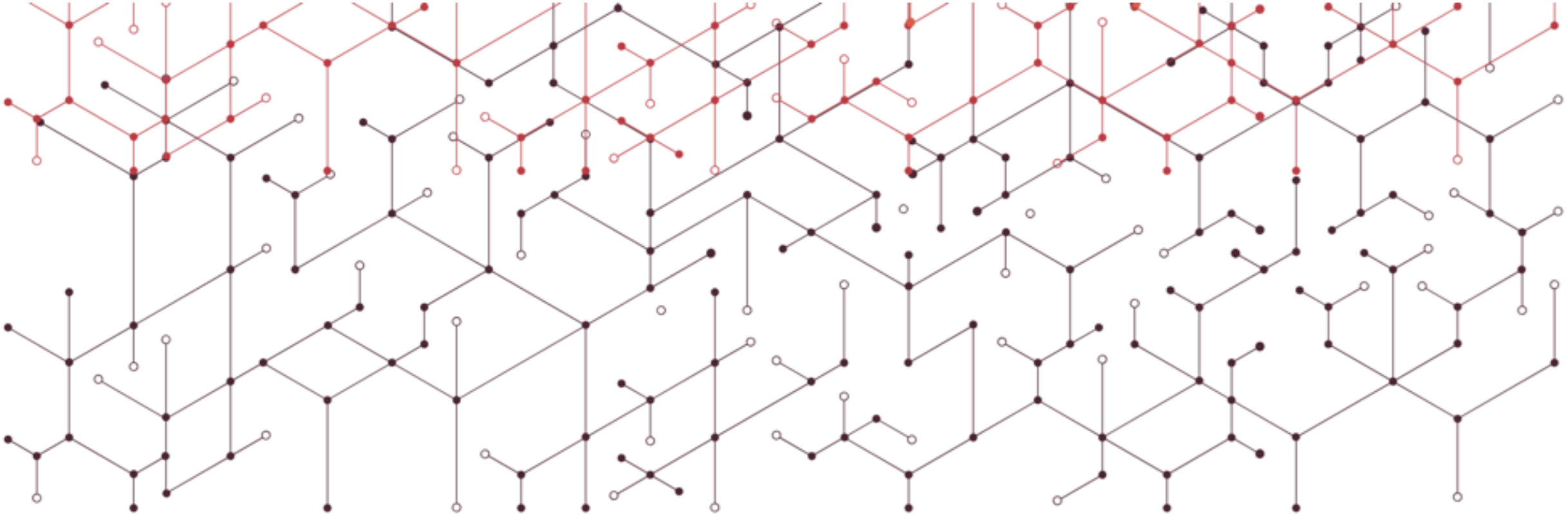


Technology, IP & Startups

Ash Ravikumar
Entrepreneurship Development Officer

What is IP?
Why is it important?

What is IP?

What is Intellectual Property?

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.

