

# QUESTIONNAIRE ON WIRELESS ACCESS PROTOCOL (WAP)

## COSTS

### 1. PURPOSE AND OBJECTIVE

We (Maija Gao, Ph.D. student Helsinki School of Economics, docent Ari Hyytinen, Helsinki School of Economics, and Director Otto Toivanen, HECER, University of Helsinki) have an academic research project on demand for and pricing of mobile internet. This survey, addressed to acknowledged experts in telecommunications, is a vital part of our research and will take less than 15 minutes to complete. We hope for your cooperation.

We have been fortunate enough to get data from a Finnish mobile phone operator on their customers' usage of WAP based services. We have so far written one academic paper (see the attachment) on the topic. As good as the data is, there is one flaw in it: it contains no information on the costs of the operator. We are therefore reaching out to experts like yourself in the hope of being able to formulate an informed opinion as to the costs of a) establishing one more WAP connection and b) lengthening the duration of one WAP connection by one more minute. WAP pricing of the operator whose data we have was at that time (Autumn 2001) the following: The operator charged a fee for establishing a WAP connection and a per-minute-charge that varied according to the length of the connection.

Our project is strictly academic – we are not paid by anybody to carry out this survey, nor commissioned or ordered by anybody to carry it out. This survey is also strictly confidential. We will not give your name, affiliation or answers to any outsiders. We will utilize and publish some aggregate results of the survey, such as the mean of the answers of all respondents to the individual questions.

We are happy to give more information on ourselves and the project if you so wish. We can be reached at:

[Maija.gao@nokia.com](mailto:Maija.gao@nokia.com)

[Ari.hyytinen@bof.fi](mailto:Ari.hyytinen@bof.fi)

[Otto.toivanen@helsinki.fi](mailto:Otto.toivanen@helsinki.fi)

## HOW TO ANSWER

The process is the following:

- First, we give you some base information. If you have any questions, we are happy to answer and explain. It is important for that you ask if anything is unclear.
- Second, we read you our two base questions #1 and #2 one by one and record your answers. These are about costs
- Third, we read you our questions #3-#7 one by one and record your answers. These are supplementary questions
- Fourth, we guide you through our final set of questions – 14 in total - by asking them one by one and recording your answers. These questions are about trying to “bracket” the true costs.

## 2. QUESTIONS

**Information:** We are NOT interested in the annual costs of providing WAP services, or the costs of either establishing or maintaining a network with WAP capability. Think of an operator with a large enough capacity of the network so that congestion is not an issue. We are centrally interested in what economists call **marginal costs**. These are the extra or additionally incurred costs of producing one more unit of a good. To give an example, the marginal cost of electricity production in a coal-burning unit to produce one more unit of electricity (e.g. 1 MWh) is – at least to a close approximation – the cost of the extra coal needed to produce the extra unit of electricity. In WAP services, there are two important margins:

- First, the extra cost of opening a connecting (and/or closing it).
- Second, the extra cost of lengthening the duration of a connection that has been opened by e.g. one more minute.

***IMPORTANT NOTE: WE ASK YOU TO PROVIDE YOUR ANSWERS IN CENTS OF A EURO. YOU CAN HOWEVER, USE FRACTIONS OF A CENT. TO GIVE TWO EXAMPLES, IF YOU THINK THE TRUE COST IS 1 EURO 15 CENTS AND HALF A CENT, YOU WOULD ANSWER 115.5. IF YOU THINK THE TRUE COST IS ONE TENTH OF A CENT, YOU ANSWER 0.1.***

Next come our two main questions:

***Question 1:*** Imagine a Finnish mobile phone operator providing WAP services in autumn 2001. What is your best guess as to what was the extra cost incurred by the operator when a customer opened a new WAP connection?

\_\_\_\_\_cents of a euro.

***Question 2:** Imagine a Finnish mobile phone operator providing WAP services in autumn 2001. What is your best guess as to what was the extra cost incurred by the operator from the customer lengthening an already established WAP connection by one more minute?*

\_\_\_\_\_cents of a euro.

These were our two main questions. We now proceed to our additional questions #3-#7.

***Question 3:** Imagine a Finnish mobile phone operator providing GSM services in autumn 2001. What is your best guess as to what was the extra cost incurred by the operator when a customer opened a new GSM connection?*

\_\_\_\_\_cents of a euro.

***Question 4:** Imagine a Finnish mobile phone operator providing GSM services in autumn 2001. What is your best guess as to what was the extra cost incurred by the operator from the customer lengthening an already established GSM connection by one more minute?*

\_\_\_\_\_cents of a euro.

***Question 5:** what do you think of the following statement: WAP connections were technically identical to establishing a GSM-voice call. In other words, the marginal*

*(extra) costs incurred by the operator from a customers establishing a WAP connection, or lengthening a WAP connection, were no different from those incurred by a customers opening (lengthening) a GSM voice call.*

*Please give your answer on the following 4-grade scale:*

*Completely false = 1*

*Somewhat false = 2*

*Somewhat correct = 3*

*Completely correct = 4*

**Question 6:** *The price elasticity of demand describes how responsive the demand for a good is to changes in its (own) price. It is typically measured by the percentage change in quantity demanded in response to a 1 percent change in price. In your view, how many percent would the demand for WAP services have declined in response to a 1 percent increase in its (then) price in 2001? \_\_\_\_\_*

**Question 7:** *In Autumn 2001, the operator charged a fee of 12 cents of a euro for establishing a WAP connection and a per-minute-charge of 9 cents:*

*a) Now, with the benefit of hindsight, do you agree with the statement that this price was high enough to significantly suppress the demand for WAP services in 2001.*

*(1) = strongly disagree, (2), disagree, (3) agree, (4) strongly agree.*

*b) Had you been the CEO of the operator in Autumn 2001, what should the prices have been.:*

*a) a fee of \_\_\_\_\_ cents of a euro for establishing a WAP connection and*

*b) a per-minute-charge of \_\_\_\_\_ cents of a euro.*