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Munich, 19.10.2009

Amicus Curiae Brief
on behalf of
TELES AG

Case number G3/08

Referral under Article 112 (1) (b) EPC

The present statement is submitted on behalf of TELES AG, Ernst-Reuter-Platz 8, D-10587 Berlin, Germany, with respect to the referral under Article 112 (1) (b) EPC by the President of the European Patent Office, dated October 22, 2008, case number G 3/08.

A.
Introduction of TELES AG

1. TELES, a German high-technology company, was founded in 1983, and listed on the Prime Standard segment of the Frankfurt Stock Exchange in 1998, TELES conceives and commercializes innovative products and services in the telecommunications and information technology industry. TELES' success is a good example of entrepreneurial intellectual property development and management. As a quantifiable example of that success, TELES has paid –

during the last 10 years – dividends of over 70,000,000 € to its shareholders; moreover, TELES and its shareholders have paid more that 100,000,000 € of taxes to the City of Berlin.

2. TELES relies on the strength of patent rights awarded in Europe, the United States and elsewhere to protect its investments in research and development. Consequently, when commercializing a new product or service, TELES focuses its resources on countries having robust patent systems. TELES therefore has a vested interest in supporting patent systems that properly reward innovation.

B.
Summary of Arguments

3. Only a dynamic standard for patentability, encompassing future and yet unconceivable innovations, can fulfil the utmost purpose of Patent Law, namely to stimulate the development of such future innovations as the basis of economy and the wealth emanating from it. This has always been one of the very basic principles of modern Patent Law since its conception in the 19th century.

4. In a globalized economy, the purpose of Patent law – stimulating development of future technology – can be, however, only effectively achieved if there is a basic international consensus concerning substantive Patent Law, in particular concerning the standard of patentability. Different approaches among the various Patent Law jurisdictions may result in frictions in global investments in research and development, eventually resulting in drainage of capital within unfavourable jurisdictions.

5. In this respect, TELES notes that recent US case law suggests that only "physical inventions" or inventions having a "physical effect" shall be patentable. Such restriction would, however, clearly contradict the inherent purpose of Patent Law to stimulate the development of future innovations required for achieving the above mentioned eventual purpose, as it focuses on a specific phenotype of an invention, i.e. typical "physical machinery" of the 20th century, excluding future inventive technology which is no longed tied to any specific physical machinery or apparatus.

6. Given this potentially unfavourable development in US case law and the high importance of an internationally harmonized standard regarding patentability, TELES argues that the Enlarged Board of Appeal of the EPO should maintain the much-needed leadership in adequately developing the patents system and preserving a dynamic standard for patentable subject matter rejecting any backward-looking requirement of "physicality" or "tangibility" of inventions.

C.
Argument

I.

Patent Law was created to generate economic wealth by promoting innovations in future technology; therefore, the standards for patentable subject matter should remain as dynamic as the economic development itself.

7. TELES respectfully submits that in the present case the Enlarged Board of Appeal should consider the historical background of modern Patent Law. Modern Patent Law was created for a very distinct purpose, namely to promote innovations in future technologies, considering them as the source of future economic wealth. It is a logical consequence from this basic legislative intention that the scope of patentable subject matter must remain open for unforeseen future developments of technology, i.e. it should be the utmost goal of Patent Law to encompass subject matter which is neither known nor foreseeable at present.[1] In other words, Patent Law can only fulfil its inherent historic purpose – generating future economic wealth by promoting innovations in future technology – if the standards for patentable subject matter remain dynamic.

8. The above basic principle is truly an international one and has been expressed for example by the German Federal Supreme Court (Bundesgerichtshof) in the famous decision "Red Dove"

[1] See e.g. *Beier*, Zukunftsprobleme des Patentrechts, GRUR 1972, 214; Busse-*Keukenschrijver*, Patentgesetz, § 1 Rn. 20; Klauer-Möhring-*Technau*, Patentrechtskommentar, Band I, 3. Aufl. München 1971, § 1 Rn. 19; *Kolle*, Der Rechtsschutz von Computerprogrammen aus nationaler und internationaler Sicht, GRUR 1973, 611-620; 1974, 7, 17; *Nack*, Die patentierbare Erfindung (2002), S. 304 f.

of 1969, dealing with the question of patentability of a method for breeding animals, i.e. red doves. In this landmark decision, it is stated:[2]

> *"According to § 1 (1) of the Patent Act, which has remained unchanged since Enactment of the Patent Act in 1877, patents can be obtained for new inventions that permit industrial application. Originally, this was interpreted as a teaching of a technical character employing physical and chemical means alone known as predictable at the time the Act was passed. However, this original view can no longer determine interpretation of the Patent Act, because science and technology have changed significantly in the meantime. In particular, agriculture has become widely mechanized, chemical methods can be predicted with considerable accuracy and biological phenomena and forces have long since become the object of precise scientific research. An historical interpretation of the term invention is even more unsatisfactory – and this has been misunderstood in the decisions of the Federal Patent Court, published in BPatGE, Vol. 8, p. 121, and Vol. 10, p. 1, – because invention is a basic concept in a field of law having as its most important task encompassing the patentable results of the most recent states of science and of research. Therefore, the intent of the Patent Act itself not only permits but even compels drawing upon the latest state of scientific knowledge to interpret this concept of invention, which was not construed more precisely by the legislature and which by its nature requires judicial determination."*

9. A similar reasoning can be found in the famous decision *Diamond vs. Chakrabarty* of the United States Supreme Court. Confirming patentability of an oil-eating bacterium the Court held:[3]

> *"The subject-matter provisions of the patent law have been cast in broad terms to fulfil the constitutional and statutory goal of promoting "the Progress of Science and the useful Arts" with all that means for the social and economic benefits envisioned by Jefferson."*

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[2] See German Federal Supreme Court, IIC 1970, 136 – *Red Dove*.
[3] Diamond vs. Chakrabarty, 447 U.S. 303 (1980).

10. Indeed, the actual historical development of the scope of patentable subject matter[4] shows that Courts and Patent Offices never aimed to restrict the scope of patentable subject matter to the fields of human endeavour originally considered as sources of patentable inventions, when modern Patent Law was established in the 19th century.

