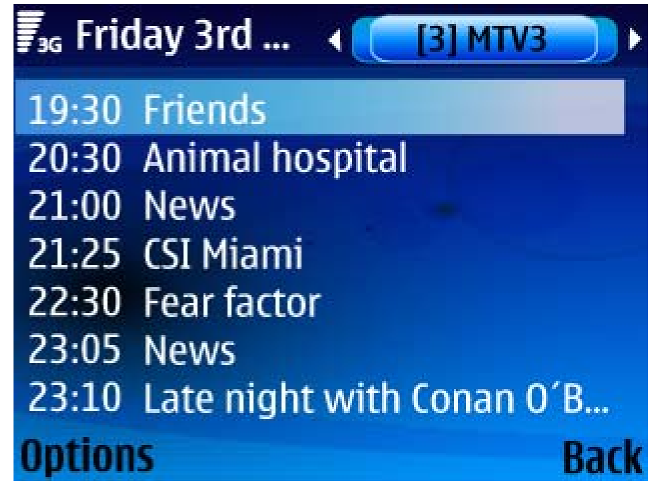
Multimedia device – e.g. includes also radio, MP3-player, web-browser

Small and light but with adequate size TV-screen

Convenient to watch TV – no separate viewing stand needed

Simplicity of Use

- EPG is the key to content discovery, and it must be personalisable,
    - Specifying favourite channels,
    - Change channel order and remove channels
    - Search
- Spontaneous usage must be enabled – no time for EPG updating
- External antenna is a big source of dissatisfaction
- Full screen mode is an absolute must – overlays or interactivity must be user configurable
- Specific TV keys requested

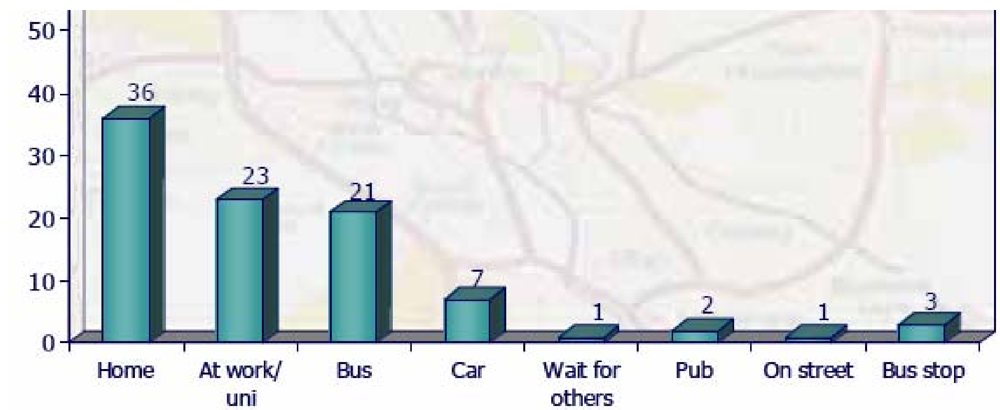


Service Availability

- Consumers expect the service to be available in the same places where cellular services are available
  - Indoor coverage is a must

- Roaming concepts are very interesting
  - Within the country roaming
  - International service roaming
  - Home services

Where do you use the service most often(%)?

