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Datasheet for the decision
of 3 May 2023

Case Number:	T 2023/19 - 3.4.03
Application Number:	09015497.2
Publication Number:	2204766
IPC:	G06Q30/00
Language of the proceedings:	EN

Title of invention:
Methods and apparatus for associating media devices with a
demographic composition of a geographic area

Applicant:
The Nielsen Company (US), LLC

Relevant legal provisions:
EPC Art. 123(2)
RPBA 2020 Art. 13(1), 13(2)

Keyword:
Amendments - added subject-matter - main request and first and
second auxiliary requests (yes)
Amendment after summons - taken into account (no) - no
exceptional circumstances and prima facie giving rise to new
issues

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Case Number: T 2023/19 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 3 May 2023

Appellant:
(Applicant)

The Nielsen Company (US), LLC
150 North Martingale Road
Schaumburg, IL 60173 (US)

Representative:

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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 20 February
2019 refusing European patent application No.
09015497.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	T. Bokor
Members:	M. Papastefanou
	M. Ley

Summary of Facts and Submissions

I.   The appeal is against the decision of the examining
        division refusing the European patent application
        No. 09 015 497 on the grounds that both the main
        request and the auxiliary request then on file
        contained subject-matter extending beyond the content
        of the application as originally filed (Article 123(2)
        EPC) and lacking an inventive step (Articles 52(1) and
        56 EPC).

II.   In preparation for oral proceedings, the board issued a
        communication under Article 15(1) RPBA and raised added
        subject-matter and lack of inventive step objections
        against the pending requests of the appellant.

III.   At the end of the oral proceedings before the board,
        the appellant requested that the decision under appeal
        be set aside and that a patent be granted according to
        the main request or one of first to fourth auxiliary
        requests. The main request, and the first and second
        auxiliary requests were filed with the statement of the
        grounds of appeal, while the third and fourth auxiliary
        requests were filed with the appellant's letter dated
        3 April 2023.

IV.   Claim 1 of the **main request** is worded as follows:

        A method of associating media devices with a
        demographic composition of a geographic area, the
        method comprising:
        receiving a plurality of Internet Protocol addresses
        assigned to a media device associated with a panel
        member;
        determining, by executing an instruction with a

processor, a most used Internet Protocol address from the plurality of Internet Protocol addresses assigned to the media device based on monitoring bandwidth consumption associated with the plurality of Internet Protocol addresses, the most used Internet Protocol address including a first prefix and a second prefix, the second prefix including the first prefix; accessing, by executing an instruction with the processor, geographic information and determining a first geographic location corresponding to the most used Internet Protocol address by:

> *matching the first prefix of the most used Internet Protocol address to a first range of Internet Protocol address prefixes;*
> *identifying a first geographic region based on the first range of Internet Protocol address prefixes;*
> *matching the second prefix of the most used Internet Protocol address to a second range of Internet Protocol address prefixes; and*
> *identifying a second geographic region based on the second range of Internet Protocol address prefixes, the second geographic region within the first geographic region, the first geographic location within the second geographic region;*

in response to determining that the first geographic location corresponds to a location of an internet service provider, associating, by executing an instruction with the processor, a geographic area with the media device, a size of the geographic area corresponding to an average distance between the first geographic location and respective locations of a plurality of media devices, the geographic area within the second geographic region;
accessing, by executing an instruction with the processor, demographic information and determining a

*demographic profile associated with the geographic
area; and
associating the demographic profile with the media
device.*

V.   Claim 1 of the **first auxiliary request** is worded as
follows (differences with claim 1 of the main request
underlined and struck through):