11. A perfect example for this general rule in modern Patent Law is the development of the scope of patentable subject matter in Germany. The first German Patent Act (as a federal law) stems from 1877. The law was enacted after very extensive consultations and discussions, both on a political and a scientific level. When reviewing the historical documents produced during these consultations, it becomes clear that the "fathers of German Patent Law" had indeed a very clear and narrow concept which kind of fields of human endeavour (i.e. industries) are intended to be promoted by patent law. This can be demonstrated by the following two excerpts from historical documents– *as pars pro toto*:

> "[Patentable] *technology has to be understood as industrial activity in a narrow sense; both terms mean mechanical or chemical processing or treatment of raw materials.*"[5]

> "*Patentable are all procedures, chemical methods, automated or mechanical apparatuses, which feature distinct characteristics over the prior art. Automated or mechanical apparatuses have to be understood as comprising all means which provide for a specific movement or a mechanical effect induced by an interaction or any natural force.*"[6]

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[4] See *Nack*, Die patentierbare Erfindung (2002), S. 176 ff.
[5] *Schanze*, Beiträge zu der Lehre von der Patentfähigkeit, Berlin 1902, S. 60. Similar: Decision of the German Imperial Patent Office (RPA) Bl.f.PMZ 1899, 238 – *Signalverfahren*: „[Patentable] *are mechanical or chemical methods of processing raw materials.*" See also RPA Bl.f.PMZ 1906, 6. It is a particular characteristic of German Patent Law that the fields of human endeavour to be encompassed by Patent Law were called – from the very beginning – "technique" or "technology.
[6] *Sack*, Das deutsche Patentgesetz: Wesen und Wirkung desselben für Erfinder und Patentinhaber, Leipzig 1881, S. 1.

12. It can be seen from the above excerpts that the fathers of (German) Patent Law obviously envisaged mechanical engineering and chemistry as sources of patentable inventions.[7] As practical examples of patentable mechanical devices contemporary scientific papers mention tools[8], machines[9] and prime movers[10] (such as steam engines). As regards patentable industrial manufacturing methods, the papers refer to the manufacturing of consumer goods[11] and methods of processing raw materials[12] (in particular steelmaking[13]). And the term "chemical method" [14] is used – almost exclusively – as referring to manufacturing of dyes (in particular for textiles).[15] In contrast, other areas of human endeavour were regarded as clearly excluded from patentability, such as mining, agriculture.[16] The Imperial Patent Office even stated that patentable techniques must relate to the "*inanimated nature*".[17]

13. Despite this clearly very limited initial scope of patentable subject matter in the 19th century, it was nevertheless understood that this scope is not static, but rather a dynamic one. As a

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[7] See also German Imperial Court (RG) Patentblatt 1889, 209, 212 – *Kongo-Rot.*
[8] *Dambach*, Das Patentgesetz für das deutsche Reich, Berlin 1877, § 1 Sec. 3; *NN* (probably *W. Siemens*), in: Die Patentfrage, Köln; Leipzig 1876, S. 78; Stenographische Berichte über die Verhandlungen der Enquete in Betreff der Revision des Patentgesetzes, Berlin 1887 (Tagung vom 22.-27. November 1886), p. 24 (Reuleaux).
[9] *Dambach*, Das Patentgesetz für das deutsche Reich, Berlin 1877, § 1 Sec. 3; *Klostermann*, Das Recht des Erfinders, Archiv für Theorie und Praxis des Allgemeinen Deutschen Handels- und Wechselrechts, Bd. 35 (1877), 11, 40; *Kohler*, Deutsches Patentrecht, Mannheim 1878, p. 69; *idem*, Handbuch des deutschen Patentrechts in vergleichender Darstellung, Mannheim 1900, S. 111: „Druckapparat, Schalltrichter, Schreibmaschine". Report of the Reichstag Commission (RT Drs. 1877 Nr. 144), p. 397.
[10] *Biedermann*, Über die Patentfähigkeit von Erfindungen, besonders von solchen chemischer Art, Patentblatt 1889, 348, 350; *Kohler*, Deutsches Patentrecht, Mannheim 1878, p. 69; *Elben*, Technische Lehre und Anweisung an den menschlichen Geist (1960), p. 31.
[11] *Dambach*, Das Patentgesetz für das deutsche Reich, Berlin 1877, § 1 Sec. 3; *Klostermann*, Das Recht des Erfinders, Archiv für Theorie und Praxis des Allgemeinen Deutschen Handels- und Wechselrechts, Vol. 35 (1877), 11, 40; *Schanze*, Was sind gewerblich verwertbare Erfindungen?, Wien 1895, p. 22; *Troller*, Immaterialgüterrecht, Band I, 2. Aufl. Basel; Stuttgart 1968, p. 65; *Quenstedt*, Was ist Erfindung?, Patentblatt 1880, 61; Report of the Reichstag Commission (RT Drs. 1877 Nr. 144), p. 397.
[12] *Kohler*, Deutsches Patentrecht, Mannheim 1878, p. 70.
[13] See RPA Patentblatt 1882, 41 – *Thomas-Verfahren.*
[14] See *v. Möller*, Die Anwendung des Patentgesetzes auf die chemische Industrie, Patentblatt 1879, p. 405.
[15] RG Patentblatt 1889, 209 – *Kongo-Rot;* RG Patentblatt 1890, 369 – *Martius-Gelb;* Meeting report of the expert commission (*Enquete*) 29.8.-2.9. 1876 appointed by the Bundestag, printed in BR Drs. 1876, Nr. 70, p. 9 (Brüning).
[16] BR Drs. 1877 Nr. 14, S. 17.
[17] RPA Bl.f.PMZ 1914, 257, 258 – *Spiegelvorrichtung für Kinos*; . See also *v. Gierke*, Deutsches Privatrecht, Leipzig 1895; *Landgraf*, Das Deutsche Reichsgesetz betreffend des Schutz von Erfindungen und von Gebrauchsmustern, 2. Aufl. Berlin 1892, p. 2; *Kohler*, Lehrbuch des Patentrechts, Mannheim; Leipzig 1908, p. 25.

general rule,[18] whenever new fields of science and engineering emerged from the areas of human endeavour already considered as patentable technology, these new subject matter were included in the scope of patentability. Prominent examples are the organic chemistry emerging from inorganic chemistry, electrical engineering emerging from mechanical engineering, biology emerging from organic chemistry[19], biotechnology emerging from biology, computer science emerging from electrical engineering, bioinformatics emerging from biotechnology and informatics etc. All these new fields of human endeavour were clearly far beyond the scope of patentable subject matter initially envisaged by the fathers of Patent Law. However, retrospectively, the inclusion of this subject matter has to be considered as an organic growth, as a consequential development of the initial scope of patentability.

14. Therefore, any attempt to "freeze" the scope of patentable subject matter to any state of technology would be diametrically opposed to the initial and inherent purpose of Patent Law. When enacting (and repeatedly reforming) modern Patent Law, the national legislators rather mandated the Patent Offices to develop the scope of patentable subject matter, and not to freeze it to a specific state of technology.

