Examination of Computer Implemented Inventions CII and Business Methods Applications

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Outline

- What are computer implemented inventions and business methods
- Legal context
- Common practice at the EPO
- Relevant decisions & examples
CII and Business Methods

- A Computer Implemented Invention is an invention containing features realised wholly or partially by means of a computer program.
- A business method has no clear definition, denotes commercial activities, marketing, financial strategies etc.
- A business method can be a CII or not.

- Method for selling toys in which toys are placed in low shelves easily accessible by young children.
Legal Framework

Basic Requirements

EPC
European Patent Convention
Basic Requirements

European Patent Convention (EPC)

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.57
→ A.54
→ A.56
→ A.52(2)(3)

What is an invention?
What is an invention?

No positive definition of an invention

EPC defines inventions by exclusions:

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.
Legal Framework

Basic Requirements

EPC
European Patent Convention

Interpretation

Guidelines for Examination in the EPO

Case Law of the Boards of Appeal
Fundamentals of Examination

- determine if it (what) is an invention

- check other requirements recited in Article 52(1) EPC

- legal context

  - EPC
  - decisions of the Boards of Appeal
  - guidelines for examination
What is an invention?

- Article 52 (2)&(3) EPC exclusions:
  - narrow interpretation
  - exclusions relate to purely abstract concepts devoid of any technical implication

- exclusion is relative
  - circumstances or interpretations which rule out exclusion

- from the BOA decisions and guidelines

need of technical character
Invention: Why require "technical character"?

- implicitly contained in the EPC

  the invention must be of *technical character*
  to the extent that it
  - must relate to a **technical** field → Rule 42(1)(a) EPC
  - must concern a **technical** problem → Rule 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 → Rule 43(1) EPC

- implicit requirement of the EPC corroborated by BoA
  (*T1173/97*, *T935/97*, *T931/95*, *T641/00*, *T258/03*)
What is technical character?

- 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, processor etc.
What is technical character?

not enough

- involvement of technical considerations, if method may exclusively be carried out mentally  
  \( T\ 914/02 \)
  \( GE, \ nuclear\ core \)

- although possibly encompassing a technical embodiment, also encompasses ways of implementing it that do not qualify as technical 
  \( T\ 619/02\ QUEST,\ odour\ selection \)
What is technical character?

... for computer programs

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

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

T 1173/97 (IBM)
T 935/97 (IBM)
## What is technical character?

<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>
Technical character assessment

- when
  - at the search stage (if possible, otherwise examination)

- without using prior art
  - T1173/97 IBM, T0931/95 Pension Benefits (PB), T0258/03 Hitachi

- claim considered as a whole
  - T0026/86 X-ray apparatus, T0208/84 VICOM

- each feature or their combination needs to be considered
  - T0258/03 Hitachi even trivial features can lend technical character

- claim category relevant?
  - Yes in T0931/95 PB
  - No in T0769/92 Sohei, T1173/97 IBM, T0258/03 Hitachi, Guidelines GII,2 (2012)
So what is an invention?

✓ 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.
Having technical character, is:

- a general and absolute requirement
- a requirement strictly separated from the other 3
- ... but a trivial requirement!

T 154/04 (DUNS)

T0258/03 Hitachi
Trivial requirement

"A method of encouraging customers to be loyal buyers by giving a discount on future purchases."

"A computer implemented method with a database of customers who have previously purchased goods for applying a discount to any subsequent purchase."
Fundamentals of Examination

- determine if it is an invention

- check other requirements recited in Article 52(1) EPC

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
Mixed type claims

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

assessment of novelty and inventive step

Technical character

No technical character

Subject-matter

How are non-technical aspects dealt with?
Assessing novelty A. 54

- Novelty exists if at least one technical feature distinguishes claimed invention from prior art.

- ...in practice, in particular for mixed-type claims

any distinguishing feature implies novelty
What is an inventive step?

