Computer Implemented Inventions at the EPO

Belgrade, October 2010

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Director, Cluster Computers
European Patent Office
"A method of promoting toy sales,
comprising the step of
placing the toys on the lower shelves of the store,
where they are easily accessible for children."

classified in IPC8 class G06Q
(former IPC7 G06F17/60)
~ 145,000 published applications
IP for Software?

"Software patent"
- is a colloquial expression
- may mislead to the assumption that source/object code is patentable

"Computer-implemented invention" - CII
- an invention whose implementation involves the use of a computer, computer network or other programmable apparatus
- with features realised wholly or partly by means of a computer program

Examples:
- a program-controlled ...
  - washing machine cycle;
  - car braking system.
Agenda

1. Legal Background:

2. Example:

3. Statistics
1. Legal Background: EPC, Guidelines and Case Law
European Patent Convention

What is an Invention?

Patentable Inventions

European patents shall be granted for

- any inventions, in all fields of technology, provided that they
  - are new
  - involve an inventive step and
  - are susceptible of industrial application

→ A.52(2)(3)

→ A.54

→ A.56

→ A.57
What is NOT an Invention?

The following, in particular, shall not be regarded as inventions:

a) discoveries, scientific theories, mathematical methods;
b) aesthetic creations;
c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
d) presentations of information;

...only to the extent to which a European patent application relates to such subject matter or activities as such.
What is an Invention?

There is no positive definition of the term "invention" in the EPC.

Interpretation

Guidelines for Examination in the EPO

Case Law of the Boards of Appeal

EPC - The European Patent Convention
What is an Invention?

Non-Inventions

- Narrow Interpretation
- Activities falling within the notion of a **non-invention** would typically represent **purely abstract concepts** devoid of any technical implication.
- A non-invention has no technical character.

*T 258/03 (HITACHI)*
Technical Character

Further requirement for patentability implicitly contained in the EPC:

the invention must be of "technical character" to the extent that it
- must relate to a technical field → R.42(1)(a) EPC
- must concern a technical problem → R.42(1)(c) EPC
- must have technical features in terms of which the matter for which protection is sought can be defined in the claim → R.43(1) EPC

Guidelines, C-IV 1.2

- no general definition of „technical“

=> interpret grey areas
series of individual Board of Appeal decisions
Technical is...

- processing **physical data** parameters or control values of an industrial process

- processing which **affects the way a computer operates**
  - saving memory, increasing speed
  - security of a process, rate of data transfer etc.

- the **physical features of an entity**
  - memory, port etc.
Computer Programs

...for computer programs and computer program products...

The computer program, when carried out has to provide a "further technical effect"

The normal technical effects like flow of electrical current are not sufficient.

T1173/97 - IBM
T0935/97 - IBM
# Computer Programs

<table>
<thead>
<tr>
<th>further technical effect</th>
<th>no further technical effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>control of a brake in a car</td>
<td>aesthetical effects of music or a video</td>
</tr>
<tr>
<td>faster communication between mobile phones</td>
<td>new rules for an auction scheme</td>
</tr>
<tr>
<td>secure data transmission (encryption of data)</td>
<td>selling and booking sailing cruise packages</td>
</tr>
<tr>
<td>resource allocation in an operating system</td>
<td>calculation of a pension contributions</td>
</tr>
</tbody>
</table>
Definition of German Federal Court of Justice

„A teaching for a systematic proceeding by application of controllable natural forces to achieve a causally perceivable result, which is the immediate consequence of the controllable natural forces without an intermediate step of the human intellect.“

Antiblockiersystem: GRUR 1980, 802
Rote Taube: GRUR 1969, 692
Definition of German Federal Court of Justice

revisited

„A process that involves – prior to the physical production – an intermediate step performed substantially with the aid of computers cannot be excluded from patentability on the grounds that it refrains from making direct use of controllable forces of nature if the solution seeks to promote the possibility of manufacturing technically workable products in a different manner by technical knowledge.“

Logikverifikation: BGH ref X ZB 11/98
Technical is...

Greg Aharonian: patnews !20100708

And as part of global harmonization, here's a deal to make every one happy: if the EPO Appeals Boards will define "technical effect", the U.S. Supreme Court will define "abstract".

Judge Potter Stewart (Jacobellis vs Ohio, 1964): "I know it when I see it"
Exclusion

✓ Subject-matter is not excluded from patentability

✗ Subject-matter is excluded from patentability

At least one feature has technical character => subject-matter has technical character.

Technical character

No technical character

not relevant for inventive step

obvious ?

Closest prior art
Inventive step

Problem and solution approach

Establish closest prior art
Determine differentiating features and their technical effects
Formulate an objective technical problem
Decide whether the proposed solution is obvious for the skilled person
2. Examples:
Computer implemented method for doing business
Example from Business Methods

"A method of controlling payment and delivery of content"

Regulation: access to content is free
- if user is from a country with GDP < limit value AND
- if the requested content is scientific content

1 epi Information 2/2007 (65-69)
Example I:

A method of controlling payment and delivery of content, the method comprising:

– a provider receiving a request for content from a user;
– the provider accessing content information describing the requested content;
– the provider accessing regulation information describing at least one regulation that is related to the payment and the content information of the requested content and to geographical information of the user;
– determining the geographic location of the user;
– the provider determining whether the requested content satisfies the at least one regulation;
  • if so, delivering the requested content to the user for free;
  • if not, transmitting a payment request to the user.