15. There is also no indication that the Members of the European Patent Organization envisaged any other than the established concept of Patent Law described above when discussing and concluding the European Patent Convention (EPC) in 1973.[20] And again there is no indication that the Members of the European Patent Organization intended to change this basic principle when reforming the EPC in 2000.[21]

16. Therefore, TELES submits that Patent Law, in particular the EPC was created by the Member States to generate future economic wealth by stimulating innovation in future technologies, not restricted to the areas of human endeavour know to date. Therefore, it is an inherent and

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[18] See *Nack*, Die patentierbare Erfindung (2003), page 313 et seqq.
[19] See RPA Bl.f.PMZ 1924, 6 – *Tuberkuloseimpfstoff*; RPA Bl.f.PMZ 1932, 240- *Landwirtschaftliches Kulturverfahren; v. Boehmer*, Die Patentfähigkeit von Erfindungen: Grundsätze für ihre Prüfung und für die Erteilung von Patenten, Berlin 1911, p. 26; *Pinzger*, Über die Patentfähigkeit von Pflanzenzüchtungen, GRUR 1938, 733.
[20] See *Nack* in: Münchner Gemeinschaftskommentar zum EPÜ, Art. 52, Sec. 15 et seq.
[21] See *Nack* in: Münchner Gemeinschaftskommentar zum EPÜ, Art. 52, Sec. 46 et seq.

irreversible rule that the standards for patentable subject matter must remain dynamic, i.e. open to future technologies even unconceivable at present.

17. In addition, it should be noted that the high fixed economic costs associated with a patent system (e.g. costs of respective court systems and patent offices) are only justified if there is a respective overall economic benefit coming from the patent system, i.e. if the patent system is actually generating future economic wealth by promoting innovations in future technology. Turning away from the fundamental principal of dynamic development of patentability would therefore also question the existence of the patent system as a whole.

II.

In a globalized economy this purpose of Patent Law can only be achieved if there is an international consensus regarding the scope of patentable subject matter

18. TELES argues that in nowadays' globalized economy, the purpose of Patent Law analysed above – generating future economic wealth by promoting innovations in future technology – can only be effectively achieved if there is an international consensus in the major Patent Law jurisdictions around the world regarding the scope of patentable subject matter.

19. International high-technology companies like TELES have to adopt a global intellectual property strategy when investing in research and development and thereby generating economic wealth, as its business is directed to the global market. Frictions between the different intellectual property law systems in the relevant jurisdictions significantly hamper investments and may eventually lead to preferential treatment of jurisdictions offering a more suitable intellectual property law environment. In this respect, the question of availability of adequate patent protection is of utmost importance. The encouragement to innovate provided by the patent system is manifested by a patent's grant of a limited period of exclusive rights. These exclusive rights drive the goals of strategic patenting, which are primarily two-fold. First and foremost, patenting strategies provide protection to help prevent innovation from being copied by competitors in the market, and provide remedies if copying occurs. Second, global patenting strategies are used to prevent others from appropriating the benefits of an in-

vention. It needs to be reemphasized that both goals are not only for the benefit of the individual company, but rather eventually result in generating overall economic wealth

20. Consequently, a robust patent system attracts international capital in a manner that aligns precisely with the long-standing goal of the European patent system to encourage innovation. Jurisdictions with robust patent systems, such as the EPC and Germany, have historically played a key role in accelerating innovation in global markets and have experienced the creation of wealth that accompanies such innovation. In contrast, jurisdictions having weak patent systems are struggling to attract investment in innovation.

21. Recent history impressively shows the effect of changes – or lack of reforms – in patent law systems with respect to the economic success of that particular geographic region. For years, international entrepreneurs shied away from investing in innovation in countries marred with a public perception of having weak patent systems. The uncertainties of whether a patent would be awarded for innovation and whether a patent would be enforceable, removed countries with weak patent systems from consideration for global market expansion until recent years. Because economic progress relates to technological progress and because effective patents are strong drivers of both of these forms of progress, countries with weak patent systems enjoy less economic and technological progress than do countries with robust patent systems.

22. Therefore, TELES submits that the Enlarged Board of Appeal should maintain a position with respect to patentability which is in accordance with the goal of worldwide harmonization of the fundamental principles of Patent Law, namely to stimulate future public wealth by promoting development of future technology. The global nature of today's economy strongly recommends that the European patent system be harmonized with robust patent systems of other nations wherever possible. More particular, TELES argues that the Enlarged Board of Appeal should refrain from limiting the scope of patentable subject matter and thereby creating an isolated European approach towards patentability, which may eventually result in an overall downturn of investments in research and development in the EPC Member States – which would eliminate the basis of our knowledge-based economy. Patents on future cutting-

edge technologies are the foundation of future economic wealth and welfare; this should be always kept in mind when the question of patentability is discussed.

23. Detailed answers to the questions of referral G 3/08 are given below in section V.

III.
Recent developments in US Patent Law question an internationally harmonized approach towards patentability

24. Recent developments in case law in the United States give rise to concerns that the US patent system is turning away from its long-established approach of stimulating innovation in future technologies by a dynamic approach towards patentability. Since its conception by Thomas Jefferson, US Patent Law followed the internationally adopted rule that the scope of patentable subject matter must encompass new fields of human endeavour even if these were totally unconceivable at the time the patent system was established.

25. In the landmark decision *State Street Bank & Trust Co. v. Signature Financial Group Inc.* the Court of Appeals for the Federal Circuit (CAFC) framed a very liberal test for patentability under which a process was patent-eligible if it produced "*a useful, concrete, and tangible result*".[22] This test was later confirmed by the Court in the decision *AT&T Corp. v. Excel Communications, Inc.*[23]

26. *In re Bilski*,[24] however, the CAFC recently held that "*those portions of our opinions in State Street and AT&T relying solely on a 'useful, concrete and tangible result' analysis should no longer be relied on.*" Instead, the Court established the "*machine-or-transformation test*" as the sole test for the patentability. Under this test a process is patentable if it (1) is implemented with a particular machine, or else (2) transforms an article from one thing or state to another. As a caveat, the Court noted that conventional or obvious "insignificant post-solution activity" is not sufficient for patent eligibility under this test.

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[22] See *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).
[23] *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999).
[24] *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

27. The old test for patentability under *State Street Bank* was correctly criticized for its sweeping vagueness. However, the introduction of the new "machine-or-transformation test" shifts the law from one extreme to the opposite one, and is therefore not adequate either. If taken literally, the test freezes the scope of patentable subject matter to industrial manufacturing methods and hard-wired machines. The test completely ignores the fact that in the 21st century a "new machine" has in many cases no longer the phonotype of a new physical entity, but is rather an *algorithm* as such, which can be implemented into any kind of existing or future general purpose machine, e.g. computers.[25] It is agreed that in former times an inventive achievement in the field of engineering positively always came out in the phenotype of a new physical entity; however, this was merely due to the fact that no general purpose machines (computers) were available: Also, in old times the contribution to the state of the art was never the specific physical arrangement of metal and steel, but rather the algorithm implemented into the respective single-purpose machine.

28. The *Biski* case is currently pending with the US Supreme Court for review[26] and its outcome is completely open. However, the decision of the CAFC should be seen in any case as a dangerous development in US Patent Law, as it seems turning away from the fundamental and long-established principle of a dynamic patentability requirement and thereby weakens the US patent system and eventually decreases the incentives for inventing in the US.

