

Reliability of Patent Searches Based on Title or Abstract

AIDB – 1 Ottobre 2026

**Originally presented at: EPIP 2026 - AIDB Event
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9 September 2026**

Outline

- **The Value of Titles & Abstracts in Scientific Publications**
- Patent Titles: What Do the Rules Require?
 - (Non-)Conformity with the Regulations
- Patent Abstracts: What Do the Rules Require?
 - (Non-)Conformity with the Regulations
- Titles & Abstracts in Practice: Statistical Evidence
- A Patent Attorney's Confession
- Patent Titles & Abstracts: A Starting Point, Not the Whole Story

Titles and Abstracts in Scientific Publications

- Scientific **titles** and abstracts are often **the only freely accessible sections**.
- Full scientific articles often require subscription or payment.
- Scientific **abstracts** should be **stand-alone summaries** understandable without the full article.
- Editors use abstracts for **peer-review decisions and reviewer selection**.
- Readers use abstracts to decide whether to read the full paper.
- Titles and abstracts rely on keywords from the main manuscript sections.
- Conference abstracts help evaluate proposals for oral or poster presentations.

Type of Titles

- **Descriptive titles:** summarize the topic and study design without stating findings.
- **Declarative titles:** state the main finding or conclusion.
- **Interrogative titles:** present the research topic as a question.
- **Preferred approach:** **descriptive titles** are most common because they remain neutral and comprehensive.

Type of Abstracts

- Abstracts provide a concise summary of the full scientific article.
- A good abstract should be **clear, direct, specific, accurate, concise, unbiased, and self-contained**.
- It should convey the study's essential elements without being misleading or incomplete.
- Abstracts may be **structured** or **unstructured**.
- They may also be classified as **descriptive** or **informative**.

Structured and unstructured abstracts

- **Structured abstracts** are favored by many journals because they are more informative and easier to navigate.
- They use predefined subheadings such as **background**, **objectives**, **methods**, **results**, and **conclusions**.
- Their organization reflects the widely used **IMRAD** structure: **I**ntroduction, **M**ethods, **R**esults, and **D**iscussion.
- Structured abstracts support comprehension, peer review, and information retrieval.

Does Title Length Matter?

- **Shorter titles tend to have greater impact**
- **10 - 12 words** (50 - 90 characters) is often a good target
- **Some studies find a negative association between title length and:**
 - journal impact factor
 - citation count
 - novelty indicators
- Short titles can make the **main message clearer** and broaden the potential audience
- **Avoid unnecessary words:** long titles may dilute the message and make the research appear less focused

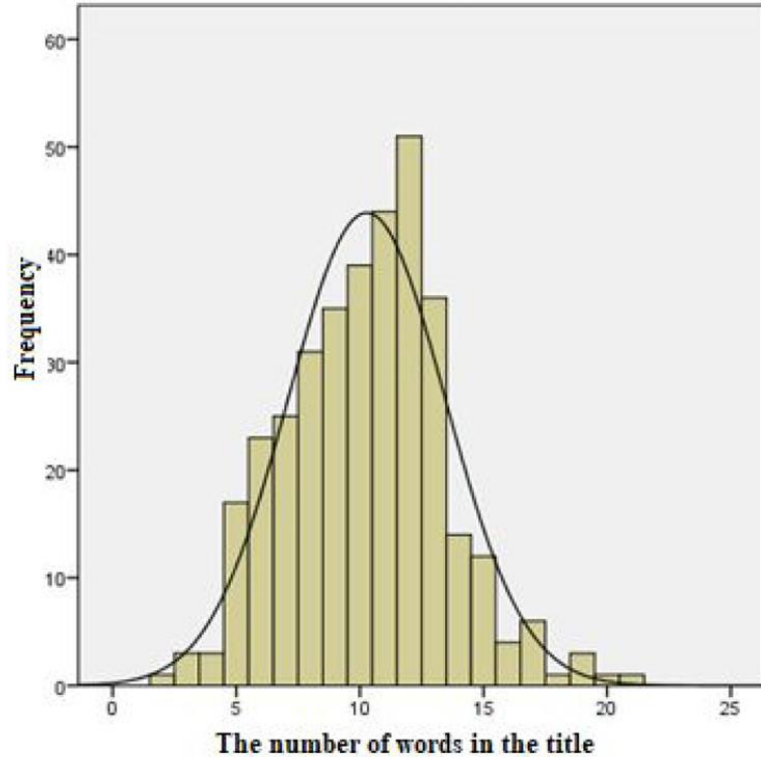
Say what the paper is about — but say it in as few words as possible.

What About the Abstract?

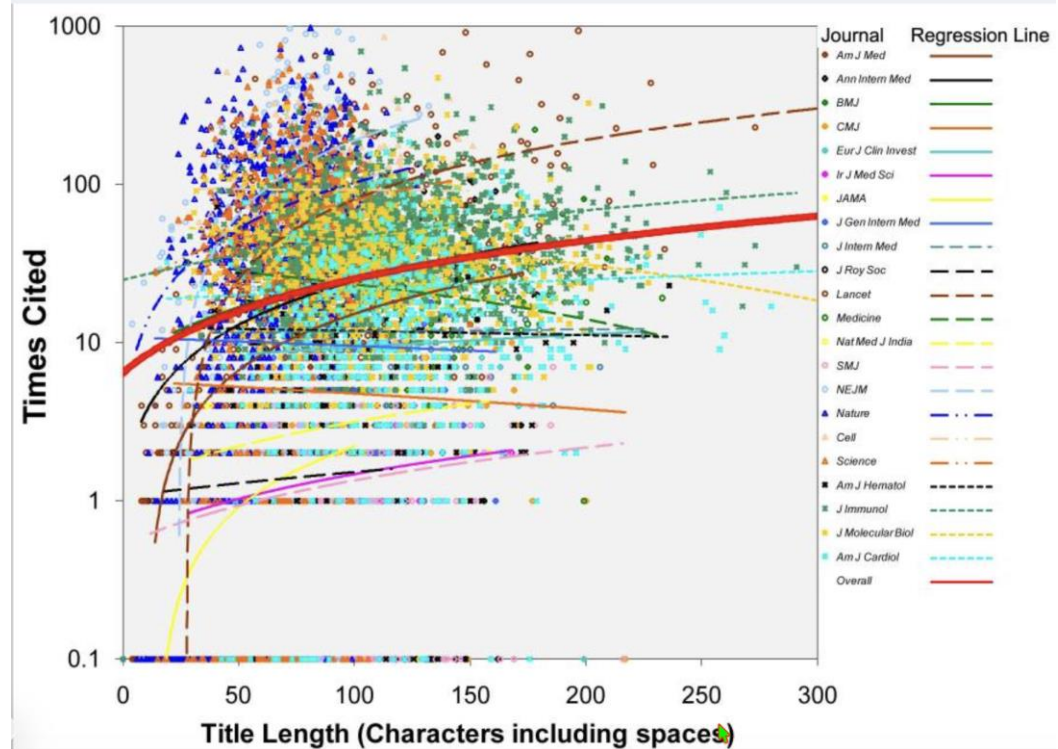
- **The abstract must balance information and brevity**
- Most journals require **150 - 250 words**
- It is often the **first and sometimes only text** a reader sees
- A good abstract should stand alone and clearly state:
 - **Problem:** What is the research question?
 - **Methods:** How was it investigated?
 - **Results:** What was found?
 - **Conclusion:** Why does it matter?
- **Rich terminology helps searchability:** specific, descriptive keywords can improve indexing and retrieval