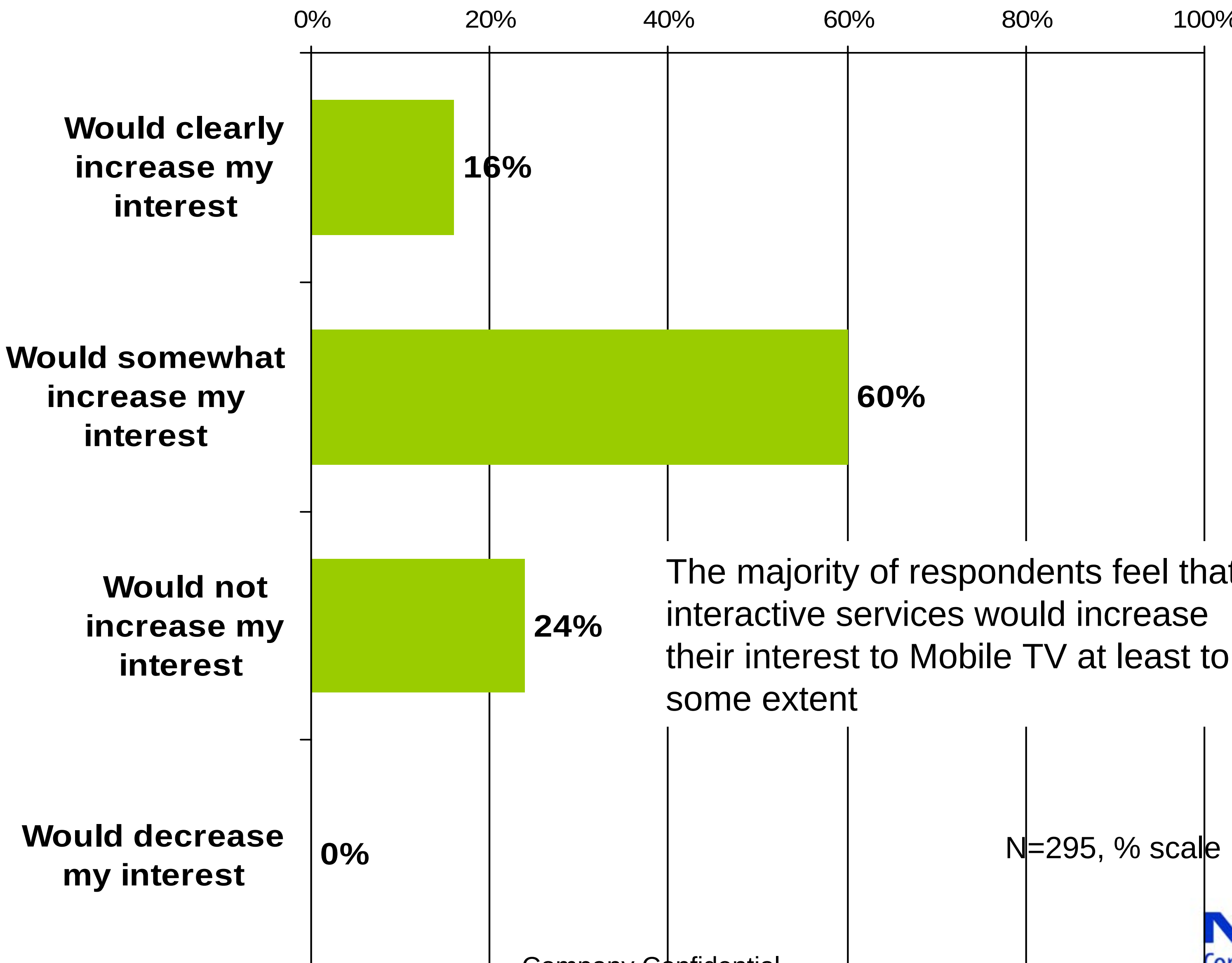


Source: O2, 2006
EU Commission report: Workshop on Mobile Broadcasting

	Domestic roaming	International roaming
My own services follow me	No rights issues expected, Cost of roaming delivery (e.g. 3G)	Rights issues open, cost of roaming delivery (3G)
Visitor access to local services	Service access roaming agreements TBD, unless within the same domestic service provider	Varying middleware solutions in different countries. Service access roaming agreements TBD

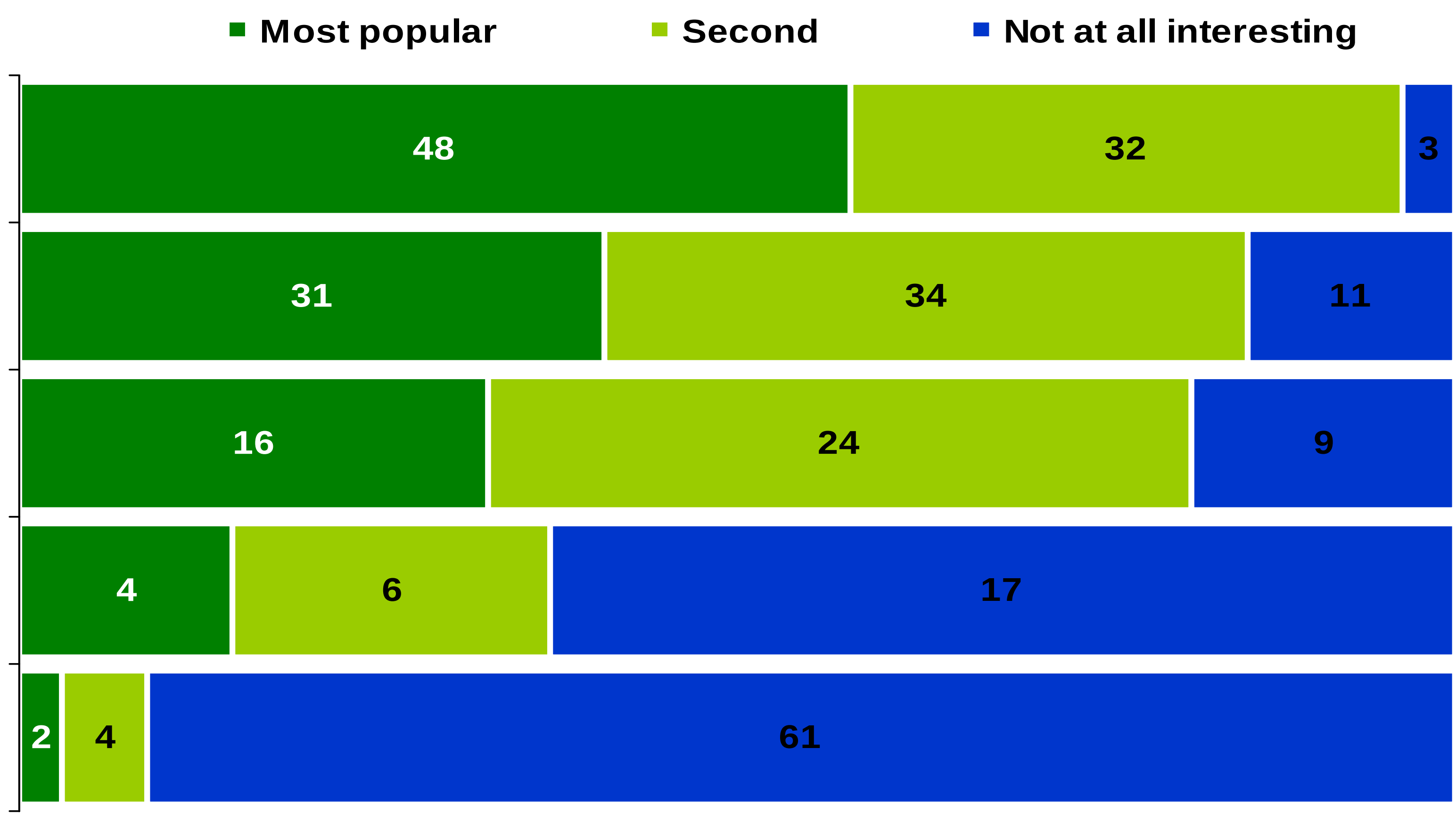
How would interactive service affect your interest to Mobile TV