29. Due to the outstanding international importance of questions raised in the *Bilski* case TELES filed an amicus curiae brief in the pending proceedings before the US Supreme Court, which is attached to this brief as ANNEX. Reference is made to TELES' arguments brought forward in that brief.

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[25] See *Bammé*, Mascinen-Menschen, Menschen-Maschinen (1986).
[26] Case number 08-964 (*Bilski v. Kappos*).

IV.

EPO should take the lead in promoting future innovations
by adopting a dynamic standard for patentable subject matter

30. For the reasons explained above, there is a strong need for political efforts directed towards harmonisation of the fundamental principles of patent law, in particular the question of patentability. Therefore, TELES submits that the Enlarged Board of Appeal should take the lead in the much needed international harmonization of Patent Law by adopting a dynamic patentability requirement stimulating investment in future technologies.

31. The European Patent Convention and the practice of the EPO are highly respected in the globalized world of intellectual property. Therefore, a decision of the Enlarged Board of Appeal confirming the long-established principle of a dynamic patentability requirement not limited to "physical" machinery would have a very significant signalling effect, i.e. other jurisdictions are likely to follow the example of the EPO, in particular in the emerging Asian markets.

32. Given this international role of the EPO, TELES argues that the Enlarged Board of Appeal should confirm that the test for patentability does not impose restrictions that are alien to other very successful patent systems in the world. It is in the interest of any nation not to deviate from globally accepted principles of patent law, but imposing such restrictions would do just that, producing a negative impact on investments made by international companies in that nation.

V.

Answers to the questions of referral G 3/08

33. Based on the above arguments, TELES submits that the Enlarged Board of Appeal should answer the questions of referral as follows:

Question 1: *Can a computer program only be excluded as a computer program as such if it is explicitly claimed as a computer program?*

34. The "phenotype" of an invention, i.e. its outer appearance (as described in the claims) should be on no relevance whatsoever regarding patentability. Any restriction of patentability based on the "phenotype" of an invention would be pure formalism, i.e. no material effect would be achieved concerning the scope of patentability.

35. Patentability should rather only depend on the field of human endeavour the claimed subject makes a non-obvious contribution to; a patentable invention must make a non-obvious contribution to the field of "technology" in terms of Patent Law – whereby the definition of "technology" must remain dynamic, i.e. open to future technologies even unconceivable at present, thereby stimulating development of future technology.

36. While the scope of patentability is continuously and dynamically growing – as an inherent characteristic of the patent system – it is agreed that contributions to certain fields of human endeavour like the liberal arts cannot give reason for affirming patentability.[27]

Question 2a: *Can a claim in the area of computer programs avoid exclusion under Art. 52 (2) (c) and (3) merely by explicitly mentioning the use of a computer or a computer-readable data storage medium?*

37. Again, the "phenotype" of an invention, i.e. its outer appearance as described in the claims should be on no relevance whatsoever regarding patentability. Such kind of requirement would be pure formalism, i.e. no material effect concerning the scope of patentability would be achieved.

Question 2b: *If question 2(a) is answered in the negative, is a further technical effect necessary to avoid exclusion, said effect going beyond those effects inherent in the use of a computer or data storage medium to respectively execute or store a computer program?*

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[27] As confirmed by T931/95 – Pension Benefits/PBS, T 258/03 – Auction Method/HITACHI, or T172/03 – Order Management/RICOH.

38. The concept of a "further technical effect" is inherently ill-conceived and therefore should be laid to rest. This requirement only lead to the effect that patent attorneys drafting claims on computer-implemented inventions must add some kind of trivial peripheral equipment to the respective claims, such as printers, servers, networks, or display means. Such kind of formalism should be removed from the concept of patentability.

39. Again, patentability should rather exclusively depend on the field of human endeavour the claimed subject makes a non-obvious contribution to.

Question 3(a): *Must a claimed feature cause a technical effect on a physical entity in the real world in order to contribute to the technical character of the claim?*

40. This question implies that there are acts of humans or machines which do not "*cause a technical effect on a physical entity in the real world*". Given the undisputable fact that each and every act positively causes an effect in the world, the question only makes sense if understood in the sense that one must distinguish between the "real" world and the "other" world, so that the next question is to which "other world" the question is referring to – this taken alone should be enough to demonstrate that this question is not suitable to further enlighten the discussion of the scope of patentability.[28] Therefore, the answer to this question must be clearly "yes" – however, <u>any</u> computer-implemented invention positively "*causes a technical effect on a physical entity in the real world*", namely at least a technical effect in a computer.

Question 3(b): *If question 3(a) is answered in the positive, is it sufficient that the physical entity be an unspecified computer?*

[28] As a side remark, one can of course not exclude that someone indeed files a patent claiming an invention which allegedly has an effect on transcendental subject matter, so that the invention "causes no technical effect in the real world" – this scenario, however, seems not to be envisaged by question 3(a).

41. Yes, otherwise this would be a "further" technical effect – and as explained above, the requirement of a "further technical effect" is ill-conceived and should be laid to rest. Again, patentability should rather exclusively depend on the field of human endeavour the claimed subject makes a non-obvious contribution to.

Question 3(c): *If question 3(a) is answered in the negative, can features contribute to the technical character of the claim if the only effects to which they contribute are independent of any particular hardware that may be used?*

42. n/a

Question 4(a): *Does the activity of programming a computer necessarily involve technical considerations?*

43. In the EPO case law, "technical considerations" are understood as an indicator that the respective invention makes a contribution to the field of technology in terms of patent law (see e.g. T172/03 – Order Management/RICOH). The answer to this question should be "no", as the mere act of programming does not necessarily involve "technical consideration" – this rather depends on the field of human endeavour the respective computer program relates to.

Question 4(b): *If the question 4(a) is answered in the positive, do all features resulting from programming thus contribute to the technical character of a claim?*

44. n/a

Question 4(c): *If the question 4(a) is answered in the negative, can features resulting from programming contribute to the technical character of a claim only when they contribute to a further technical effect when the program is executed?*

45. "*Features resulting from programming*" may give reason for affirming patentability if they make a non-obvious contribution to a field of human endeavour considered as technology in

terms of patent law, whereby the definition of technology must remain dynamic, i.e. open to future technologies even unconceivable at present.

(Dr. Ralph Nack)
Rechtsanwalt

No. 08-964

IN THE

Supreme Court of the United States

BERNARD L. BILSKI AND RAND A. WARSAW,

Petitioners,

v.