Clearly Technical Aspects

none
Example I:

The subject matter of the claim defines purely a business or administrative method and does not have a technical character.

→ objection under Article 52(1) because the claim constitutes subject-matter in the sense of Article 52(2) & (3)

→ Search report: Declaration under Rule 63 EPC
Technical: yes – but: inventive?

Example:
A computer implemented method of controlling payment where some details are technical

Does this merit a patent? -> NO

technical character: yes

technical difference: inventive? Art. 56

Guidelines C-IV, 11.5.2 Official Journal 11/2007, p.594
The triangle of death

Article 83 EPC
enabling disclosure

Article 56, EPC
inventive step

Article 123(2), EPC
added subject matter

R.I.P. Here lies your application
Example II:

A **computer-implemented** method of controlling payment and delivery of content within a **computer system** comprising a user **terminal**, a provider **server** and a **database** which are **connected via a communication network**, the method comprising:

- the provider **server** receiving a request for content from the user **terminal**;
- the provider **server** accessing **in the database** content information describing the requested content;
- the provider **server** accessing regulation information **in the database** describing at least one regulation that is related to the payment and the content information of the requested content and to geographical information of the user;
- determining the geographic location of the user;
- the provider **server** determining whether the requested content satisfies the at least one regulation;
  - if so, delivering the requested content to the user **terminal**
  - if not, transmitting a payment request to the user **terminal**.
Example II:

A computer implemented method comprising:

- a server receiving data from a terminal over a communication network;
- the server accessing data in a database;
- the server processing the accessed and received data;
- the server transmitting the processing result to the terminal;

The subject matter of the claim defines technical and non-technical aspects and thus has **technical character**.

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**Clearly Technical Aspects**

**Non-Technical Aspects/ Process**

Same business process as in Example I

**no technical interaction
does not contribute to technical character**

assessment of inventive step (step 4)
### Example II: Inventive Step

<table>
<thead>
<tr>
<th>Technical character:</th>
<th>yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-technical aspects:</td>
<td>yes</td>
</tr>
<tr>
<td>Requirements specification:</td>
<td>= business method: &quot;ordering content and calculating its price&quot;</td>
</tr>
<tr>
<td>Closest prior art:</td>
<td>computer system comprising a server, database, and a terminal which are connected via a communication network</td>
</tr>
<tr>
<td>non-technical differences:</td>
<td>said business method</td>
</tr>
<tr>
<td>technical differences:</td>
<td>none, no technical implication of non-technical aspects</td>
</tr>
<tr>
<td>Skilled person:</td>
<td>data processing expert</td>
</tr>
<tr>
<td>Objective technical problem:</td>
<td>no technical problem OR automate said business method on said computer system</td>
</tr>
<tr>
<td>Solution:</td>
<td>implementation/ automation is considered obvious</td>
</tr>
</tbody>
</table>

Assistance to the Patent Office
Example III:

A computer-implemented method of controlling payment and delivery of content within a computer system comprising a user terminal, a provider server and a database which are connected via a communication network, the method comprising:

– the provider server receiving a request for content from the user terminal;
– the provider server accessing in the database content information describing the requested content;
– the provider server accessing regulation information in the database describing at least one regulation that is related to the payment and the content information of the requested content and to geographical information of the user;

– determining the geographic location of the user;
– the provider server determining whether the requested content satisfies the at least one regulation;

  • if so, delivering the requested content to the user terminal
  • if not, transmitting a payment request to the user terminal.

[Example III (continued)]

wherein the geographic location of the user is determined by the IP address of the user terminal using method steps x, y, z.
Example III: Inventive Step

Technical character: yes
Non-technical aspects: yes

Requirements specification:
= business method:
"ordering content and calculating its price"

Closest prior art: computer system comprising a server, database, and a terminal which are connected via a communications network capable of determining the location of user.

non-technical differences: said business method
technical differences: method steps x, y, z
Skilled person: data processing expert

Objective technical problem:
1. automate said business method
2. find alternative method for determining geographic location of use

Solution:
1. automation is obvious
2. obvious?

Assistant to the Patent Office
3. Statistics: Methods for doing business
Development of business methods in Europe

Classification tree G06Q:
- G06: Computing, calculating, counting
- G06Q: Data processing systems or methods, specially adapted for administrative, commercial, financial, managerial, supervisory or forecasting purposes
  - G06Q10: Administration
  - G06Q20: Payment schemes
  - G06Q30: Commerce
  - G06Q40: Finance

"D.Closa et.al. Patent Law for Computer Scientists © Springer-Verlag Berlin Heidelberg 2010"
Business methods at the USPTO and JPO

Art unit 705 at the USPTO

Business methods at the JPO
Donald Knuth on patents:

*I'm against patents on things that any student should be expected to discover.*

... Algorithms are inherently mathematical things that should be as unpatentable as the value of $\pi$.

... for something non-trivial ... there's more justification for somebody getting a right to license the method ..., instead of keeping a trade secret.

That's the whole idea of patents; ...“

Summary

Basic components for the grant of a computer implemented invention

- Technical character
- Novelty
- Further EPC requirements
- Invention step

Art. 52 (2)(3)
Art. 54
Art. 56
Any Questions?

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Thank you for your attention!

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