The title gets attention; the abstract earns the reader's interest.

Title Length vs Citations

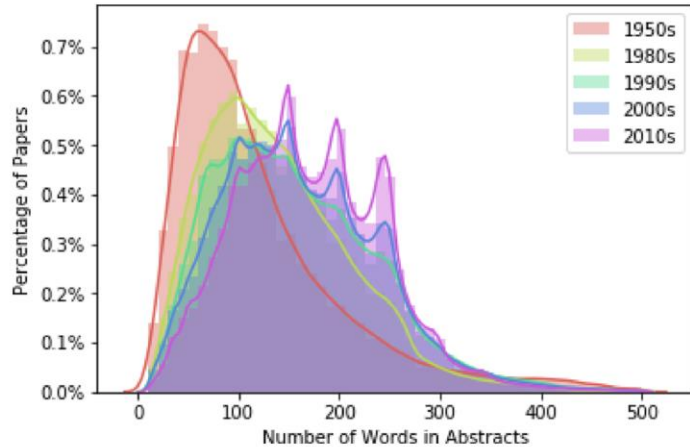


<https://journals.sagepub.com/doi/10.1177/21582440251320538>

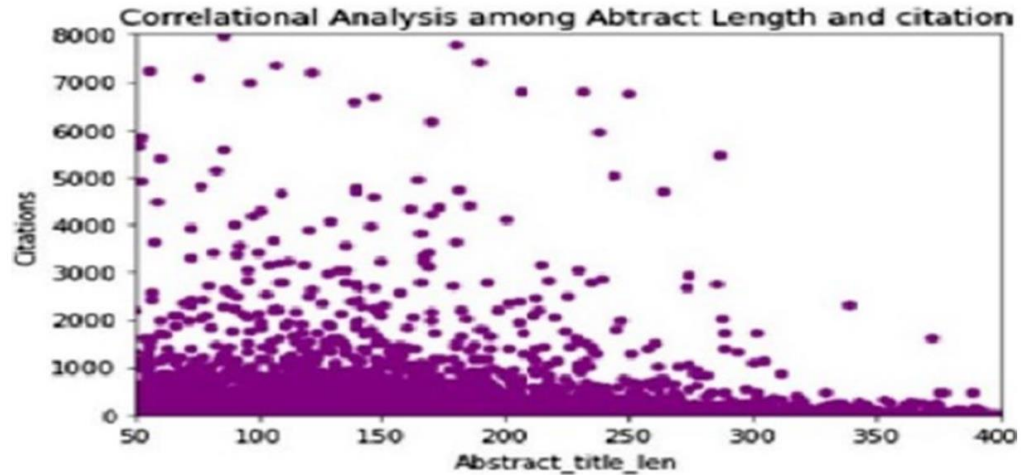


<https://pmc.ncbi.nlm.nih.gov/articles/PMC2859422/>

Abstract Length vs Citations



<https://academic.oup.com/gigascience/article/8/6/giz053/5506490>



<https://link.springer.com/article/10.1007/s10462-023-10657-3>

Title & Abstract: Do They Matter as Much in Patents?

- All this shows that, in the scientific and research community, the **Title and Abstract of a publication are paramount.**
- **Scientists and researchers may therefore assume that they carry the same weight in a patent document.**
- **But do they?**
- **And what weight do the Title and Abstract actually carry in patent documents?**

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 - **(Non-)Conformity with the Regulations**
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Scope of protection defined by Claims

European Patent Convention

Article 69 Extent of protection

(1) The extent of the **protection** conferred by a European patent or a European patent application shall be **determined by the claims**. Nevertheless, the **description** and **drawings** shall be used to interpret the claims.

...

Article 83 Disclosure of the invention

The European patent application shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Scope of protection defined by Claims

United States Code Title 35 – Patents

35 U.S.C. § 112 Specification

- (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.
- (b) CONCLUSION.—The specification shall conclude with one or more **claims** particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor **regards as the invention**.
- (c) ...

Titles according WIPO

- [WIPO Standard ST.15 \(Guidelines for the Wording of Titles of Inventions in Patent Documents\)](#), indicates that the **title of an invention** should be **meaningful** and should clearly and concisely indicate the **subject to which the invention relates**.
- When claims belong to different categories—such as **product, process, apparatus, or use**—this should ideally be reflected in the title.
- The Guidelines discourage the use of certain expressions, including the word “**patent,**” **personal names, trade names, trademarks,** and **vague expressions such as “etc.”**

Titles according WIPO: an Exception!