Types of IP

- Patents
- Copyrights
- Trademarks
- Trade secrets
- Geographic Indicators

Patents

Requirements

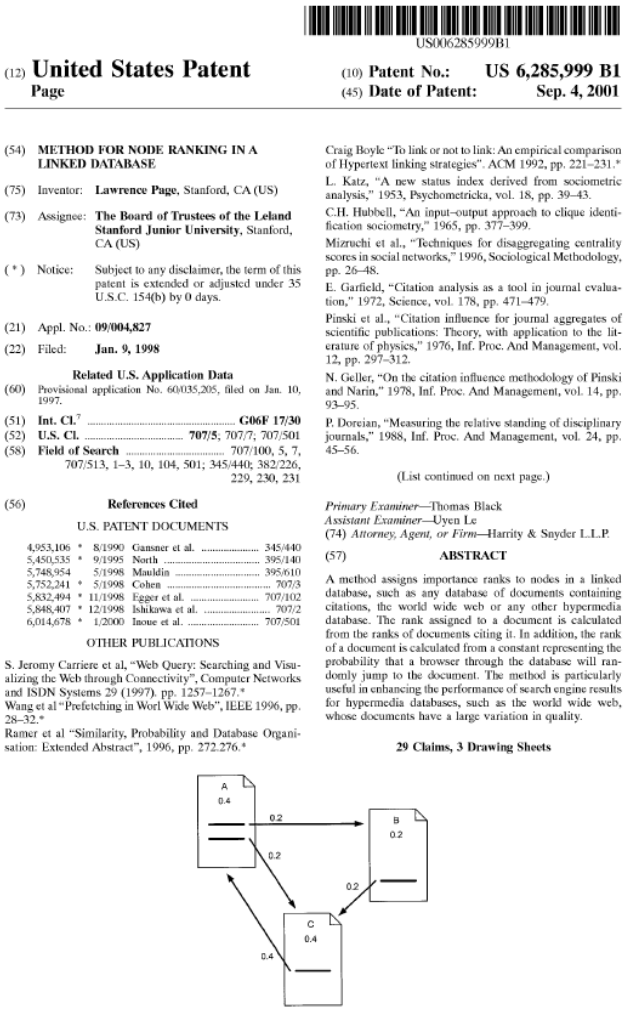
Novel

Inventive

Utility

Validity

20 years from issue



US006285999B1

(12) **United States Patent**
Page

(10) **Patent No.: US 6,285,999 B1**
(45) **Date of Patent: Sep. 4, 2001**

(54) **METHOD FOR NODE RANKING IN A LINKED DATABASE**

(75) Inventor: **Lawrence Page**, Stanford, CA (US)

(73) Assignee: **The Board of Trustees of the Leland Stanford Junior University**, Stanford, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/004,827**

(22) Filed: **Jan. 9, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/035,205, filed on Jan. 10, 1997.

(51) **Int. Cl.**[7] **G06F 17/30**

(52) **U.S. Cl.** **707/5**; 707/7; 707/501

(58) **Field of Search** 707/100, 5, 7, 707/513, 1–3, 10, 104, 501; 345/440; 382/226, 229, 230, 231

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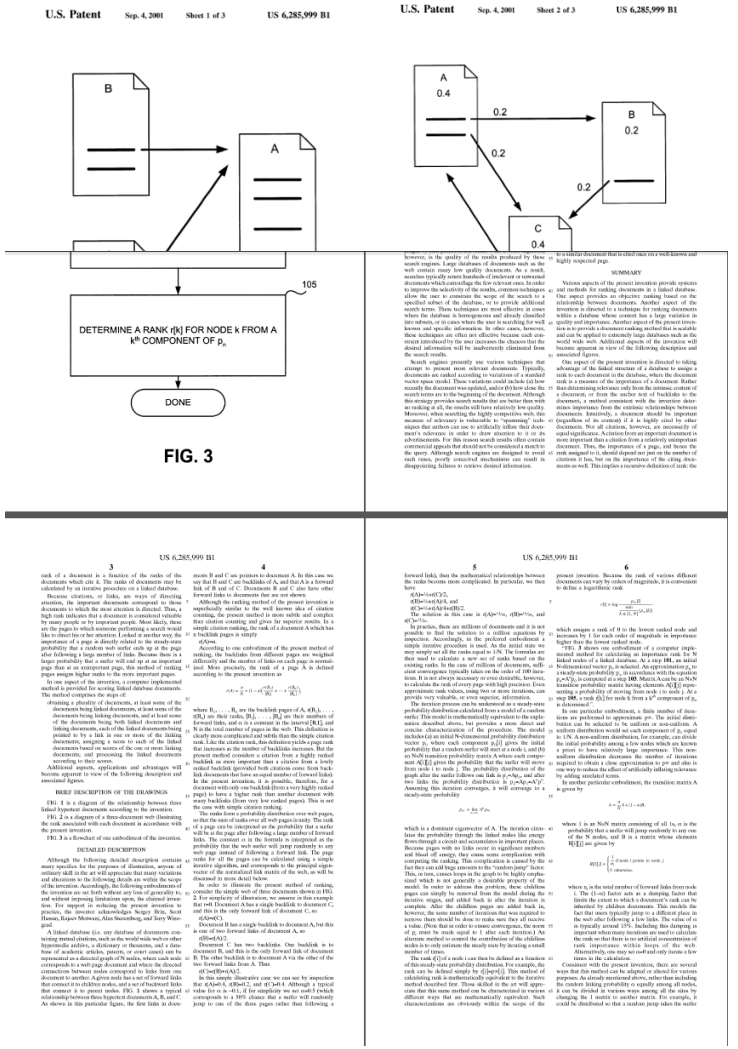
(74) *Attorney, Agent, or Firm*—Harrity & Snyder L.L.P.