JOHN J. DOLL, ACTING UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND ACTING DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF TELES AG AS AMICUS CURIAE IN SUPPORT OF NEITHER PARTY

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This brief in support of neither party is filed on behalf of amicus curiae TELES AG (TELES). TELES has no financial interest in Petitioners.[1]

INTEREST OF AMICUS CURIAE

TELES, a German high-technology company, is a typical "American" success story. Founded in 1983, and listed on the Prime Standard segment of the Frankfurt Stock Exchange in 1998, TELES conceives and commercializes innovative products and services in the telecommunications and information technology industry. The same entrepreneurial spirit that drives the United States economy has been integral to TELES's success. As a quantifiable example of that success, TELES has paid dividends of over $100,000,000 to its shareholders.

TELES relies on the strength of patent rights awarded in the United States, Europe, and elsewhere to protect its investments in research and development. Consequently, when commercializing a new product or service, TELES concentrates its resources in countries having robust patent systems. TELES therefore has a vested interest in supporting patent systems that properly reward innovation.

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[1] Pursuant to Rule 37.6 of the Rules of the United States Supreme Court, TELES states that no counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than amicus curiae, its members, or its counsel made a monetary contribution to its preparation or submission. The parties have consented to the filing of this brief.

SUMMARY OF ARGUMENT

1. It is clear that the future economic strength of the United States will rely greatly on cutting-edge technologies – such as artificial intelligence, genetic programming, and human-machine communications – that in the broadest sense are not "physical" or "tangible." But the "machine-or-transformation test" set forth by the Federal Circuit gives cause for serious concern that patentability will be statically limited to "physical" or "tangible" implementations of technical developments, largely excluding innovations in such cutting-edge technologies. TELES therefore submits that, to continue to promote the wealth of society by providing meaningful incentives to stimulate innovation, only a dynamic standard for patentable subject matter is consistent with United States patent laws and policy and this Court's precedents.

TELES also recognizes that awarding patents for trivial inventions – i.e., inventions that do not meaningfully push back the frontiers of knowledge – can hinder innovation. TELES thus suggests retaining a test for patentability that ensures that an invention is protectible if it makes a nontrivial contribution in the field of "useful arts" – i.e., the four expansive categories of patentable subject matter identified in Section 101 of the patent statutes.

Several principles are important to companies like TELES when determining where to invest capital. First, robust patent systems are dynamic: they promote innovation across all areas of technology – including those that may not have existed at the Nation's founding

or during the Industrial Age – by rewarding inventors with effective patents. Second, robust patent systems apply an inclusive approach to patentable subject matter that avoids limitations based on the "phenotype" of an innovation – i.e., restricting patentability only to inventions that are "physical" or "tangible" types, leaving other types of innovation unpatentable. Third, robust patent systems reward inventors only for their specific contributions over the prior art. According the test for patentable subject matter with those three general principles, by preserving dynamic standards for patentability, will promote the flow of international capital into the United States and further the purpose of the Nation's patent laws.

2. The global nature of patenting strategies recommends that the laws of effective patent systems around the world should be – or should remain – harmonized whenever possible. In today's globalized economy, patenting strategies examine the strengths and weaknesses of patent systems worldwide. To maximize return on investment, international entrepreneurs are attracted to jurisdictions with robust patent systems. For example, both the United States and Europe enjoy well-developed patent systems that have included a dynamic view of patentable subject matter that rewards real innovations in all areas of technology – with no arbitrary, judicially created "carve-outs" from patentability for certain industries or end-uses.

Among the world's robust patent systems, the laws regarding patentable subject matter are already largely harmonized, and this area of patent law in the United

States should remain so. Were this Court to depart from broad, flexible patentability standards, the United States would be at a competitive disadvantage – compared, for example, with Europe – in attracting the international investment that follows effective patent systems. Such a competitive disadvantage would be inconsistent with the policy goals undergirding the United States patent system, further indicating that the Court should retain expansive, dynamic standards of patentability for specific, nontrivial innovations in all technologies.

ARGUMENT

I. TO FURTHER THE PUBLIC POLICY OF THE PATENT LAWS TO PROMOTE INNOVATION, THE STANDARDS FOR PATENTABLE SUBJECT MATTER SHOULD REMAIN DYNAMIC

Robust patent systems are designed to provide wealth to societies by stimulating innovation for all sectors of the economy and all areas of technology. The United States patent system has done this for over two hundred years by rewarding innovations that meaningfully advance public knowledge with effective patents.

A. The Patent Act And This Court's Precedents Recognize That The Purpose Of The Patent System Is To Foster Innovation

The United States Constitution expressly authorizes a patent policy "to promote the Progress

of . . . the Useful Arts, by securing for limited Times to . . . Inventors the exclusive right to their . . . Discoveries."[2] Effectuating this general principle, Congress enacted patent statutes that expansively embrace the economic benefits of awarding patents for innovation by providing that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor . . . ."[3] Tellingly, the statutory language excludes no particular area of the economy and prescribes no static understanding of technology.

Given such Congressionally mandated breadth, when assessing whether an invention presents patentable subject matter, instead of asking "Why?" the proper question is "Why not?"

Consonant with the expansive statutory language, this Court has consistently recognized the dynamic nature of innovation by broadly interpreting the meaning of patentable subject matter under Section 101. In its most recent decisions, in *Chakrabarty* and *Diehr*,[4] the Court upheld a broad standard by expressly refusing to read limitations and conditions into the statute. The legislative intent of Congress, as properly understood and explained by this Court, presents clear support for a dynamic standard for determining

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[2] U.S. Const., art. I, § 8, cl. 8.

[3] 35 U.S.C. § 101 (2009); *see also* 35 U.S.C. § 100(b) (2009) (defining "process" capaciously).

[4] *Diamond v. Chakrabarty*, 447 U.S. 303, 308-309 (1980); and *Diamond v. Diehr*, 450 U.S. 175, 192 (1981).

patentable subject matter in accord with Thomas Jefferson's philosophical view that "ingenuity should receive liberal encouragement."[5] That philosophy has sagely guided United States patent policy for over two hundred years and has achieved a robust patent system that continues to serve this country well.

B. Modern Innovation Is Inherently Dynamic, As Should Be The Standards For Patentable Subject Matter

Naturally, the encouragement to innovate that the United States and other patent systems provide cannot apply to inventions excluded from patentable subject matter. Therefore, robust patent systems should reward true innovation in all areas of technology, in all sectors of the economy, and at all levels of maturity, whether long-existing, currently developing, or newly pioneering. Innovation, in turn, is fundamentally a dynamic process. In order to maximally foster innovation, the standard for patentable subject matter must also be dynamic. Thus, to fully realize the constitutional and statutory goals, this Court should ensure that the United States patent system provides its benefits to all areas of the economy and is not frozen in place at any point in time.