*A method of associating media devices with a
demographic composition of a geographic area, the
method comprising:
receiving a plurality of Internet Protocol addresses
assigned to a̶ the media device̲s̲ associated with a panel
member;
for each of the plurality of Internet Protocol
addresses, storing Internet Protocol address
information including media device IDs, an Internet
Protocol address, a start time, a stop time and a
bandwidth utilization during the time between the start
time and the stop time;
processing, by executing an instruction with a
processor, for a media device all of the stored
Internet Protocol address information including the
Internet Protocol addresses corresponding to the media
device ID,
if the stored Internet Protocol address information
includes a plurality of Internet Protocol addresses
assigned to the media device, determining, by executing
an instruction with a processor, a most used Internet
Protocol address from the plurality of Internet
Protocol addresses assigned to the media device b̶a̶s̶e̶d̶
o̶n̶ ̶m̶o̶n̶i̶t̶o̶r̶i̶n̶g̶ ̶b̶a̶n̶d̶w̶i̶d̶t̶h̶ ̶c̶o̶n̶s̶u̶m̶p̶t̶i̶o̶n̶ ̶a̶s̶s̶o̶c̶i̶a̶t̶e̶d̶ ̶w̶i̶t̶h̶ by
calculating at least one of 1) which of the plurality
of Internet Protocol addresses was assigned to the
media device for the longest time period, 2) which of*

the plurality of Internet Protocol addresses was used *to access the Internet for the longest time, or 3) for* *which of the plurality of Internet Protocol addresses* *the media device utilized the most bandwidth* the most used Internet Protocol address including a first prefix and a second prefix~~, the second prefix including the~~ ~~first prefix~~;
accessing, ...[the remaining of the claim is the same as claim 1 of the main request].

VI.   Claim 1 of the **second auxiliary request** is worded as follows (differences with claim 1 of the first auxiliary request underlined and struck through):

A method of associating media devices with a demographic composition of a geographic area, the method comprising:
...[the first part of the claim is the same as claim 1 of the first auxiliary request with the addition that a "metering component" is used for storing Protocol address information for each of the plurality of Internet Protocol addresses],
...including a first prefix and a second prefix;
in the case of determining that the first geographic *location does not correspond to a location of an* *internet service provider,* accessing, by executing an instruction with the processor, geographic information and determining a first geographic location corresponding to the most used Internet Protocol address by:
        matching the first prefix of the most used Internet
        Protocol address to a first range of Internet
        Protocol address prefixes;
        identifying a first geographic region based on the
        first range of Internet Protocol address prefixes;

> *matching the second prefix of the most used*
> *Internet Protocol address to a second range of*
> *Internet Protocol address prefixes; and*
> *identifying a second geographic region based on the*
> *second range of Internet Protocol address prefixes,*
> *the second geographic region within the first*
> *geographic region, the first geographic location*
> *within the second geographic region;*

accessing, by executing an instruction with the
processor, demographic information and determining a
demographic profile associated with the second
geographic region; and
associating the demographic profile with the media
device; and
in the case of ~~in response to~~ *determining that the*
first geographic location corresponds to a location of
an internet service provider, associating by executing
an instruction with the processor, a geographic area
with the media device, a size of the geographic area
corresponding to an average distance between the first
geographic location and respective locations of a
plurality of media devices, the geographic area within
the second geographic region;
accessing, by executing an instruction with the
processor, demographic information and determining a
demographic profile associated with the geographic
area; and
associating the demographic profile with the media
device.

VII.   Claim 1 of the **third auxiliary request** has the
       following wording:

       A method of associating media devices with a
       demographic composition of a geographic area, the
       method comprising:

providing a metering component to a media device via a first network communication;

receiving, via a second network communication from the metering component, a plurality of Internet Protocol addresses assigned to the media device and corresponding times during which respective ones of the plurality of Internet Protocol addresses were assigned to the media device, the media device associated with a panel member;

discarding ones of the plurality of Internet Protocol addresses for which the corresponding times are not associated with a time period;

calculating, based on the corresponding times, bandwidth usages corresponding to remaining ones of the plurality of Internet Protocol addresses, the calculating including:

determining a first amount of bandwidth usage of a first one of the remaining ones of the plurality of Internet Protocol addresses assigned to the media device, the first one of the remaining ones of the plurality of Internet Protocol addresses associated with first latitude-longitude coordinates; and determining a second amount of bandwidth usage of a second one of the remaining ones of the plurality of Internet Protocol addresses assigned to the media device, the second one of the remaining ones of the plurality of Internet Protocol address associated with second latitude-longitude coordinates;

determining, by executing an instruction with a processor, a most used Internet Protocol address associated with the time period, the most used Internet Protocol address determined from the remaining ones of the plurality of Internet Protocol addresses assigned to the media device based on the calculated bandwidth usages associated with the remaining ones of the plurality of Internet Protocol addresses, the most used

Internet Protocol address including a first prefix and
a second prefix, the second prefix including the first
prefix;
accessing, by executing an instruction with the
processor, geographic information and determining a
first geographic location corresponding to one of the
first latitude-longitude coordinates or the second
latitude-longitude coordinates associated with the most
used Internet Protocol address by:

> *matching the first prefix of the most used Internet*
> *Protocol address to a first range of Internet*
> *Protocol address prefixes;*
> *identifying a first geographic region based on the*
> *first range of Internet Protocol address prefixes;*
> *matching the second prefix of the most used*
> *Internet Protocol address to a second range of*
> *Internet Protocol address prefixes; and*
> *identifying a second geographic region based on the*
> *second range of Internet Protocol address prefixes,*
> *the second geographic region within the first*
> *geographic region, the first geographic location*
> *within the second geographic region;*

in response to determining that the first geographic
location corresponds to a location of an internet
service provider, associating, by executing an
instruction with the processor, a geographic area with
the media device, a size of the geographic area
corresponding to an average distance between the first
geographic location and respective locations of a
plurality of media devices, the geographic area within
the second geographic region;
accessing, by executing an instruction with the
processor, demographic information and determining a
demographic profile associated with the geographic
area; and

associating the demographic profile with the media device by linking a reference code corresponding to the demographic information to an electronic record including the media device.

VIII.   Claim 1 of the **fourth auxiliary request** has the same wording as claim 1 of the third auxiliary request with the additional specification that the metering component is provided as software and that it is installed within a hardware component.

Reasons for the Decision

1.   The claimed invention

The claimed invention relates to assigning automatically a demographic profile to a user.

1.1   In the context of targeted advertising, a demographic profile of each user needs to be generated in order to select the suitable advertising content. This profile usually comprises information such as age, gender, family situation, education (level), income (level), etc. As a user acts online, such information may be collected by the websites they visit or may be actively requested from the user. In general, it is difficult to compile all the collected information from different websites in order to generate a profile for a specific user. Moreover, users are usually reluctant to provide any personal information online.

1.2   The present invention uses the user's IP (Internet Protocol) address to determine the geographic location of the user's residence. Subsequently, using existing collections of demographic profiles generated for the residents of specific locations, assigns the

corresponding profile to the user.

1.3   Usually, users use their device (e.g. mobile phone) to
       connect to the Internet. They can do that from various
       locations such as their residence, their workplace, a
       public access point, etc. In each of those locations
       the user device is assigned a different IP address. The
       invention logs the IP addresses which a user device
       uses to access the Internet, and determines which one
       of those IP addresses corresponds to the residence of
       the user. The determination can be based on different
       criteria, such as the time an IP address is used to
       access the Internet, or the bandwidth consumption, i.e.
       the geographic location of the user's residence is
       taken to correspond to the IP address from which the
       user was connected to the Internet for the longest time
       period or with which they consumed the most bandwidth.

2.   Main request, added subject-matter

2.1   Claim of the main request comprises the following
       features:
       (a) "the second prefix [of the most used Internet
           Protocol address] including the first prefix"
       (b) "a size of the geographic area corresponding to an
           average distance between the first geographic
           location and respective locations of a plurality of
           media devices"
       (c) "the geographic area within the second geographic
           region".