(57) **ABSTRACT**

A method assigns importance ranks to nodes in a linked database, such as any database of documents containing citations, the world wide web or any other hypermedia database. The rank assigned to a document is calculated from the ranks of documents citing it. In addition, the rank of a document is calculated from a constant representing the probability that a browser through the database will randomly jump to the document. The method is particularly useful in enhancing the performance of search engine results for hypermedia databases, such as the world wide web, whose documents have a large variation in quality.

29 Claims, 3 Drawing Sheets



Patents - claims

It will be clear to one skilled in the art that the above embodiments may be altered in many ways without departing from the scope of the invention. Accordingly, the scope of the invention should be determined by the following claims and their legal equivalents.

What is claimed is:

1. A computer implemented method of scoring a plurality of linked documents, comprising:

obtaining a plurality of documents, at least some of the documents being linked documents, at least some of the documents being linking documents, and at least some of the documents being both linked documents and linking documents, each of the linked documents being pointed to by a link in one or more of the linking documents;

assigning a score to each of the linked documents based on scores of the one or more linking documents and

processing the linked documents according to their scores.

2. The method of claim 1, wherein the assigning includes:

identifying a weighting factor for each of the linking documents, the weighting factor being dependent on the number of links to the one or more linking documents, and

adjusting the score of each of the one or more linking documents based on the identified weighting factor.

3. The method of claim 1, wherein the assigning includes:

identifying a weighting factor for each of the linking documents, the weighting factor being dependent on an estimation of a probability that a linking document will be accessed, and

adjusting the score of each of the one or more linking documents based on the identified weighting factor.

4. The method of claim 1, wherein the assigning includes:

identifying a weighting factor for each of the linking documents, the weighting factor being dependent on the URL, host, domain, author, institution, or last update time of the one or more linking documents, and

adjusting the score of each of the one or more linking documents based on the identified weighting factor.

5. The method of claim 1, wherein the assigning includes:

identifying a weighting factor for each of the linking documents, the weighting factor being dependent on whether the one or more linking documents are selected documents or roots, and

adjusting the score of each of the one or more linking documents based on the identified weighting factor.

6. The method of claim 1, wherein the assigning includes:

identifying a weighting factor for each of the linking documents, the weighting factor being dependent on the importance, visibility or textual emphasis of the links in the one or more linking documents, and

adjusting the score of each of the one or more linking documents based on the identified weighting factor.

7. The method of claim 1, wherein the assigning includes:

identifying a weighting factor for each of the linking documents, the weighting factor being dependent on a particular user's preferences, the rate at which users access the one or more linking documents, or the importance of the one or more linking documents, and

adjusting the score of each of the one or more linking documents based on the identified weighting factor.

8. A computer implemented method of determining a score for a plurality of linked documents, comprising:

obtaining a plurality of linked documents;

selecting one of the linked documents;

assigning a score to the selected document that is dependent on scores of documents that link to the selected document; and

processing the linked documents according to their scores.

9. A computer implemented method of ranking a plurality of linked documents, comprising:

processing the linked documents according to their updated ranks.

10. A computer implemented method of ranking a plurality of linked documents, comprising:

automatically performing a random traversal of a plurality of linked documents, the random traversal including selecting a random link to traverse in a current linked document;

for each linked document that is traversed, assigning a rank to the linked document that is dependent on the number of times the linked document has been traversed; and

processing the plurality of linked documents according to their rank.