- requires a non-obvious technical contribution, ie a non-obvious solution to a technical problem defined in terms of technical features
- assessed with respect to prior art

Problem-and-solution approach

- Identify closest prior art
- Determine differentiating features and their technical effects
- Formulate an objective technical problem based on the differences
- Decide whether the proposed solution is or not obvious for a person skilled in the art
Assessing inventive step

- State of the art: state of technology
- Closest prior art (CPA): chosen from a field of technology
- Person skilled in the art
  - Skilled in a field of technology
  - Has common general knowledge in the field
  - Has no knowledge of non-technical fields
- Objective technical problem
  - problem that the skilled person might be asked to solve
  - derived by the technical differences between the closest prior art and the claimed subject-matter
  - it must be a technical problem
  - no pointers to the technical solution

*
Assessing inventive step: Mixed-type claims

- In Computer-Implemented Inventions (and Business methods) inventions often mix technical aspects and excluded matter. How to determine a technical problem? **COMVIK approach T0641/00**

Features making no contribution to technical character (i.e. not contributing to the solution of a technical problem by providing a technical effect) **cannot support the presence of an inventive step** (**T641/00 COMVIK**)

Only technical features and aspects of the claimed invention should be taken into account in assessing inventive step.
Assessing inventive step

- Objective technical problem
  - problem that the skilled person might be asked to solve
  - derived by the *technical* differences between the closest prior art and the claimed subject-matter
  - it must be a *technical problem*
  - no pointers to the *technical* solution, but ...

... where a claim refers to an aim to be achieved in a non-technical field, this aim may legitimately appear in the formulation of the problem as part of the framework of the technical problem that is to be solved, in particular as a constraint that has to be met. 

*(T641/00; COMVIK)*
Assessing inventive step: Mixed-type claims

Clearly Technical Aspects

State of the art:
- state of technology

Closest prior art:
- always chosen from a field of technology

Skilled person:
- skilled in the field of information technology
- aware of common general knowledge in information technology
- no knowledge of non-technical fields
  (T614/00; COMVIK)
  (T0172/03; RICOH)

Non-Technical Aspects/ Process

'requirements specification'
= instructions given to a programmer summarising the requirements of the customer
i.e. business or administrative process to be automated

≠ state of the art  (T172/03; RICOH)

non-patentable considerations, ideas and concepts that belong to the phase preceding any invention

(T154/04; DUNS)
**CII & BM**

**mix** of **non-technical** and **technical** features:

- "requirement specification"

  - = instructions given to the programmer summarising the requirements of the customer

  - e.g. a business or administrative process to be automated

- **prior art in a field of technology**

  - skilled person is aware of it *T641/00 Comvik*
  
  - normally found in description & in claims
Mixed subject-matter

based on the **technical** implementation set out in the claims and description:

identify closest prior art in the field of technology

IF: only **notorious** technical features
e.g. computer network or general purpose computer

THEN: no **written** evidence is necessary to prove its existence *T1242/04*

OTHERWISE:
search for the closest document describing the technical features.
Mixed subject-matter

Identify **all the differences** between the subject matter of the claim and the closest prior art

a) if there are none
   - object under Art. 54

b) if the differences are not technical
   - no objective technical problem
   - object. technical problem = implementation/automation of requirements specification
   - double-check: is there a non-obvious technical effect achieved by the non-technical features in combination with the technical features?
   - object under Art. 56
Mixed subject-matter

Identify **all the differences** between the subject matter of the claim and the closest prior art

c) if differences = mix of non-technical & technical features
   i) formulate the objective technical problem taking into account the requirements specification e.g. "how to adapt system of CPA in order to implement the business concept"

Solution:
solution of the objective technical problem must require the technical features of the above identified differences.

ii) if the solution of the technical problem is obvious
   → object under Art. 56
   double-check: Is there a non-obvious technical effect achieved by the non-technical features in combination with the technical features?