       In the board's opinion these features do not have basis
       in the application as originally filed.

2.2   Feature (a) refers to the most used Internet Protocol
       (IP) address of the device. It is commonly known that

IP addresses have the form "NNN.NNN.NNN.NNN", whereby "N" is a digit. The application refers to each part of the IP address as "prefix". Hence, the first prefix refers to the first three digits before the first dot and the second prefix to the three digits between the the first and second dots. Taking as an example the IP address mentioned in the application (see first line of page 26 of the originally filed description), in the IP address 216.146.64.2, "216" is the first prefix and "146" is the second prefix. Thus, in the board's view, the passage on page 25, last line to page 26, line 5 does not disclose a second prefix including a first prefix, but rather that the first and second prefixes are separate part of an IP address.

2.2.1   Feature (a) was objected to under Article 123(2) EPC already by the examining division (see also point 1.1.3 of the Grounds for the decision under appeal). The appellant acknowledged that there was no explicit disclosure in the originally filed application of the second prefix including the first prefix, but argued essentially that the skilled person would know how IP addresses function and would directly and unambiguously derive feature (a) using only common general knowledge.

According to the application and the appellant's arguments, the first prefix (e.g. 216) corresponds to a first geographical region (e.g. a country). After this first geographical region is identified, the second prefix (e.g. 146) is used to define a second geographic region within the first geographic region (see also page 25, line 29 to page 26, line 5 of the originally filed description). In other words, since the second geographical region is within the first geographical region, it is to be understood that it corresponds to the combined prefixes (216.146) and not only to the

second prefix alone. When the second prefix is then
matched to a geographic location, the first prefix is
also (to be) taken into account. The appellant argued
that this belonged to common general knowledge and did
not have to be explicitly disclosed in the application.

2.2.2   The board is not convinced by this argument.

As a first point, the use of the term "prefix" in the
present context does not correspond to the normal,
established used of this term in the technical field of
Internet communication. For the sake of discussion, the
board accepts that the skilled person could deduce the
meaning of the term "prefix" from the application.

Secondly, the board is not convinced that IP addresses
function the way the appellant described. Although it
is commonly known that by taking more "prefixes" into
account, a more precise localisation can be identified,
the geographical region corresponding to NNN.NNN is not
always within the geographical region corresponding to
NNN. Taking the IP address mentioned in the application
as an example (216.146.64.2), it can be easily verified
that although IP addresses starting with 216 mostly
correspond to locations in the USA (the specific
example corresponds to a location in the Chicago area),
addresses with 216.155 may correspond also to Chile
(e.g. 216.155.64.2 in the region of Los Rios) and with
216.180 to Canada (216.180.64.2 in the area of
Vancouver). It is thus not necessary that the second
prefix always specifies a geographic within the
geographic region corresponding to the first prefix.

Hence, feature (a) has to be read rather as a specific
condition/constraint for the most used IP address and
as such it cannot be considered as derivable from the

application on the basis of common general knowledge.

The board's conclusion is therefore that feature (a) constitutes added-subject matter.

2.2.3   Regarding feature (b), the board notes that in the application as originally filed it is specified that the data specifying the average distance between media device users and the service provider location (the first geographic location of the claim) are provided by the internet service providers (see page 27, lines 1 to 4 of the originally filed description).

In claim 1 of the main request, however, the specification that the data are provided by the Internet service provider is missing, leaving it open as to how these data can be obtained/calculated. The board considers this omission to constitute an intermediate generalisation which has no basis in the originally filed application.

The appellant did not provide any arguments on this point.

2.2.4   As to feature (c), again there is no disclosure in the application as originally filed that the geographic area corresponding to the average distance between the media devices and the first geographic location (i.e. the location of the service provider) is necessarily within the second geographical region (identified by the second prefix).

The appellant did not comment on that point, either.