11. The method of claim 10, wherein there is a predetermined probability that the next linked document to be traversed will be a random one according to a distribution of the plurality of linked documents.

12. The method of claim 1, wherein the processing includes:

displaying links to the linked documents as a directory listing.

13. The method of claim 1, wherein the processing includes:

displaying links to the linked documents, and

displaying annotations representing the score of each of the linked documents.

14. The method of claim 13, wherein the annotations are bars, icons, or text.

15. The method of claim 1, further comprising:

processing the linked documents based on textual matching.

16. The method of claim 15, wherein the textual matching includes matching anchor text associated with the links.

17. The method of claim 1, further comprising:

processing the linked documents based on groupings of the linked documents.

18. A computer-readable medium that stores instructions executable by one or more processing devices to perform a method for determining scores for a plurality of linked documents, comprising:

instructions for obtaining a plurality of documents, at least some of the documents being linked documents, at least some of the documents being linking documents, and at least some of the documents being both linked documents and linking documents, each of the linked documents being pointed to by a link in one or more of the linking documents;

instructions for determining a score for each of the linked documents based on scores for the one or more linking documents; and

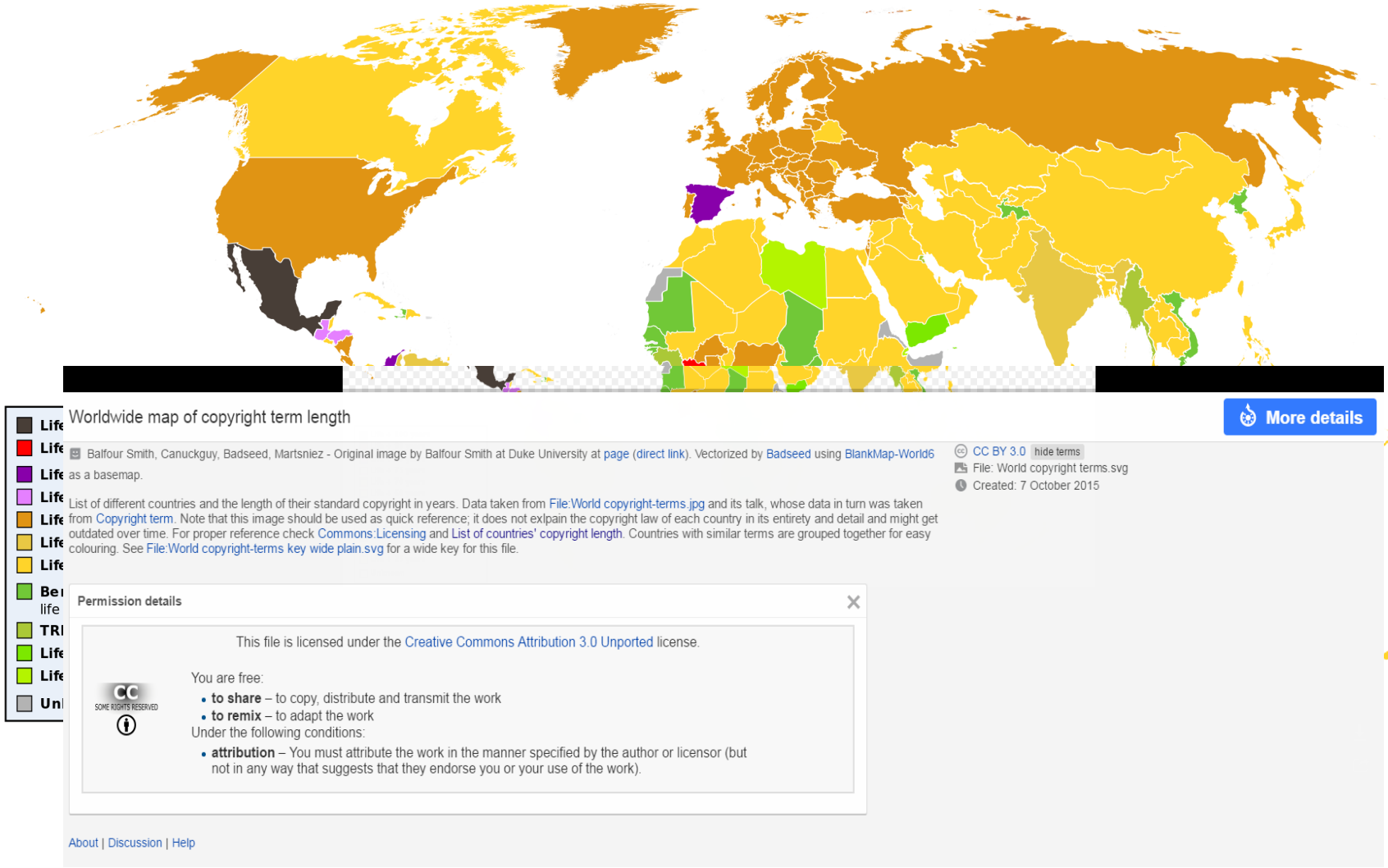
instructions for processing the linked documents according to their scores.

