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Datasheet for the decision
of 6 July 2023

Case Number:	T 1468/20 - 3.5.01
Application Number:	14196343.9
Publication Number:	2849130
IPC:	G06Q10/02, G06F17/30
Language of the proceedings:	EN

Title of invention:
Compilation of scheduled transport price data

Applicant:
Skyscanner Limited

Headword:
Extracting flight data/SKYSCANNER

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - extracting price data from a web page using a linked script that includes pattern matching instructions (no - obvious) - disregarding prices which were not offered to a sufficient number of different users (no - not technical) - using IP addresses to distinguish those users' devices (no - obvious)

Decisions cited:
T 0641/00

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It can be changed at any time and without notice

Case Number: **T 1468/20 - 3.5.01**

D E C I S I O N
of Technical Board of Appeal 3.5.01
of 6 July 2023

Appellant: (Applicant)	Skyscanner Limited The Red House Grove Road IP21 4JP Norfolk Brockdish (GB)
Representative:	Langley, Peter James Origin Limited Twisden Works Twisden Road London NW5 1DN (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 14 January 2020 refusing European patent application No. 14196343.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	W. Chandler
Members:	W. Zubrzycki
	L. Basterreix

Summary of Facts and Submissions

I.   This is an appeal against the decision of the examining
        division to refuse European patent application No.
        14196343.9 for lack of inventive step (Article 56 EPC).

II.   The examining division found that claim 1 of the main
        request was obvious over D3 (US 2007/0299743 A1). The
        additional feature of the first auxiliary request was
        obvious over D3 in view of common general knowledge as
        exemplified in D7 (US 2005/097189 A1) or D8
        (WO 2006/019941 A2). The additional features of claim 1
        of the second and third auxiliary requests were obvious
        over D3 combined with common general knowledge
        summarised by D6 (ANONYMOUS: "HTML 4.0 Specification",
        INTERNET CITATION, published on 24 April 1998,
        retrieved on 25 February 2002). The additional
        clarifying feature of claim 1 of the fourth and fifth
        auxiliary requests was obvious over D3.

III.   In the statement setting out the grounds of appeal, the
        appellant requested that the decision be set aside and
        a patent be granted on the basis of the refused
        requests.

IV.   In the communication accompanying the summons to oral
        proceedings, the Board expressed its preliminary view
        that the main request was obvious over D3 in view of
        common general knowledge summarised by background
        document D9 (Wikipedia entry: "Multitier architecture",
        published on 10 January 2008) which the Board
        introduced into the proceedings under Article 114(1)
        EPC. The additional features of the auxiliary requests
        were obvious over the combination of D3 and D7 and the

common general knowledge summarised by D6.

V.   By letter of 5 May 2023, the appellant provided
          arguments in favour of inventive step of the main and
          first auxiliary request.

VI.   The oral proceedings took place on 6 July 2023, jointly
          with oral proceedings for related cases T 1467/20 and
          T 540/20. As per appellant's request, they were held by
          videoconference.

VII.   Claim 1 of the main request reads:

          "*A computer-implemented method of storing scheduled
          transport price data comprising the following steps:
          (a) extracting scheduled transport price data from web
          page data using a plurality of Internet browsing
          clients, wherein a data receiving server is in
          communication with a plurality of Internet browsing
          clients, wherein a plurality of first web page data
          servers serve web page data to the plurality of
          Internet browsing clients responsive to each client
          request, wherein the served web page data comprises
          scheduled transport price data and executable
          instructions, the scheduled transport price data
          comprising at least one identifier of an instance of
          scheduled transport and at least one price associated
          with a said instance of scheduled transport; and the
          Internet browsing clients execute the executable
          instructions, wherein the execution of the executable
          instructions causes the Internet browsing clients to
          transmit at least a portion of the received scheduled
          transport price data from the served web page data to
          the data receiving server responsive to the execution
          of the executable instructions;
          wherein in order to select the portion of the received*