- In some jurisdictions, **patent titles are published before the full application**, typically about 18 months after filing or priority.
- Applicants may therefore **use generic titles to minimize early disclosure** of technical details or strategic R&D directions, particularly if the application may later be withdrawn or refined.
- Consequently, as the WIPO Standard itself recognizes, *“If that is the case, the said industrial property offices may choose not to apply these Guidelines for this kind of title.”*

[US2005124393A1](#) Mobile telephone – Nokia Corp.

Titles according to EPO

- [EPO Guidelines for Examination](#) state that “*the sole purpose of the title is to inform the public about the technical information disclosed in the application. The title has no bearing on the content of the application as filed or on the protection conferred by the patent, once granted.* Furthermore, the title is not part of the documents to be approved by an applicant before a patent can be granted.
- Thus, the **ultimate responsibility** for the title (in the three official EPO languages) rests **with the division**, and it is within the division's discretion to accept or not any request from the applicant for a change in the title and/or to modify it on its own volition.”
- [Rule 41\(2\)\(b\) EPC](#) requires that *the title must clearly and concisely state the technical designation of the invention and must exclude all fancy names.*

Titles according to EPO

EPO Guidelines go further prescribing that:

- i. ***personal names, fancy names, the word "patent" or similar terms of a non-technical nature that do not serve to identify the invention should not be used***
- ii. *the abbreviation "**etc.**", being vague, should not be used and should be replaced by an indication of what it is intended to cover*
- iii. *titles such as "**Method**", "**Apparatus**", "**Chemical Compounds**" alone or similar vague titles do not meet the requirement that the title must clearly state the technical designation of the invention*
- iv. ...

Titles according to USPTO

- The Manual of Patent Examining Procedure (MPEP), [606 Title of Invention \[R-10.2019\] 37 CFR 1.72 Title and abstract](#) , indicates that the title of an invention may not exceed 500 characters and should be as short, specific, **and technically descriptive as possible**. The title is expected to be brief while accurately reflecting the technical subject matter of the invention.
- The MPEP also identifies a number of expressions that are not considered part of the invention title and therefore should not appear at its beginning. Such expressions are automatically deleted by the USPTO. (***A, An, The, Improved, Improvement(s) in/for/of, New, Novel, Related to, Design, Design for/of (a), Ornamental design, Ornamental***)
- The term “new” is not deleted when it forms part of a proper name, such as “New York.” Similarly, the term “design” is retained when it appears as part of a compound expression, such as “Design-aiding apparatus.”

A Generic Patent Title: **Filter**

[US2019076057A1](#) **FILTER** - IPC A61B5/08

[US12451868B2](#) **Filter** - H03H11/04

[US5620505A](#) **Filter** - IPC B01D27/06

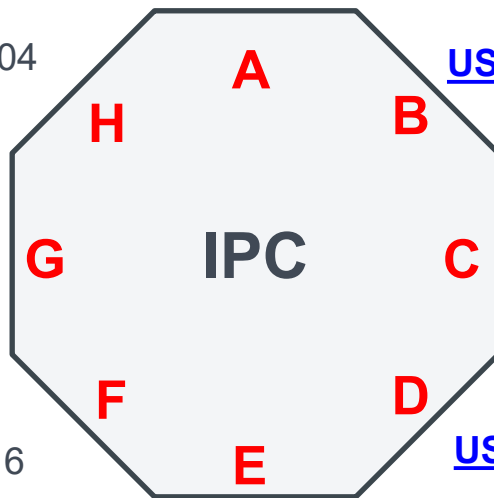
[DE1772704A1](#) **Filter** - IPC G02B27/46

[GB2291054A](#) **Filter** - IPC C02F3/04

[EP0999363A1](#) **Filter** – IPC F02M61/16

[US3006477A](#) **Filter** – IPC D06F39/10

[KR101225447B1](#) **FILTER** – IPC E03C1/26



A **filter** is a device, process, or mathematical concept that separates, removes, or blocks unwanted components, particles, or signals while allowing desired elements to pass through

Patent Titles: (Non-)Conformity with the Regulations

- [EP0207680B1](#) **CHEMICAL COMPOUNDS**
- [EP0239321B1](#) **CHEMICAL COMPOUND**
- [WO8500997A1](#) **METHOD AND APPARATUS FOR CLEANING PIPES, TUBES, ETC.** and in the granted EP patent: [EP0152439B1](#) **METHOD AND APPARATUS FOR CLEANING PIPES, TUBES, ETC.**
- [US2019160120A1](#) **DNA, METHODS ETC**
- [WO2019238713A2](#) **TREATMENTS ETC** the title was amended in the A3 publications [WO2019238713A3](#) **ANTAGONISTS AND AGONISTS OF THE TRANSFERRIN RECEPTOR-2 FOR USE IN THE TREATMENT OF DISEASES OF THE BONE**
- ETC can also appear as an acronym “Easy-to-Clean”:
[US2024058840A1](#) **DEPOSITION OF ETC MATERIALS ONTO SUBSTRATES VIA INKJET PRINTING**

Patent Titles: (Non-)Conformity with the Regulations

- [WO2016189329A1](#) **NEW PRODUCT** ⇒ [US2018146683A1](#) **NEW PRODUCT** ⇒ [US11019825B2](#) **Product**
- [WO2017050864A1](#) **NEW COMPOUNDS** ⇒ [US2020255430A1](#) **NEW COMPOUNDS** ⇒ [US11155555B2](#) **Compounds** ⇒ [EP3353177B1](#) **TRICYCLIC HETEROCYCLES FOR THE TREATMENT OF CANCER**
- [WO2011089461A1](#) **PATENT SCORING AND CLASSIFICATION**
- [WO2006015110A2](#) **PATENT MAPPING**
- [WO2016141423A1](#) **A PROCESS, A STRUCTURE, AND A SUPERCAPACITOR** ⇒ [US2018247772A1](#) **A PROCESS, A STRUCTURE, AND A SUPERCAPACITOR** ⇒ [US10910165B2](#) **Process, a structure, and a supercapacitor**
- [WO2022129287A1](#) **A METHOD** ⇒ [US2024003790A1](#) **A METHOD** ⇒ [US12436071B2](#) **Method**

Title for inventions of both entities and activities

The following European patents relate to both **systems and methods**, although their titles refer exclusively to one of these categories.