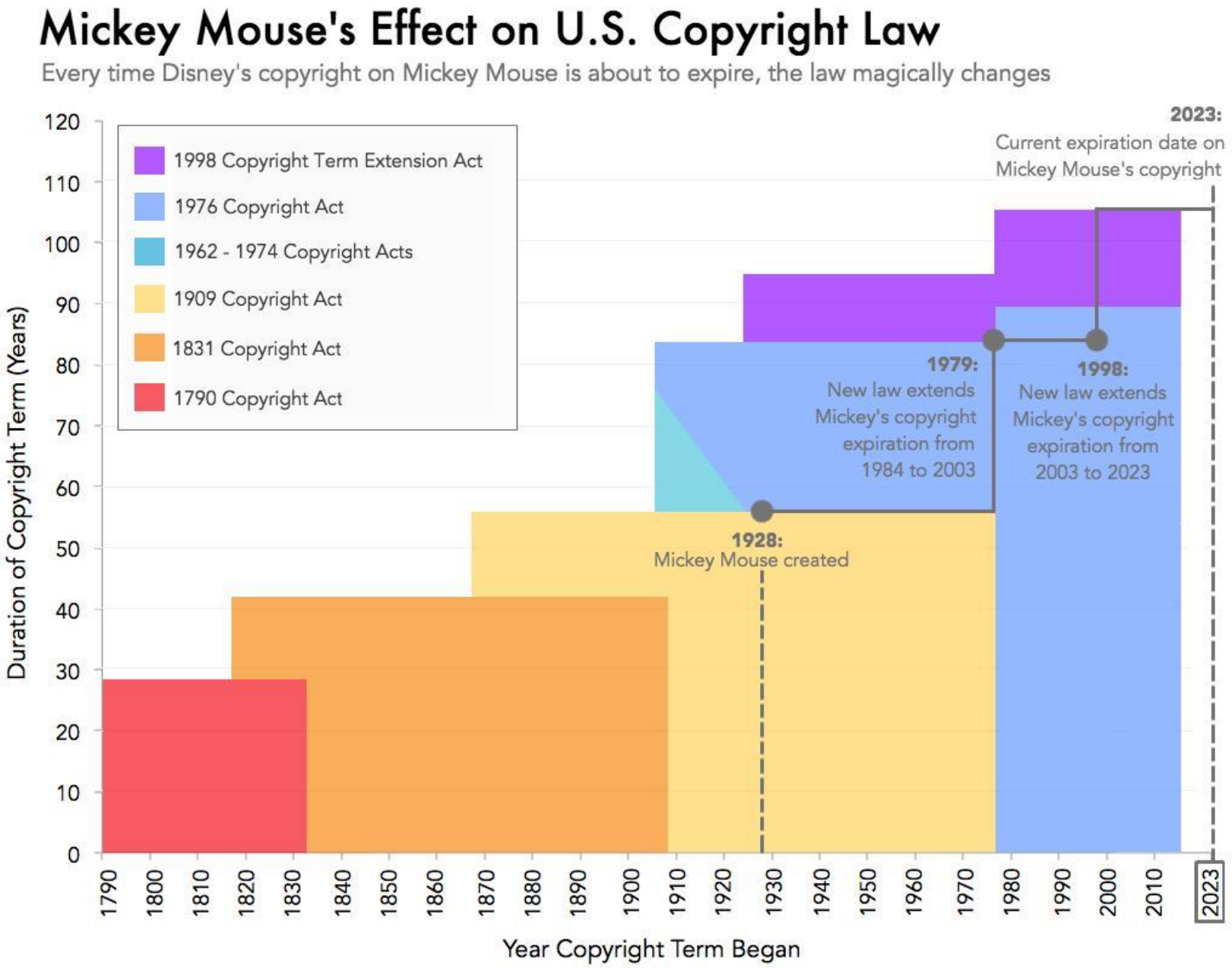
19. A computer-readable medium that stores instructions