*scheduled transport price data to be transmitted by the
Internet browsing client to the data receiving server
responsive to the execution of the one or more received
executable instructions, the one or more received
executable instructions cause the Internet browsing
client to search at least a portion of the received web
page data to extract the scheduled transport price data
for transmission to the data receiving server;
(b) storing the scheduled transport price data in a
database of scheduled transport price data searchable
by a scheduled transport price data search engine,
wherein the data receiving server stores the extracted
scheduled transport price data as a compiled price data
database, wherein the compiled price data is provided
to a further Internet server which is operable to
select and serve price data from the compiled price
data responsive to search requests from Internet
browser clients;
and in which:
(c) the number of different IP addresses from which the
same price of an instance of scheduled transport is
received is counted to determine whether it is trusted
and can hence be distributed, and
(d) IP addresses from which the scheduled transport
price data was received are monitored by the data
receiving server, which only considers a particular
price to be trusted, and thereby suitable for
distribution, once the data receiving server has
received the same price from Internet browsing clients
at a number of different IP addresses, wherein the data
receiving server populates the scheduled transport
price data database."*

VIII. Claim 1 of the first auxiliary request adds to claim 1
       of the main request the following wording at the end of
       feature (a):

"wherein the one or more received executable instructions comprise pattern matching instructions, which, when executed, cause the Internet browsing client to extract data which fulfils criteria specified by the pattern matching instructions, wherein some or all of which extracted data is transmitted to the data receiving server;"

IX.   Claim 1 of the second auxiliary request adds the following two features at the end of claim 1 of the main request:

"wherein the web page data includes a reference to an address of the data receiving server from which second web page data is downloaded by an Internet browsing client and the Internet browsing client downloads second web page data from the referenced data receiving server responsive to receipt of the first web page data, such that received web page data comprises both the web page data and the second web page data,

wherein the web page data comprises one or more first executable instructions and the second web page data comprises one or more second executable instructions, the said one or more received executable instructions comprising the one or more first executable instructions and the one or more second executable instructions, wherein execution of the one or more first executable instructions causes the Internet browsing client to execute the one or more second executable instructions, wherein execution of the one or more second executable instructions by the Internet browsing client causes the Internet browsing client to transmit at least a portion of the received scheduled transport price data to the data receiving server."

X.   Claim 1 of the third auxiliary request adds the same
        two features at the end of claim 1 of the first
        auxiliary request.

XI.   Claim 1 of the fourth auxiliary request adds to feature
        (d) of claim 1 of the main request the wording "*which
        is then distributed*" after "*suitable for distribution*".

XII.   Claim 1 of the fifth auxiliary request incorporates the
        same amendment into claim 1 of the first auxiliary
        request.

XIII.   The appellant argued as follows:

        In contrast to the claimed invention, the script of D3
        did not extract price information from a shopping web
        page into which it was embedded. Rather, it received
        this information from the merchant server that provided
        the web page. The claimed solution reduced the amount
        of transmitted data which was a technical effect. Since
        D3 did not provide any hints to this solution, the
        skilled person, who was a computer programmer for
        cataloging and reporting Internet site activity data,
        would not have arrived at it. Although D3 mentioned web
        scraping as a possible alternative, this process was
        performed on a web scraping server, rather than within
        the limited programming environment of the browser.

        Considering only trusted prices was a data filtering
        process and, therefore, technical. The use of IP
        addresses to distinguish user devices was a technical
        implementation choice.

        The system of D3 did not store price data in a compiled
        price data database.

The use of a script linked from another server, as
defined in the second and third auxiliary requests,
solved the technical problem of minimising disturbance
to the airline's web server while amending the script.
By combining D3 and D6, the skilled person might have
arrived at linking the web page to an external script,
but not at placing this script on another server.

Reasons for the Decision

1.   The invention

1.1   The invention concerns an Internet service aggregating
        transport price data, e.g. flight prices, collected
        from users' searches of prices on transport providers'
        websites, see published application, paragraphs [8] and
        [59].

1.2   In terms of Figure 1, claim 1 of the main request
        specifies a method which searches and extracts flight
        data ("scheduled transport price data" in the claim)
        from various airline web pages that users view and
        provide this data to a central data receiving (second)
        server 22 for storage in a database 26 ("compiled price
        data database"), see paragraphs [52], [56] and [58].
        This database is searchable through the Internet via a
        further server 28, see paragraphs [53] and [60].

        The web page containing the price data served by the
        airline's website also contains a script ("executable
        instructions"). The users' browsers (clients) 20
        execute the script which searches the web page and
        extracts the price data, see paragraph [56].