- [EP3200345B1](#) AMPLIFIER CIRCUIT FOR AMPLIFYING AN OUTPUT SIGNAL OF A CAPACITIVE SENSOR
- [EP0589574B1](#) An amplifier control system
- [EP2257629B1](#) METHOD FOR AMPLIFYING LOCUS IN BACTERIAL CELL
- [EP2402417B1](#) METHOD FOR COLLECTING HYDROCARBON

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The Role and Limitations of Patent Abstracts

- **Purpose:** Concise technical summary to help users quickly assess an invention's relevance.
- **No legal effect:** The claims define the scope of protection; **the abstract is for information only.**
- **May become outdated:** In some patent systems (including the European, French, British and German ones), the abstract is published only with the application and may **not reflect amendments made during examination**, particularly to the claims at grant.
- **Limited incentive for accuracy:** Since abstracts have **no legal significance**, they may not fully represent the **final claimed invention**.

Abstract according to WIPO

- According to WIPO Standard ST.12 (Guidelines for the Preparation of Abstracts of Patent Documents) and related standards (ST.12/A GENERAL GUIDELINES FOR THE PREPARATION OF ABSTRACTS OF PATENT DOCUMENTS and ST.12/B GUIDELINES FOR THE PREPARATION OF CATEGORIZED PATENT ABSTRACT), the abstract should enable readers—regardless of their familiarity with patent documents—to quickly **understand the technical nature of the disclosed subject matter**.
- The abstract is intended to function as an **efficient scanning tool** for patent searches, allowing readers to determine whether consultation of the full document is necessary.

Abstract according to WIPO

▪ Rule 8 of the Regulations under the PCT - The Abstract

(a) *The abstract shall consist of the following:*

(i) *a summary of the disclosure as contained in the description, the claims, and any drawings; the summary shall indicate the technical field to which the invention pertains and shall be drafted in a way which allows the clear understanding of the **technical problem**, the gist of the **solution** of that problem through the invention, and the principal **use** or uses of the invention;*

(b) *The abstract shall be as concise as the disclosure permits (preferably **50 to 150 words** if it is in English or when translated into English).*

(c) *The abstract shall not contain statements on the alleged merits or value of the claimed invention or on its speculative application.*

Abstract according to WIPO

- According to the WIPO Guidelines *“Phrases should not be used which can be implied, such as **“This disclosure concerns”, “The invention defined by this disclosure” and “This invention relates to”**. The **legal phraseology used in patent claims** often employing such words as **“said” and “means” should also be avoided.**”*
- The search in Espacenet in the field “abstract” of these wordings returns more than **8 million patent families**.
- Aa quick scan of these abstracts show they are merely **a copy or a slight adaptation of Claim 1**.

Abstract according to EPO

[European Patent Guide – How to get a European patent](#), “*The abstract merely **serves for use as technical information. It may not be taken into account for any other purpose**, ... It must be so drafted that it constitutes an efficient instrument for searching in the particular technical field and for evaluating whether it is worth considering the whole content of the application.*

*The abstract, which must be preceded by the title of the invention, must contain a concise summary (**preferably no more than 150 words long**) of the disclosure as contained in the description, claims and drawings. It should indicate the technical field to which the invention relates, unless that is already clear from the title, and should be so drafted as to **allow a clear understanding of the technical problem, the gist of the solution of that problem through the invention and the principal use of the invention.**”*

Abstract according to USPTO

37 CFR § 1.72 Title and abstract.

...

*(b) A brief abstract of the technical disclosure in the specification must commence on a separate sheet, preferably following the claims, under the heading “Abstract” or “Abstract of the Disclosure.” ... The abstract must be as concise as the disclosure permits, **preferably not exceeding 150 words in length**. The purpose of the abstract is to enable the Office and the public generally to **determine quickly from a cursory inspection the nature and gist of the technical disclosure**.*

Abstract according to USPTO

MPEP in [608.01\(b\) Abstract of the Disclosure \[R-01.2024\]](#) gives further guidelines on the content of the function of the abstract:

...

*The content of a patent abstract should be such as to **enable the reader** thereof, regardless of his or her degree of familiarity with patent documents, **to determine** quickly from a cursory inspection of the abstract the nature and **gist of the technical disclosure and that which is new in the art to which the invention pertains.***

– Content

*A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. **The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.***

Abstract according to USPTO

- *If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure.*

...

- *Where applicable, the abstract should include the following:*
 - (1) if a machine or apparatus, its organization and operation;*
 - (2) if an article, its method of making;*
 - (3) if a chemical compound, its identity and use;*
 - (4) if a mixture, its ingredients;*
 - (5) if a process, the steps. Extensive mechanical and design details of apparatus should not be included in the abstract.*

- ...

Patent Abstracts: (Non-)Conformity with the Regulations

- Patent abstracts are often **identical or very similar to the first claim**
- The abstract of [EP3200345A1](#) (*Amplifier circuit for amplifying an output signal of a capacitive sensor*) closely reproduces Claim 1 as originally filed.
- During examination, however, the granted claim [EP3200345B1](#) amended to incorporate **additional features** from dependent claims, which were **not reflected in the abstract**.
- Furthermore, the abstract **does not indicate** that the invention also relates to a **corresponding amplification method**, even though the patent description and **claims address both a circuit and a method**.