d) if differences are purely technical
   apply classical PSA
Overview

Examination CII & BM

July 2012

31/58
Example I

Method for purchasing and payment of goods and services, preferably audio and/or video data provided on a provider's platform in a computer network, like the Internet, comprising the steps:

- taking a customer's order for goods and services, preferably an order for audio and/or video data files;

- providing a download of ordered goods and services, preferably of audio and/or video data files, for the customer; and

- debiting a mobile telephone account of the customer.
## Example I

<table>
<thead>
<tr>
<th>Technical</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed type claim</td>
<td>Yes</td>
</tr>
<tr>
<td>Requirement specs</td>
<td>Ordering and paying for goods</td>
</tr>
<tr>
<td>Closest prior art</td>
<td>Platform for downloading audio files from the Internet</td>
</tr>
<tr>
<td>Differences</td>
<td>Debiting mobile phone account</td>
</tr>
<tr>
<td>Technical problem</td>
<td>none</td>
</tr>
<tr>
<td>Solution obvious</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
Example I modified

Method for purchasing and payment of goods and services, preferably audio and/or video data provided on a provider's platform in a computer network, like the Internet, comprising the steps:
- taking a customer's order for goods and services, preferably an order for audio and/or video data files;
- providing a download of ordered goods and services, preferably of audio and/or video data files, for the customer; and
- debiting a mobile telephone account of the customer,

whereby the purchase data sent to the telephone company are at least partially encrypted by a password.
### Example I modified

<table>
<thead>
<tr>
<th>Technical</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed type claim</td>
<td>Yes</td>
</tr>
<tr>
<td>Requirement specs</td>
<td>Ordering and paying for goods</td>
</tr>
<tr>
<td>Closest prior art</td>
<td>Platform for downloading audio files from the Internet</td>
</tr>
<tr>
<td>Differences</td>
<td>Debiting mobile phone account and encrypting purchase data</td>
</tr>
<tr>
<td>Technical problem</td>
<td>Enhance data security</td>
</tr>
<tr>
<td>Solution obvious</td>
<td>Was encryption known?</td>
</tr>
</tbody>
</table>
Example II

In an online sales system that supports user-to-user sales, a system for facilitating the ability for users to list products for sale to other users, the system comprising:

a browsable electronic catalog of products that includes functionality for users to make online purchases of products;

a purchase history tracking component that maintains purchase histories of users of the system, the purchase histories including identifiers of products purchased from the browsable electronic catalog; and
Example II (cont.)

a marketplace **listing creation component** that supports an ability for a user to specify a product to be listed for sale by selecting the product from an **electronic display** of at least a portion of the user's purchase history, as maintained by the purchase history tracking component, whereby the user may select a used product unit that was previously purchased from the **electronic catalog** and is currently in the user's physical possession, and add a listing within the **electronic catalog** for reselling the used product unit;

wherein the marketplace **listing creation component** further provides an option for the user to specify within the listing at least a current condition of the used product unit and a selling price for reselling the used product unit.
Example II:

Technical Aspects

A (computer) system comprising:

- implicitly a server, clients and data transmission;
- an electronic catalog;
- implicitly data bases (purchase history);

Non-Technical Aspects/ Process

Business process: sales system, purchase history, marketplace user-to-user for re-selling previously purchased products

no technical interaction
does not contribute to technical character

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

assessment of inventive step
Example II

Technical character: yes
Non-technical aspects: yes
Requirements specification: = business method: "user-to-user re-seller marketplace"

Closest prior art: computer system comprising a server, databases, and a terminal which are connected via a communication network

Differences: said business method
Skilled person: data processing expert

Objective technical problem: automate said business method on said computer system
Solution: implementation/ automation is considered obvious
Example II

Technical character: yes
Non-technical aspects: yes
Requirements specification: = business method: "user-to-user re-seller marketplace"

Closest prior art: E-commerce system

Differences: said business method

Skilled person: data processing expert
Objective technical problem: adapt E-commerce system to automate said business method on said computer system
Solution: implementation/ automation is considered obvious
Example II