In particular, the standard for patentable subject matter should not embrace peculiar industry or end-use exclusions or "carve-outs." Such carve-outs for certain somehow-disfavored technologies or industries would stifle innovation by limiting protection and

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[5] *Chakrabarty*, 447 U.S. at 308-309 (*citing* 5 *Writings of Thomas Jefferson* 75-76 (Washington ed. 1871)).

enforcement of rights in innovation in the carved-out areas, impeding the flow of capital into research and development in those areas. Thus, limiting patentable inventions with such artificial, judicially created exclusions would contradict the constitutional purpose, ignore the unambiguous mandate of Congress found in Sections 100(b) and 101 of the patent statutes, and disregard this Court's precedents.

On the other hand, it is well understood that patent grants impede innovation if they cover fundamental principles or trivial inventions – i.e., inventions that do not specifically contribute to and advance the state of the art. Such grants are impermissible under the patent statutes and this Court's precedents, and should be impermissible under the otherwise broad standards for assessing patentable subject matter, which should dynamically embrace all manner of technologies.

TELES generally agrees with the discussion of the law concerning patentable subject matter in Petitioners' merits brief. And while taking no position on the ultimate disposition for Petitioners' patent application in this case, TELES does consider that the patentability of claim 1 is less supportable than the patentability of claim 4.

II. BECAUSE GLOBAL PATENTING STRATEGIES SEEK OUT EFFECTIVE PATENT SYSTEMS WORLDWIDE, DYNAMIC STANDARDS FOR PATENTABILITY BEST PROMOTE INNOVATION IN THE UNITED STATES

International entrepreneurs like TELES weigh the benefits of patent systems throughout the world when considering allocating their resources and the risks and rewards of bringing innovations to market. Consequently, a robust patent system attracts international capital in a manner that aligns precisely with the long-standing goal of the United States patent system to encourage innovation. Further, the global nature of today's economy strongly recommends that the United States patent system be harmonized with robust patent systems of other nations wherever possible. And in the area of patentable subject matter, the laws of jurisdictions with robust patent systems are already largely harmonized around expansive, dynamic standards of patentability.

A. International Entrepreneurs Seek Return On Investment For Innovation In Jurisdictions With Robust Patent Systems

The encouragement to innovate that the patent system provides is made manifest by a patent's grant of a limited period of exclusive rights. These exclusive rights drive the goals of strategic patenting, which are primarily two-fold. First, offensively, patenting strategies obtain protection to help prevent innovation from being copied by competitors in the market, and to provide remedies if copying occurs. Second, defensively,

inventors seek to avoid having their technological room to maneuver limited by the patents of others.[6]

International entrepreneurs weigh these two goals heavily when considering global patenting strategies and the protection afforded throughout the world by patent systems in various jurisdictions (primarily nations and regional confederations such as the European Patent Organization). Jurisdictions with robust patent systems, such as the United States and Germany, have historically played a key role in accelerating innovation in global markets and have experienced the creation of wealth that accompanies such innovation.[7] In contrast, jurisdictions having weak patent systems are struggling to attract investment in innovation.[8]

Expanding innovation in international markets relies heavily on effective patents.[9] Effective protection in countries having robust patent systems serves as the basis for disseminating innovation to global partners in

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[6] Knut Blind et al., *Motives to Patent: Empirical Evidence from Germany*, 35 Res. Pol'y 655, 656 (2006).

[7] Ashish Arora & Marco Ceccagnoli, *Patent Protection, Complementary Assets, and Firms' Incentives for Technology Licensing*, 52 Mgmt. Sci. 293 (2006).

[8] Sisir Botta & Christopher Tsai, *Globalization is a Catalyst for Change in Intellectual Property Systems: Case Studies in India and China* (2004), *available at* http://net.shams.edu.eg/ecourses/Aeronautics%20and%20Astronautics/under%20&grad/Inventions% 20and%20Patents,%20Fall%202003/pro/1.pdf.

[9] Blind, *Motives to Patent*, *supra* at 665-70.

other such countries, whether subsidiaries, affiliates, or unaffiliated licensees. Particularly in the computer and telecommunications sectors, patenting technology is critical to protect the innovator from competitors' patent infringement.

1. A Developed United States Patent System Supports Investment in Innovation

Though probably self-evident, the notion that no patent system is perfect recently received additional confirmation from two economics professors. They studied the history of patent systems around the world in order, among other things, to illustrate the lesson that

> [t]here are no easy solutions to the problems of running a patent system. There is an inherent trade-off in this system, between rewarding innovators and burdening commerce, competition, and other inventors. Numerous approaches have been attempted over the years, and none has satisfied everyone.[10]

Despite these problems, the approaches that Congress has adopted have, in Lincoln's phrase, "added the fuel of interest to the fire of genius"[11] to produce

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[10] Adam B. Jaffe & Josh Lerner, *Innovation and Its Discontents* 79 (Princeton U. Press 2004).

[11] Abraham Lincoln, Second Lecture on Discoveries and Inventions (Feb. 11, 1859), *in* 3 *The Collected Works of Abraham Lincoln,* at 356-63 (Roy P. Basler ed., Rutgers U. Press 1953).

substantial wealth and other benefits of progress throughout the Nation's history. And since the first Congress exercised its power under the Constitution's patent clause, a dynamic view of patentable subject matter has been a part of a robust United States patent system that has been spectacularly successful in spurring innovation.

In its assessment of patentable subject matter in this case, the Federal Circuit adopted a machine-or-transformation test as the sole test for determining whether process inventions are protectible. But this test when applied is very ambiguous. If applied statically, it could be understood to require that patentable inventions show some kind of "physical" or "tangible" element.

A static application of the machine-or-transformation test is possible – indeed likely – because the wording of the test goes back this Court's 1876 decision in *Cochrane v. Deener*,[12] when modern cutting-edge technologies such as artificial intelligence, genetic programming, and human-machine communications were not at all visible on the horizon. Therefore, the wording of this test implicitly reflects the fact that at that time patentable inventions typically had a "physical" or "tangible" phenotype – i.e. patentable inventions were typically tied to a mechanical or electromechanical machine, or to a process, in then-known areas of industry.

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[12] *Cochrane v. Deener*, 94 U.S. 780, 788 (1876).

TELES submits that such (possible) application of the machine-or-transformation test would be totally unacceptable if the United States patent system is to continue encouraging innovation in the future. Such a static test would largely exclude innovations in the cutting-edge technologies of the 21st century and beyond, where frequently technological break-throughs will no longer be tied to any kind of tangible machine or process. Clearly the future economic strength of the United States will rely significantly on such cutting-edge technologies, not "physical" or "tangible" inventions.

Instead of the static machine-or-transformation test, TELES respectfully suggests that this Court take the opportunity of this case to retain the flexible, visionary approach of its precedents on patentability. More particularly, TELES submits that patentability should not depend on the "phenotype" of an invention, but rather on the nature of its contribution to the state of the art. As long as the innovation makes a nontrivial contribution to the field of "useful arts," as authorized in the Constitution and defined by Congress in Sections 100(b) and 101, it should be immaterial which field of human endeavor the invention ultimately benefits.