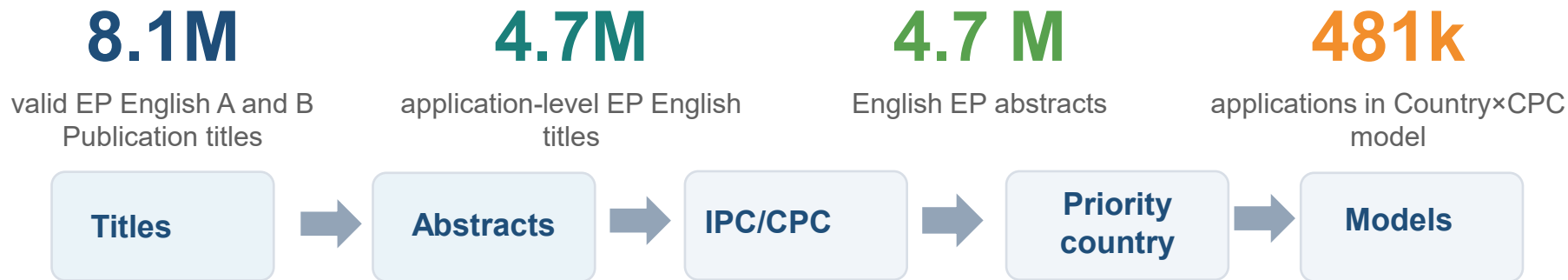
Patent Abstracts: (Non-)Conformity with the Regulations

- [WO02091567A2](#) **AMPLIFIER** whose abstract, essentially a copy of Claim 1, states: *“A re-circulating amplifier comprising a SAW filter with group delay characteristics for providing a time delay function.”*
- In the corresponding granted U.S. patent, [US6940347B2](#) **Amplifier**, Claim 1 was amended to incorporate additional features, including a sampling amplifier and multiple signal passes through the amplifier and SAW filter to achieve high net gain.
- Abstract **remained unchanged** and therefore **does not reflect the additional technical features that supported the grant**.
- **N.B.** The title is deliberately kept **“minimalistic”** because the priority application was filed in the UK, where the title may become publicly available before the subsequent patent application is published. The applicant may therefore have an incentive to keep the title as concise and non-revealing as possible.

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What was analyzed: PATSTAT via TIP



Patent titles and abstracts

~8

mean words in EP English titles

~119

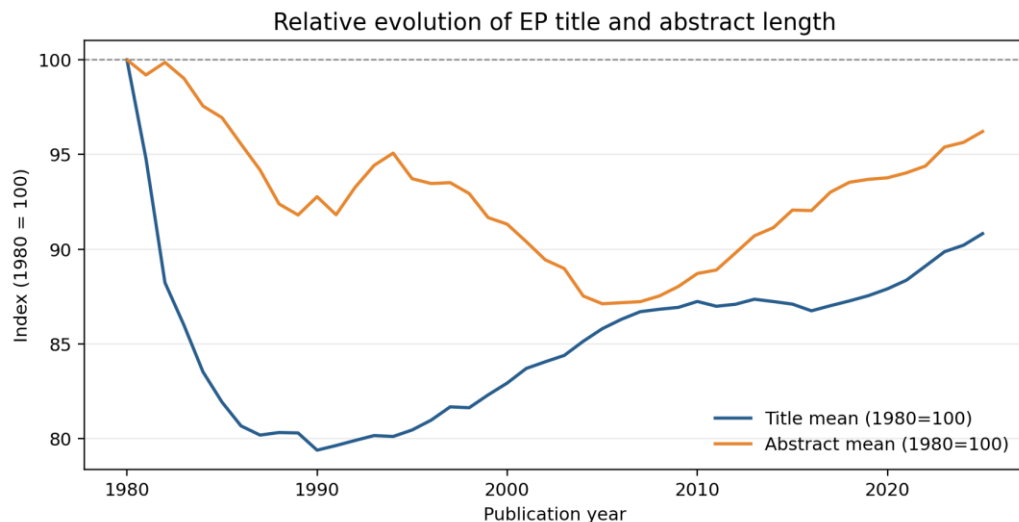
mean words in EP English abstracts

149

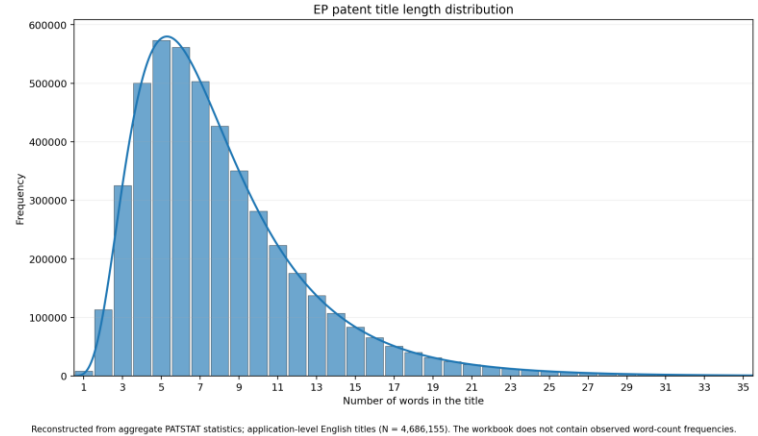
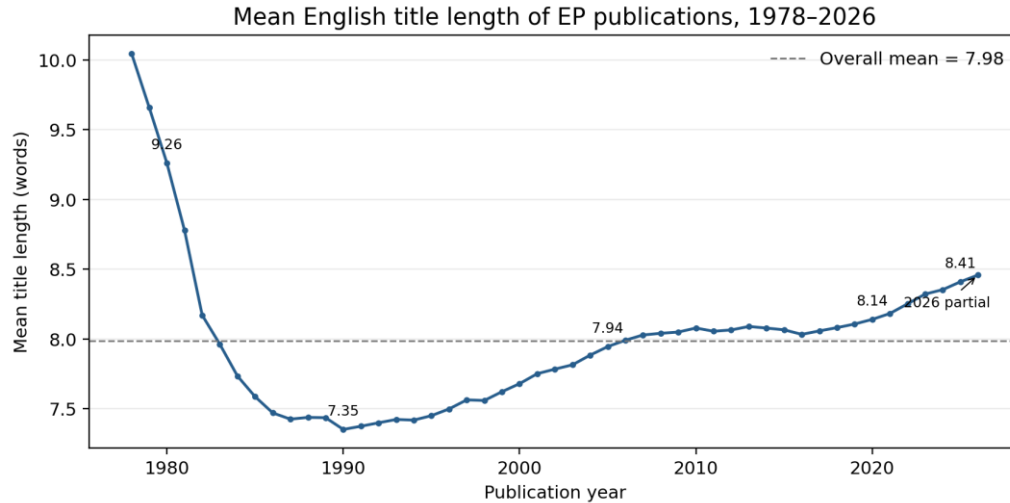
abstract P75: close to 150-word
guidance