- Application EP02776385, filed 16-04-2004

- Search Report issued 27-12-2005
  - Declaration meaningful search not possible Rule 45 EPC 1973

- First communication issued 28-01-2011, objection A.56

- Application withdrawn 31-10-2011
Example III

An **electronic catalog system**, comprising:

an **electronic catalog** of products; and

a **server system** that provides online access to the **electronic catalog** of products and provides **functionality** for users to purchase products from the **electronic catalog**:

wherein the **server system** is responsive to a request from a user for a page from the **electronic catalog** by supplementing the page with information about a related order placed by the user, said page being a catalog page that provides a user option to select a product for purchase, whereby users are presented with context-dependent information being displayed without requiring the users to explicitly request order history information.
Example III:

**Technical Aspects**

A (computer) system comprising:

- implicitly a server, clients and data transmission;
- an electronic catalog;
- implicitly data bases (purchase history);

**Non-Technical Aspects/ Process**

Business process: sales system, purchase history, present information of related orders placed by user

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

→ assessment of inventive step
### Example III

<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;context-related purchases&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>Differences:</td>
<td>said business method</td>
</tr>
<tr>
<td>Skilled person:</td>
<td>data processing expert</td>
</tr>
<tr>
<td>Objective technical problem:</td>
<td>automate said business method on said computer system</td>
</tr>
<tr>
<td>Solution:</td>
<td>implementation/ automation is considered obvious</td>
</tr>
</tbody>
</table>
Example III

Technical character: yes
Non-technical aspects: yes
Requirements specification: = business method: "context-related purchases"

Closest prior art: E-commerce system

Differences: said business method

Skilled person: data processing expert
Objective technical problem: adapt E-commerce system to automate said business method on said computer system
Solution: implementation/ automation is considered obvious
Example III

- Application EP1407408, filed with amended claims 18-12-2009
- Search Report issued 15-06-2004
  - Declaration meaningful search not possible Rule 45 EPC 1973
- Amended claims filed 17-08-2004 (cache and dynamic introduction of information to the web page introduced in claim 1)
- First communication issued 11-03-2005, objected on A.56
- Replied received on 20-06-2005
  - provide more efficient system and process defined as objective technical problem, Oral Proceedings requested
- Summons to Oral Proceedings issued 25-06-2008
  - A. 56 use of cache for improving efficiency well-known, dynamic generation web pages also known: obvious solution
- Application withdrawn 01-07-2008
Example III, amended claim 17-08-2004

A server system that provides online access to a browsable electronic catalogue of item, and provides functionality for users to order items from the electronic catalogues using computing devices that communicate with the server system over a network, the server system comprising a database that stores user-specific data descriptive or orders placed by users from the electronic catalogue, the server system characterised by:

a cache that temporarily stores data descriptive of orders previously placed by users that are currently browsing the electronic catalogue, including data retrieved from the database;

wherein the server system is programmed to respond to a request from an online user for a catalogue page that describes a catalogue item by at least (1) checking the cache for information about an order, previously placed by the user, that is related to the catalogue item, and (2) if the cache contains information about such a related order, dynamically incorporating the information about the related order into the catalogue page for presentation to the user;

whereby users are provided with personal, context-dependent information about previously placed orders during browsing of the electronic catalogue.
To bear in mind...

- Circumventing a technical problem rather than solving it by technical means cannot contribute to the technical character of the subject-matter claimed. *(T258/03; HITACHI)*

- A mere automation of constraints imposed by the purely non technical aspects, such automation using conventional hardware and programming methods is considered to be obvious to a skilled person. *(T172/03; RICOH)*

- Use of data processing means for processing or providing information of purely administrative, actuarial and/or financial character not inventive *(T931/95; PBS)*
To bear in mind....