        In order to ensure the reliability of received flight
        prices, the data receiving server monitors IP addresses

of the clients and only considers a flight price as
trusted and suitable for distribution, after it has
received this price from clients at a sufficient number
of different IP addresses, see paragraph [62].

2.   Main request, Article 56 EPC

2.1   The examining division found that claim 1 lacked an
         inventive step over D3 that also disclosed a central
         "data receiving server" aggregating price data from
         shopping web pages rendered on users' computers. The
         information was provided by a web script embedded on
         the web page, see D3, paragraphs [64], [76], [77] and
         [80].

2.2   Contrary to the appellant's view, the Board agrees with
         the examining division (decision, point 12.3) that the
         central database of D3 in which the collected price
         information is stored corresponds to the compiled price
         data database in feature (b) of claim 1, see D3
         paragraph [64]. The Board also considers, unlike the
         division (decision, point 12.4.4), that the central
         database of D3 responds to search requests as specified
         in the same feature, see paragraphs [135], [143] and
         [144]. Thus feature (b) differs by the use of a further
         server for handling the search requests and the fact
         that the querying users are Internet browser clients.

2.3   In the communication accompanying the summons to oral
         proceedings, the Board tended to consider that D3 also
         implicitly disclosed that the script ("executable
         instructions") on the web page received by the user
         searched the rendered web page in order to extract the
         price data information (last part of feature (a)).
         However, at the oral proceedings, the Board accepted
         the appellant's reading of D3 that the script did not

extract information from the web page but rather
requested it from the merchant server. Thus, in D3, the
merchant server provides the user's browser with two
kinds of information: the shopping web page to be
rendered and a message containing information on shown
products directed to the embedded script.

2.4   Hence, claim 1 differs from D3 as follows:

Claim preamble: In that the processed data relates to
scheduled transport data.
Feature (b), end: By a further Internet server which
selects and serves the aggregated data from the
database to browser clients.
Features (c) and (d): In that the data receiving server
monitors IP addresses from which the data was received
and only considers a particular price to be trusted,
and thereby suitable for distribution, once it has
received the same price from Internet browser clients
at a number of different IP addresses.
Feature (a), end: In that the one or more received
executable instructions cause the Internet browsing
client to search at least a portion of the received web
page data to extract the scheduled transport price data
for transmission to the data receiving server.

2.5   Like the examining division, the Board judges that the
specification of transport data relates to business
data content and is not technical (see decision, point
12.5.1) and that the feature of the further Internet
server is an obvious option (point 12.5.3). The Board
adds to the examining division's analysis of the latter
feature that middleware servers sitting between a
database and Internet browser clients were common
knowledge at the priority date, as shown by background

document D9 for example.

2.6   As for determining trust based on the number of
        different IP addresses, it was common ground that it
        produced the effect of returning only trusted prices to
        Internet browser clients. However, the claimed method
        (feature (d)) does not actually use the information
        about the prices' trustworthiness while storing data in
        the database and it is doubtful whether the asserted
        effect is indeed provided.

2.7   Nevertheless, the Board agrees with the examining
        division that even assuming that only trusted prices
        are stored in the compiled price data database, this
        feature is obvious.

        The appellant argued that any kind of data filtering
        was a technical process. However, in the claim, the
        filtering boils down to disregarding prices that were
        not offered to a sufficient number of different users.
        The Board concurs with the examining division
        (decision, point 12.5.5) that this is a purely business
        idea.

        It is common ground (cf. decision, point 12.7.5) that
        using IP addresses to distinguish user devices is an
        implementation choice. However, this would have been
        obvious, once, in line with the COMVIK principle (see
        decision T 641/00 - *Two identities/COMVIK*), the
        aforementioned business idea has been given to the
        skilled person for implementation. The obviousness of
        the solution becomes even more apparent considering
        that in D3 the central server already receives clients'
        IP addresses together with the extracted product
        information (paragraph [80], last sentence).

2.8   At the oral proceedings the main point of contention
        was the obviousness of using the script to search the
        received web page to extract the price data.

        Firstly, the appellant argued that the skilled person
        was a computer programmer for cataloging and reporting
        Internet site activity data. However, the Board
        considers this to be an arbitrarily restrictive
        technical qualification to the particular application
        of D3 that does not exist in practice. In the Board's
        view, the skilled person is simply a web programmer.