7%

Best-model CV $R^2 \approx 7\%$

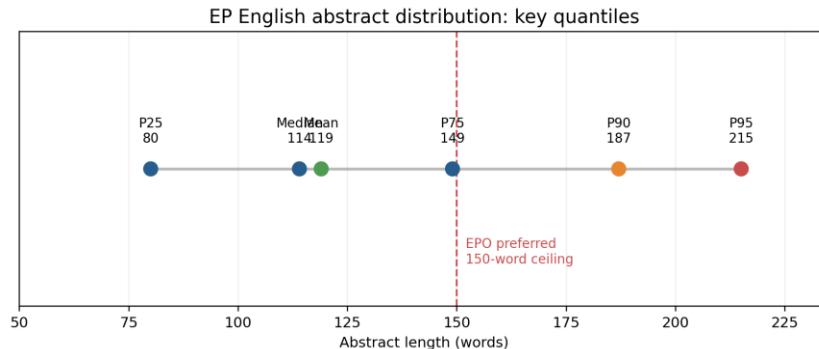
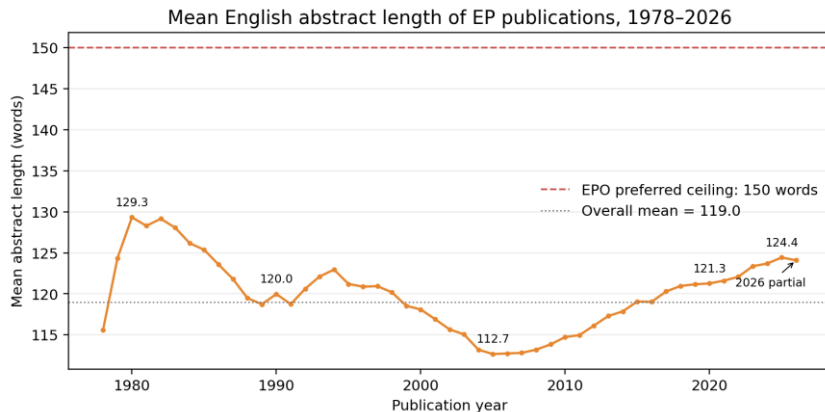


EP title length: short and changing over time

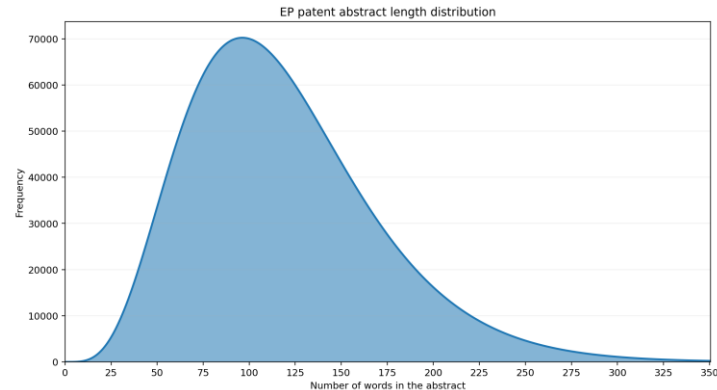


- Mean English EP title length is about 8 words overall
- The median is 7 words; the middle 50% is about 5–10 words.
- The trend is non-linear: titles shortened, then gradually lengthened again.

EP abstract length: clusters to formal compression limits

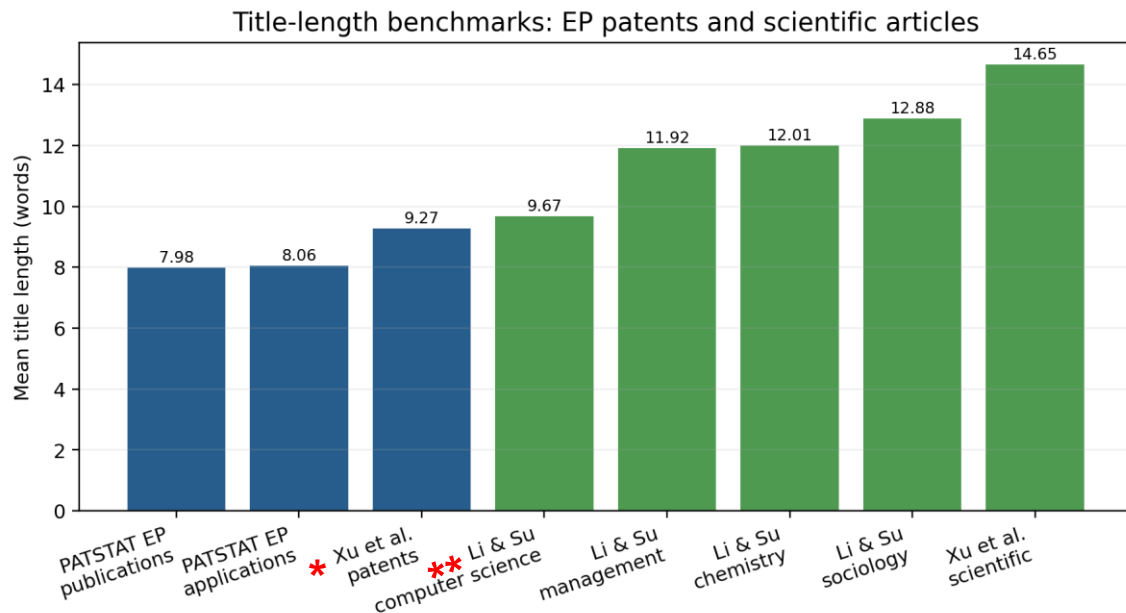


- Mean EP English abstract length is about 119 words.
- The median is about 114 words.
- The 75th percentile is close to 149 words, near the common 150-word preference.



Reconstructed from aggregate PATSTAT statistics: English EP abstracts at publication level (N = 8,395,055). The workbook does not contain observed word-count frequencies.