Copyrights

Copyright is the exclusive right given to the creator of a creative work to reproduce the work, usually for a limited time.

The creative work may be in a literary, artistic or musical form. Copyright is intended to protect the original expression of an idea in the form of a creative work, but not the idea itself.



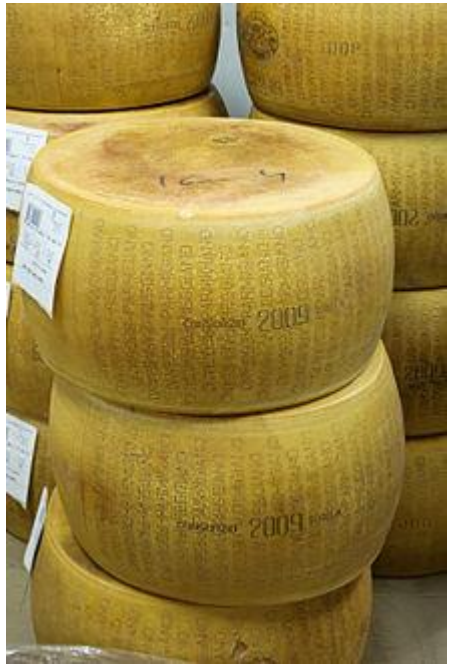


Zachary Crockett, Priceonomics; data via [Tom W. Bell]

Trademarks

A **trademark** is a type of intellectual property consisting of a recognizable sign, design, or expression which identifies products or services of a particular source from those of others, although trademarks used to identify services are usually called service marks. The trademark owner can be an individual, business organization, or any legal entity. A trademark may be located on a package, a label, a voucher, or on the product itself. For the sake of corporate identity, trademarks are often displayed on company buildings. It is legally recognized as a type of intellectual property.

Geographic Indicators



Parmigiano-Reggiano

The region in which Parmigiano-Reggiano can be produced, according to EU and Italian PDO legislation

People foolish enough to think
they can change the world, end up
changing them

- Apple commercial
Here's to the crazy ones
1997

Introducing the first electric vertical take-off and landing jet

Heart Aerospace

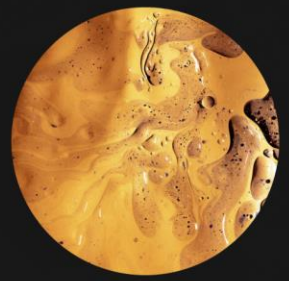
Company ES-30 Newsroom Media bank Careers Contact

Electrifying regional air travel

The first *carbon negative* molecule factory that can scale to meet the world's needs.