- Presentation of information
  The task of designing diagrams is non-technical. This is so, even if the diagrams arguably convey information in a way which a viewer may intuitively regard as particularly appealing, lucid or logical (T125/04; CVA)

- A specific manner of representation does not contribute to inventive step if it is conceived exclusively with regard to a human being's mental capabilities and with a view to aiding a user to visually analyse data and make decisions on the basis of this analysis; it does not relate to any technical format or structure of the information processed, nor is it linked to the internal functioning of the system (T125/04; CVA)
What you should be looking for

A non-obvious technical contribution over the prior art in the technical field is necessary.

Those parts of the features making no technical contribution cannot indicate the presence of an inventive step.
A confirmed approach?

With respect to this approach towards exclusion from patentability and inventive step assessment,

- T154/04 (DUNS)

found that it has a "sound legal basis in the Convention and is consistent with the Case Law of the Boards of Appeal".
A confirmed approach?

With respect to this approach towards exclusion from patentability and inventive step assessment,

- The referral to the Enlarged Board of Appeal (G3/08)
  
  found no divergence of case law, but normal evolution and development of jurisprudence;

  noted that Art. 52 threshold indeed low, but doesn't mean that no influence on inventive step assessment;

  considered the approach to assess inventive step laid down in T154/04 appears to be a "practicable system for delimiting innovations for which a patent may be granted."
Thank you for your attention

More information:
www.epo.org
Declaration of "No Search"

Rule 63 (extract)

- European patent application does not comply with the provisions of the Convention to such an extent that ....

- **not possible** to carry out a **meaningful search** into the state of the art on the basis of all or some of the claims

- either ....
  - declare that search is not possible or
  - draw up a partial European search report.
Declaration of "No Search"

The examination is being carried out on the following application documents:

Text for the Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU MC NL PT RO SE SI SK TR HU

Description, pages:
1-29 as originally filed

Claims, No.:
1-29 as originally filed

Drawings, sheets:
1-17 as originally filed

1. Article 5(2) EPC

1.1 Independent Method Claim

a. Independent method claim 1 as

b. 

declaration under Rule 63

EPC: ESOP; Rule 62

PCT: Chapter I:
Art. 17(2) PCT and Rule 39.1 PCT

Chapter II:
Rule 70.2(d) PCT
No-Search:

- does relate to situation where a meaningful search cannot be carried out

- does not relate to the possible relevance of the results of the search in a possible later substantive examination

- Rule 63 (EPC2000) is considered as an exception situation.

- in the case of claims containing non-technical aspects:
  - Rule 63 applies only where there are no technical aspects in the entire claim set.
Annex: EPO search practice for CII

T1242/04

- Notorious general technical knowledge does not require documentary evidence.
  e.g. client/server; data files; general database technology.

- Such non-documented general technical knowledge can be used as closest prior art.
"No Document" search report

**SUPPLEMENTARY EUROPEAN SEARCH REPORT**

<table>
<thead>
<tr>
<th>DOCUMENTS CONSIDERED TO BE RELEVANT</th>
<th>Relevance to claim</th>
<th>CLASIFICATION OF THE APPLICANT (EPC)</th>
</tr>
</thead>
</table>

The claimed subject matter, with due regard to the description and drawings, relates to processes comprised in the list of subject matter and activities excluded from patentability under Art. 52(c) and (3) EPC. The applicant is advised that in accordance with the established practice of the EPPO, no search need be performed in respect of those aspects of the claimed invention. The only identifiable technical aspects of the claimed invention relate to the use of conventional, general-purpose data processing technology for processing data of an inherently non-technical nature. The information technology employed is considered to have been generally known as it was widely available to everyone at the date of filing/priority of the present application. The novelty of such prior art cannot reasonably be contested. No documentary evidence was therefore considered required.

The supplementary search report has been based on the last set of claims valid and available at the time of the search.

**CATEGORY OF CITED DOCUMENTS**
X: particularly relevant if taken alone
Y: particularly relevant if combined with another document of the same kind
Z: document cited in the application
D: document filed after the filing date
G: non-written disclosure
F: member of the same family, corresponding document