Titles: EP Patents vs Scientific Publications



- EP patent titles cluster near eight words on average
- Scientific article titles are typically longer in the cited benchmarks
- The comparison is cross-dataset, not matched patent-publication pairs

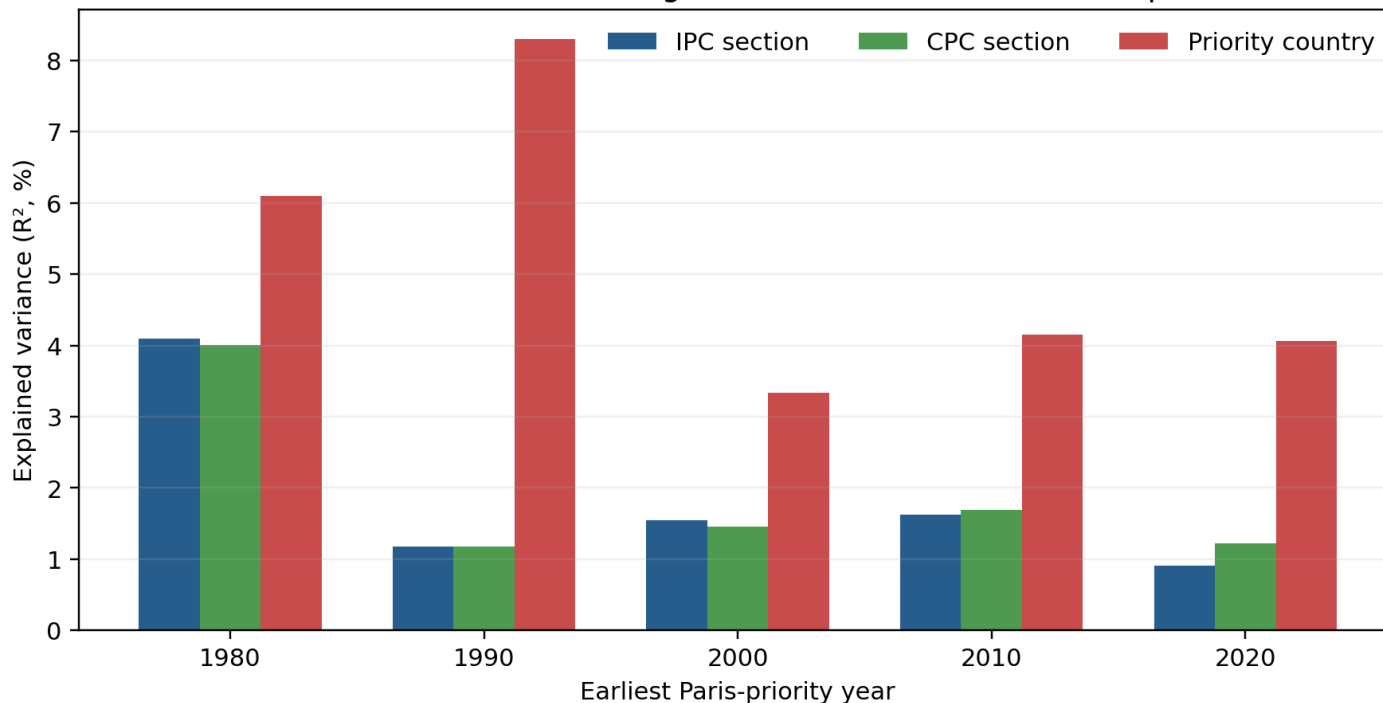
Title length is a signal of drafting context, not a measure of quality

* <https://doi.org/10.1007/s11192-021-04085-9>

** <https://dl.acm.org/doi/abs/10.1007/s11192-025-05507-8>

Technology and country both matter — but not equally

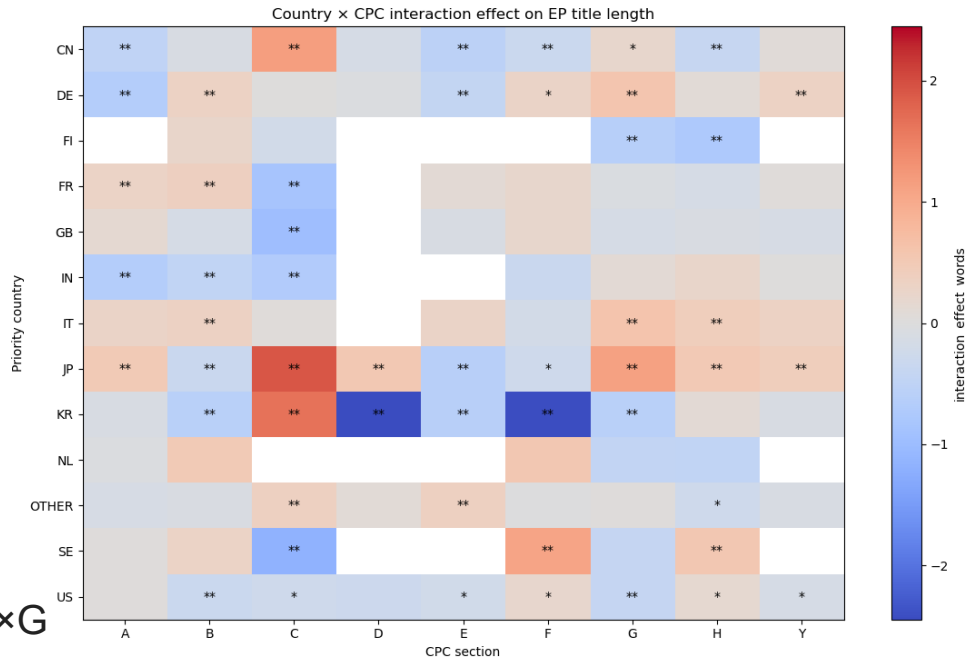
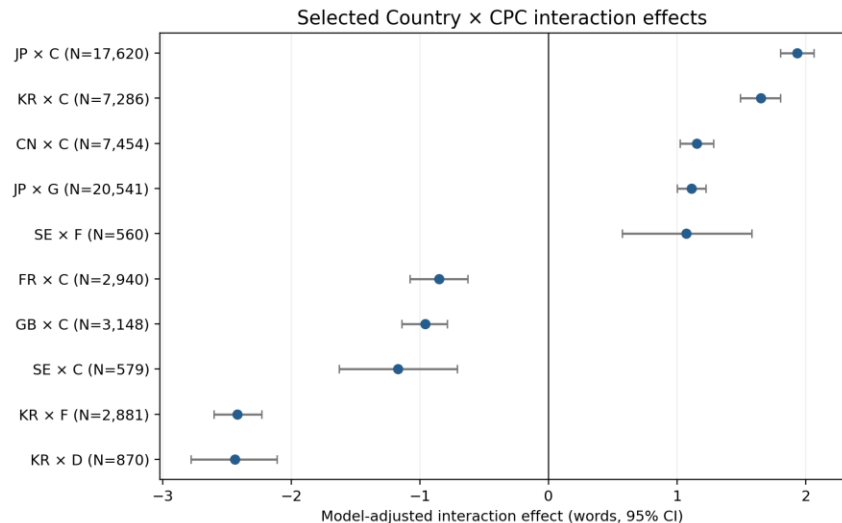
Association with EP title length across historical PROD snapshots