Agriculture

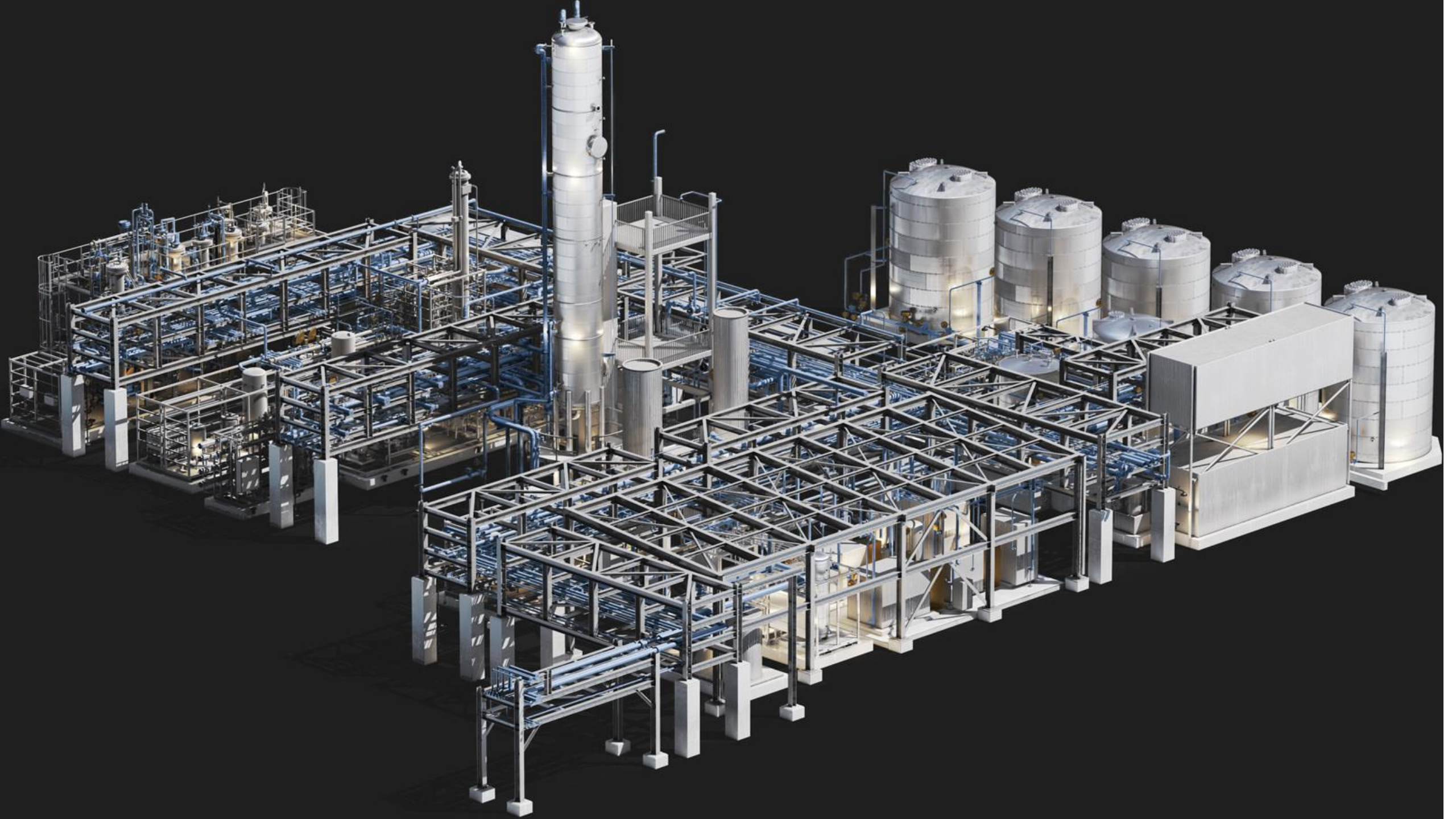
Water Treatment



Oil & Gas

Concrete

Cleaning



1:1

Bioforge produces 1 ton of product per ton of feedstock

100M x

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30,000t

Our process offsets over 30,000 tpy of CO_2 equivalent

Our Story

A long-standing poker game with a group of University of Texas Southwestern medical students in Dallas brought Gaurab Chakrabarti and Sean Hunt together.

Gaurab, getting his MD/PhD, was researching a drug candidate for pancreatic cancer. Hunt was a grad student at MIT studying chemical engineering. They began discussing how to use enzymes in an industrial, chemical process, and now they have 500,000 sq ft of manufacturing space across two facilities. They are looking forward to taking on the chemicals industry at scale, one molecule at a time.

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