2.3   The board's conclusion is, thus, that claim 1 of the main request contains subject-matter extending beyond

the content of the originally filed application,
contrary to the requirements of Article 123(2) EPC and
the main request is therefore not allowable.

3.   First and second auxiliary requests, added subject-
        matter

        Claim 1 of the first and second auxiliary requests
        comprises features (b) and (c).

        The appellant did not comment on these requests during
        the oral proceedings and referred to its arguments
        provided in writing.

        The board's conclusion is thus that the first and
        second auxiliary requests are not allowable for the
        same reasons as the main request.

4.   Third and fourth auxiliary requests, admittance

4.1   These requests were filed with the appellant's letter
        dated 3 April 2023, i.e. after the board had issued
        summons to oral proceedings and separately a
        communication under Article 15(1) RPBA with the board's
        preliminary opinion. The third and fourth auxiliary
        request thus constitute an amendment to the appellant's
        appeal case, and its admittance into the proceedings is
        governed by Article 13 RPBA 2020.

4.2   According Article 13(2) RPBA 2020, amendments filed
        after summons to oral proceedings have been issued are
        to be taken into account only when the appellant
        provides cogent reasons justifying the existence of
        exceptional circumstances.

        The appellant did not provide any such reasons and the

board does not see any exceptional circumstances that
could justify the admission of the third and fourth
auxiliary requests into the proceedings.

4.3   The Board also refers to the criteria for admission of
        amendments to a party's case under Article 13(1) RPBA
        2020 and observes that claim 1 of each of the third and
        fourth auxiliary requests comprises features (a), (b)
        and (c) and thus does not overcome the issues raised by
        the board against the main request. Moreover, the
        amendments give *prima facie* rise to new issues.

4.3.1   According to claim 1 of both requests, once the IP
        addresses not associated with the specific time period
        are discarded, a plurality of IP addresses remains from
        which the most used one is to be identified (the
        "remaining IP addresses"). The criterion of most used
        bandwidth is used.

        A first amount of used bandwidth is determined for a
        first one of those remaining IP addresses and first
        latitude-longitude coordinates corresponding to this IP
        address are associated to it. A second amount of used
        bandwidth is determined for a second one of those
        remaining IP addresses and a corresponding second
        latitude-longitude coordinates are associated to it.
        Then the amount of used bandwidth is calculated for all
        the remaining IP addresses.

        According to claim 1, the most used IP address
        (including first and second prefixes) is determined
        from said remaining ones of the plurality of IP
        addresses assigned to the media device. According to
        the wording of claim 1, a first geographic location is
        "corresponding" to one of the first or second latitude-
        longitude coordinates and is "associated with" the most

used IP address. Hence, in the end, the most used IP address is determined to be one of the first or second one of the remaining IP addresses.

4.3.2   In the board's view it is not clear for the skilled person, how the first and second IP addresses are selected from the plurality of the remaining IP addresses. Neither is it clear how the skilled person knows that the most used IP address is one of those two and why is the bandwidth usage of all the remaining IP address calculated if it is determined from the beginning that the the most used IP address is the first or the second one. Claim 1 of the third and fourth auxiliary requests is found thus to lack clarity within the meaning of Article 84 EPC.

4.3.3   In addition, the steps described above are not disclosed in the originally filed application and the skilled person is not in a position to derive them directly and unambiguously from the content of the application as originally filed. Claim 1 of the third and fourth auxiliary request contains, thus, added subject-matter.

4.3.4   The appellant did not wish to comment during the oral proceedings on the admittance of the third and fourth auxiliary requests.

4.4   In view of the above considerations the board decides not to admit the third and fourth auxiliary requests into the appeal proceedings.

5.   Since none of the main, first and second auxiliary requests is allowable and the third and fourth auxiliary requests are not admitted, the appeal cannot succeed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Sánchez Chiquero   T. Bokor

Decision electronically authenticated