Large samples make small differences statistically visible. R^2 is used here to judge practical strength

Priority country matters more than broad technology, but neither factor explains most of the variation in patent-title length.

Which combinations stand out?



Longer than expected: JP×C, KR×C, CN×C, JP×G

Shorter than expected: KR×D, KR×F, SE×C, GB×C, FR×C

CPC C shows the clearest geographic heterogeneity.

What these data indicate?

- **Title length is associated with drafting context, not just invention content.**
- Country effects may reflect original language, applicant practice, national-regional-international filing route, attorney conventions and translation.
- Technology effects at section level are real but broad and relatively weak.
- Interactions show that drafting patterns are technology-dependent within countries.
- Practical warning: title/abstract-only patent searches may have country-technology biases.

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How Patent Title and Abstract are actually drafted

... “the way how title and abstract are generated from my practitioner viewpoint is very straightforward: **The title corresponds to the subject line of the independent claims**, because this is the way we never have a problem in China with title amendments by the examiner (can’t tell whether it actually has to be like that, but in any case it’s a pragmatic way to avoid unnecessary trouble). As a result, **we have pretty content-free titles** – unfortunately. Further, the **abstract is simply claim 1** because also this approach **does not cause any issues with the offices**, and since the abstract is sort of useless for our future work (=>A123(2) EPC), **no client is willing to pay us to spend time on it.**”

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Patent Titles & Abstracts: A Starting Point, Not the Whole Story

- **Limited technical specificity of patent titles**
 - Patent titles may be extremely short or highly generic, sometimes consisting of a single word.
 - They may therefore provide insufficient information to identify the technical nature of the invention.
- **Incomplete representation of the invention**
 - Titles and abstracts may not fully reflect all categories of subject matter disclosed in a patent document.
 - These may include:
 - **Entities:** devices, apparatuses, systems, compounds, etc.
 - **Activities:** methods, processes, uses, services, etc.
 - Search strategies should therefore include both **noun-based and verb-based keywords**, together with relevant morphological variations.
 - Where supported by the search interface, truncation can be used to capture such variations, e.g. **amplif*** for *amplifier, amplification, amplify, amplified*, etc.

Patent Titles & Abstracts: A Starting Point, Not the Whole Story

- **Variability within patent families**

- Different publications belonging to the same patent family may contain different titles and abstracts.
- Such differences may result from variations in drafting practices and requirements across jurisdictions.
- Searches should therefore extend, where appropriate, to the **full patent family** to reduce the risk of overlooking relevant documents.

- **Titles and abstracts are useful, but not sufficient**

- Searches based exclusively on titles and abstracts generally provide only a **preliminary overview** of a technological field.
- They are useful for: initial orientation; identifying potential areas of interest; developing more comprehensive search strategies.
- They should **not be relied upon as the sole basis** for: exhaustive prior-art identification; in-depth patent analysis; comprehensive technological or scientific studies.

Patent Titles & Abstracts: A Starting Point, Not the Whole Story

- **Reasons for these limitations**

- Patent titles and abstracts have specific **legal and informational functions**.
- Drafting practices and requirements vary across jurisdictions.
- Their informational density is generally lower than that of scientific publications.
- Consequently, titles and abstracts may not adequately represent the **full technical scope of the invention** disclosed in the patent document.

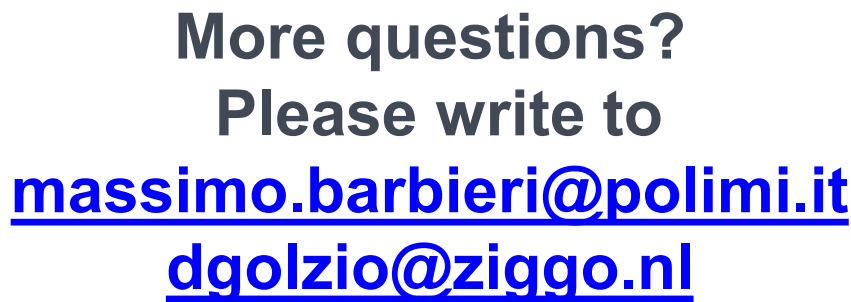
- **Additional sources of patent information**

- For more comprehensive and reliable searches, the following elements should also be considered:
 - **Bibliographic data:** applicants, inventors, filing dates, priority information, etc.
 - **Patent classification:** particularly **IPC** and **CPC**.
 - **Full description.**
 - **Claims.**
 - **Drawings**, where relevant.

Patent Titles & Abstracts: A Starting Point, Not the Whole Story

- **Integrated search strategy**

- A comprehensive patent search requires the **integration of multiple sources of information** into a coherent search strategy.
- Combining textual, bibliographic, classification and substantive information can improve the:
 - **completeness** of search results;
 - **consistency** of the analysis;
 - **reliability** of the findings.
- Such an integrated approach provides a more robust basis for both **legal and scientific activities**.



Thank you!!