The proper test would also implement the "long-established principles" that "laws of nature, natural phenomena, and abstract ideas"[13] are excluded from the protection because – if taken alone – they inherently contribute no nontrivial, practical application to the field of useful arts.

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[13] *Diehr*, 450 U.S. at 185.

In addition, an inflexible machine-or-transformation test as the sole standard for determining patentable subject matter has repeatedly been rejected by this Court. In *Benson*, the Court duly noted the language of *Cochrane* concerning transforming an article to a different state or thing, and other older cases.[14] But the Court went on to explain that its prior precedents did not set out exclusive requirements for deeming a process patentable:

> It is argued that a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a "different state or thing." We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents.[15]

Recognizing that *Cochrane* and other early decisions pertained to mechanical inventions conceived in a bygone era, the Court made clear that it was using a dynamic standard: "It is said we freeze process patents to old technologies, leaving no room for the revelations of the new, onrushing technology. Such is not our purpose."[16]

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[14] *See Gottschalk v. Benson*, 409 U.S. 63, 68-71 (1972) (*citing Waxham v. Smith*, 294 U.S. 20, 22 (1935); *Smith v. Snow*, 294 U. S. 1 (1935); *Expanded Metal Co. v. Bradford*, 214 U.S. 366, 385-86 (1909); *The Telephone Cases*, 126 U.S. 1, 534, 535, 538 (1887); *Tilghman v. Proctor*, 102 U. S. 707, 721 (1881); *Cochrane v. Deener*, 94 U.S. 780, 785, 787-88 (1876); *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 111, 112, 113 (1854)).

[15] *Benson*, 409 U.S. at 71.

[16] *Id.*

Consistent with *Benson*, in *Flook* this Court again explicitly rejected the argument that patentable processes should be limited to those meeting static tests used in earlier decisions:

> The statutory definition of "process" is broad. An argument can be made, however, that this Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a "different state or thing." As in *Benson*, we assume that a valid process patent may issue even if it does not meet one of these qualifications of our earlier precedents.[17]

The problem with the claimed invention in *Flook*, as the Court later explained in *Diehr*, was not lack of any machine or transformation, but lack of any specific contribution over the prior art apart from an unpatentable algorithm:

> The [Flook] application, however, did not purport to explain how these other variables were to be determined, nor did it purport "to contain any disclosure relating to the chemical processes at work, the monitoring of the process variables, nor the means of setting off an alarm or adjusting an alarm system. All

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[17] *Parker v. Flook*, 437 U.S. 584, 589 n.9 (1978) (*quoting Cochrane*, 94 U.S. at 787).

> that it provides is a formula for computing an updated alarm limit."[18]

Also in *Diehr*, this Court characterized the decisions in *Benson* and *Flook* not as setting forth a single, inflexible standard, but rather as modern applications of the "long-established principles" that "[e]xcluded from . . . patent protection are laws of nature, natural phenomena, and abstract ideas."[19] And consistent with its prior cases, the Court in *Diehr* identified transformation as just one example of patent-protectible functions:

> [W]hen a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (*e.g.*, transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of §101.[20]

Although some observers consider this Court's precedents concerning patentable subject matter to be irreconcilable, they all stand for one or both of two

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[18] *Diehr*, 450 U.S. at 186-87 (*quoting Flook*, 437 U.S. at 586); *see also Chakrabarty*, 447 U.S. at 315 (iterating that the Court's precedents were consistent with Section 101's "[b]road general language" and explaining that "*Flook* did not announce a new principle that inventions in areas not contemplated by Congress when the patent laws were enacted are unpatentable per se.").

[19] *Diehr*, 450 U.S. at 185.

[20] *Id.* at 192.

propositions. First, trivial inventions that do not specifically advance publicly available knowledge are not patentable. Second, the standards for patenting processes should be broadly applied and dynamically considered, limited only by the three exclusions for patentable subject matter: laws of nature, natural phenomena, and abstract ideas.

2. A Developed European Patent System Supports Investment In Innovation[21]

In Europe, the most important source of patent law is the European Patent Convention,[22] which in 1973 established the European Patent Organization. The now-35-member European Patent Organization (including all EU countries) operates the European Patent Office (EPO), which the EPC authorizes to grant patents on behalf of all member states.

Article 52 of the EPC broadly defines patentable subject matter:

> 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.[23]

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[21] TELES gratefully acknowledges the contributions to this section of Dr. Ralph Nack of Bird & Bird LLP, Munich.

[22] Convention on the Grant of European Patents of 5 October 1973, as revised by the Act revising Article 63 EPC of 17 December 1991 and the Act revising the EPC of 29 November 2001, art. 52, *available at* http://www.epo.org/about-us/publications/procedure/epc-2000.html [hereinafter EPC].

[23] Art. 52 ¶ 1 EPC

Article 52 of the EPC also lists certain inventions – including "programs for computers" – that if claimed "as such" are not regarded as inventions in a field of technology.[24] But given several decisions by the EPO technical boards of appeal (including those discussed below), in practice this list of exclusions from patentability is essentially meaningless.

Significantly, it is widely accepted that under the EPC patentability is not limited to a specific "phenotype" of innovations. In particular, a "machine-or-transformation test" suggesting a limitation to "physical" or "tangible" inventions is completely alien to European patent-law doctrines.

For example, since a 2000 decision of an EPO board of appeal – known familiarly as the Pension Benefits case – it is settled caselaw of the EPO and the courts of the EPC member states that patentability will be examined by applying a two-step test: First, under Article 52 of the EPC, the invention must be examined to determine whether it is – if considered as a whole – an invention in a field of technology. Second, under Article 56 of the EPC, the invention must be assessed to determine whether it makes a nonobvious contribution (i.e., "involve[s] an inventive step") to the state of the art in a field of technology, or whether its contribution to the art is in a field of human endeavour not considered to be technology.[25]

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[24] Art. 52 ¶¶ 2-3 EPC.

[25] *See* Art. 56 EPC; *see also* Case T 931/95, Controlling pension benefits system/PBS Partnership, O.J. E.P.O. 2001, 441 (2000) [hereinafter Pension Benefits].

The first requirement is fulfilled if the claimed subject matter contains technical elements – i.e., is somehow linked to a field of technology. It is important to note, as did the EPO board in the Pension Benefits case, that it is immaterial whether or not the "technical elements" of the claimed invention are new or even inventive:

> There is no basis in the EPC for distinguishing between "new features" of an invention and features of that invention which are known from the prior art when examining whether the invention concerned may be considered to be an invention within the meaning of Article 52(1) EPC. Thus there is no basis in the EPC for applying this so-called contribution approach for this purpose.[26]

That a patentable invention may combine technical and nontechnical elements was confirmed in a 2002 EPO board decision:

> It is legitimate to have a mix of technical and "non-technical" features (i.e. features relating to non-inventions within the meaning of Article 52(2) EPC) appearing in a claim, even if the non-technical features should form a dominating part.[27]

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[26] T 931/95, Pension Benefits.