Interactive service (information, voting donation, shopping) concepts were introduced to Finnpilot participants and they were asked if similar services were available for mobile-tv how would it affect your interest in mobile TV?



Service Availability - Expected Popularity for Interactivity

Assuming that mobile TV would be widely used among consumers. Which of the described services would you assume to be most popular? What would become second? Is there any such service that would assume not to be interesting at all?



Information service and shop service are expected to be the most popular. Voting service scores third. Donation service is expected to be clearly less popular.

N=295, % scale

Interactive Services – Consumer Criticism

- Based on focus groups it seems that the concept of interactive service is familiar as a word, but not generally understood.
- Interactive services are often associated with new kind of services (e.g sms-voting and –chatting), which are criticized to be pure entertainment and not necessarily value for the money.
- Continuous visual presence of interactivity received negative feedback. Full screen TV view was preferred to be optimal use of limited screen space.
- The main target group for interactive services is often considered to be young people, who do not necessarily pay their phone bills by themselves,
- It is also questioned if these kinds of services can be used with company phones.

What consumers want - Summary

- Good AV Quality:
  - Small size – big screen! 2.4” – 2.8” seems to be optimum size
  - QVGA 15 – 25 fps is the optimum from picture quality and bandwidth balance
- Right selection of channels:
  - In terrestrial TV user preferences for TV content are fragmenting
  - Number of channels will be critical success factor for consumer satisfaction
- Value for Money:
  - Flat fee subscription model is an absolute must due to it’s transparent pricing – role of Free to air is to be defined.
  - A range of affordable terminals – horizontal markets are the only way of satisfying this need.
- Multimedia device:
  - Preference to convergent devices – phone and TV and rest of multimedia all in one
  - Long battery life – 2.5 h – 4 h TV viewing time is satisfying most of the needs.
- Simplicity of Use:
  - Full screen mode is a must – interactivity must be user configurable.
  - EPG is the key for content discovery, it must be always up to date, and consumers must be able to personalize it
  - Mobile TV is appealing to older age groups as well – other multimedia services seem to resonate well with younger audiences only.
- Service availability:
  - Indoor coverage is a must
  - Plain old TV is the proposition most users want - they need to first get used to the idea of using TV on mobile before interactivity and other value add services go mainstream.
  - Roaming is and will still remain as an untapped opportunity

Are We Aligned With Consumer Wants?

- Fragmenting middleware solutions
  - Concerns: Market fragmentation, reduced device range, increased cost and delayed availability of terminals, no roaming
- Always on Interactivity
  - Concerns: No full screen viewing, cost of programming, fragmenting e2e solutions
- Service provider dedicated look and feel of the (same) feed
  - Concerns: Not seen as real value adding differentiation, fragmenting e2e solutions, cost of programming
- Content Right Deals
  - Concerns: Roaming not enabled
- ESG update (over cellular) in a pull mode
  - Concerns: Spontaneous usage of Mobile TV
- Indoor coverage not matching cellular coverage:
  - Concerns: No coverage in places where Mobile TV would be used

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End of Presentation

Thank you!

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