        Secondly, the appellant considered that using the
        script to search the web page solved the problem of
        reducing the amount of transmitted data between the
        merchant and the browser. The Board agrees that this is
        certainly one effect of the invention. However, the
        Board sees the invention in a more general sense as
        being about the decision where to obtain information
        about products' prices. In D3, it is done by the
        merchant, whereas in the invention it is the browser.
        Thus, the difference in a more general sense represents
        an alternative choice for where to perform the
        processing.

        In this general context the amount of transmitted data
        is one of many trade-offs. Others would be: processing
        power required at the merchant/browser and programming
        complexity at the merchant/browser. Furthermore, the
        choice could be driven by non-technical considerations,
        such as whether the merchant or the customer wants to
        control the information obtained.

        Thus, the Board essentially agrees with the examining
        division that searching and extracting information
        about the web page in the browser is more properly to

be considered as an alternative to providing this
information at the merchant. In such cases, the skilled
person would consider any well known alternative in the
technical field unless the closest prior art, or some
other fact, teaches away from it.

As mentioned above, the skilled person is a web
programmer. A web programmer knows that the solution of
searching and extracting data from web pages is a
well-known technique, commonly known in the art as web
scraping. In fact, as stated by the examining division
(decision, point 14.4), D3 at paragraph [75] actually
teaches obtaining the product price information using
web scraping as an alternative to obtaining this
information from the embedded script, albeit at another
server.

Furthermore, the Board judges that, contrary to the
appellant's view, the use of JavaScript as present in
the browser in D3 to scrape pages poses no technical
difficulty.

Thus, the Board agrees with the examining division's
conclusion at point 14.4 of the decision that the
skilled person would have considered using a scraping
functionality in the embedded script as an obvious
possibility.

2.9   Hence, claim 1 lacks an inventive step (Article 56
        EPC).

3.   First auxiliary request, Article 56 EPC

3.1   Claim 1 of the first auxiliary request adds that the
        executable instructions use pattern matching
        instructions to extract the price information from the

web page.

3.2   However, as set out at point 14.4 of the decision, it
        was common knowledge at the priority date that pattern
        matching instructions, such as regular expressions,
        were used in web scraping. In this respect, during the
        oral proceedings, the Board cited the Wikipedia
        articles on web scraping and regular expressions which
        confirm these statements.

        Thus, the use of pattern matching instructions would
        have been obvious.

3.3   Hence, claim 1 lacks an inventive step (Article 56
        EPC).

4.   Second and third auxiliary requests, Article 56 EPC

4.1   Claim 1 of the second auxiliary request essentially
        adds that the "executable instructions" consist of
        "first executable instructions" and "second executable
        instructions". The former are executed when the web
        page has been loaded (e.g. by onload event handler 208
        in Figure 4) and cause execution of the "second
        executable instructions". These instructions (e.g. the
        function "skygo" in Figure 5A), which have been
        downloaded from a given address on the data receiving
        server (e.g as a JavaScript using the <script> tag
        206), actually cause the client to transmit the
        required data.

4.2   Contrary to the appellant's view, the Board agrees with
        the examining division (decision, point 15.4) that,
        starting from D3, linking the web page to a script on
        the central server is an obvious application of the
        HTML script element described in D6 at section 18.2.1.

Again, the Board views this feature as an alternative; embedding the whole script code on the page versus loading it from the data receiving server. And again, the appellant's problem of minimising disturbance to the airline server while altering the script is one of the trade-offs representing the circumstances steering the choice of alternative. Another would be the loading time of the script.

4.3   Hence, claim 1 of the second auxiliary request lacks an inventive step (Article 56 EPC). And so does claim 1 of the third auxiliary request, adding the identical feature to claim 1 of the first auxiliary request.

5.   Fourth and fifth auxiliary requests, Article 56 EPC

5.1   Claim 1 of the fourth auxiliary request adds to claim 1 of the main request that trusted prices are distributed. Claim 1 of the fifth auxiliary request adds this feature to claim 1 of the first auxiliary request.

5.2   The added feature is obvious for the reasons provided in connection with the feature determining trust based on the number of different IP addresses (see point 2.6, above). Accordingly, the fourth and fifth auxiliary requests lack an inventive step (Article 56 EPC).

6.   Since none of the appellant's requests are allowable, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

T. Buschek   W. Chandler

Decision electronically authenticated