[27] Case T 641/00, Two identities/Comvik, O.J. E.P.O. 2003, 352 (2002); *see also* Case T 258/03, Auction method/Hitachi, O.J. E.P.O. 2004, 575 (2004); Case T 172/03, Order management/ Ricoh, O.J. E.P.O. __, __ (2003), *available at* http://www.epo.org/ patents/appeals/search-decisions.html (search T_0172/03).

But the fundamental doctrine underlying this two-part test existed in European patent law from the very beginning, even before the test was formally introduced into EPO caselaw. For example, the fundamental doctrine was discussed in a 1986 EPO board of appeal decision:

> Generally speaking, an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from protection by the mere fact that for its implementation modern technical means in the form of a computer program are used. Decisive is what technical contribution the invention as defined in the claim when considered as a whole makes to the known art.[28]

With respect to computer programs, the EPO examination guidelines describe this fundamental doctrine as providing a "technical effect":

> [I]f a computer program is capable of bringing about, when running on a computer, *a further technical effect going beyond these normal physical effects*, it is not excluded from patentability. *This further technical effect may be known in the prior art.* A further technical effect which lends technical character to a computer program may be

[28] Case T 208/84, Computer-related invention/Vicom, O.J. E.P.O. 1987, 014 (1986); *see also* Case T 6/83, Data processor network/IBM, O.J. E.P.O. 1985, 67 (1988); Case T 1002/92, Queueing system/Pettersson, O.J. E.P.O. 1995, 605 (1994).

> found e.g. in the control of an industrial process or in processing data which represent physical entities or in the internal functioning of the computer itself or its interfaces under the influence of the program and could, for example, affect the efficiency or security of a process, the management of computer resources required or the rate of data transfer in a communication link. As a consequence, a computer program may be considered as an invention within the meaning of Art. 52(1) if the program has the potential to bring about, when running on a computer, a further technical effect which goes beyond the normal physical interactions between the program and the computer.[29]

It is important to note that, according to the EPO examination guidelines, any kind of computer-related invention passes the test of Article 52 of the EPC as long as "technical elements" such as display units, servers, or networks are mentioned in the patent claim.

The second step of the patentability test is illustrated in the Pension Benefits EPO board decision, where an improved algorithm for administrating a pension fund was deemed unpatentable:

> Indeed, the improvement envisaged by the invention according to the application is an

[29] European Patent Office, *Guidelines for Examination in the European Patent Office* C-IV, 2.3.6 (2009) (emphasis added), *available at* http://www.epo.org/about-us/publications/procedure/guidelines-2009.html [hereinafter *Guidelines*].

> essentially economic one, i.e. lies in the field of economy, which, therefore, cannot contribute to inventive step.[30]

In sum, despite the sometimes-restrictive effect of the two-step patentability test, under the EPC patentable subject matter is clearly not limited to a specific "phenotype" of innovations. Limitations to "physical" or "tangible" inventions are completely alien to European patent-law doctrines.

B. Harmonizing Patent Systems Supports Investment In Innovation

As the discussion above demonstrates, the standards for patentability in the United States and Europe are largely harmonized. Both jurisdictions' patent laws include expansive, dynamic views of patentable subject matter for nontrivial inventions. In both patent systems, the concept of patentability avoids any limitations to a specific "phenotype" of innovations, and eschews any carve-outs for particular industries or end-uses.

TELES submits that this Court should confirm that the test for patentability in the United States does not impose restrictions that are alien to other very successful patent systems in the world. It is in the interest of any nation not to deviate from globally accepted principles of patent law, but imposing such restrictions would do just that, producing a negative impact on investments made by international companies in that nation. The

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[30] T 931/95, Pension Benefits.

flow of capital follows robust patent systems, such as the United States patent system, that feature broad, dynamic views of patentable subject matter.

In contrast, underdeveloped patent systems pose substantial risk for investment in innovation, effectively turning it away. These patent systems present uncertain outcomes for obtaining and enforcing effective patents and consequently deter capital expenditure in research and development and international market expansion.

For years, international entrepreneurs shied away from investing in innovation in China, India, and other countries marred with a public perception of having weak patent systems.[31] The uncertainties of whether a patent would be awarded for innovation and whether a patent would be enforceable removed countries with weak patent systems from consideration for global market expansion until recent years.[32] Because economic progress relates to technological progress, and because effective patents are strong drivers of both these forms of progress, countries with weak patent systems enjoy less economic and technological progress than do countries with robust patent systems.

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[31] Botta & Tsai, *Globalization is a Catalyst for Change in Intellectual Property Systems*, *supra* at 1; Eric S. Langer, *China Today: Intellectual Property Protection in China: Does it Warrant Worry?*, (2007), *available at* http://biopharm international.findpharma.com/biopharm/article/article Detail.jsp?id=423187.

[32] Arora & Ceccagnoli, *Patent Protection, Complementary Assets, and Firms' Incentives for Technology Licensing*, *supra* at 296; John W. Sutherlin, *Intellectual Property Rights: The West, India, and China*, 8 PGDT 399, 410 (2009).

For example, recognizing the importance of effective patents, China made a first major overhaul of its patent system in the 1980s and since then has sought continuous reforms to make that country an attractive option for global patenting strategies.[33] In order to change public perceptions of having a weak patent system, China joined key international patent agreements, including the Paris Convention and the Patent Cooperation Treaty, among others. As a World Trade Organization (WTO) member, China has developed its patent system to be in line with the requirements for compliance the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).[34] This has helped turn the tide of negative public perception of China's intellectual-property laws.[35] Part of China's recent and substantial economic growth is attributed to its attempts to create a stronger patent system and effective processes for enforcing rights, which have begun to change public perceptions and help China evolve into a strong presence in the global economy.[36]

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[33] Lulin Gao, *China's Patent System and Globalization*, 51(6) Research-Technology Management 34 (2008); Du Guodong, *Introduction of China's Intellectual Property System*, (2008), *available at* http://English.gov.cn/2008-06/14/content_1016453.htm.

[34] Gao, *China's Patent System and Globalization*, *supra* at 35.

[35] Botta & Tsai, *Globalization is a Catalyst for Change in Intellectual Property Systems*, *supra* at 12; Guodong, *Introduction of China's Intellectual Property System*, *supra*.

[36] Langer, *China Today: Intellectual Property Protection in China: Does it Warrant Worry?*, *supra*; Sutherlin, *Intellectual Property Rights: The West, India, and China*, *supra* at 410.

In contrast, India's patent system is still widely regarded as seriously flawed. India's patent system has a poor infrastructure and slow processes for enforcing patent rights.[37] These perceptions negatively impact India's economy, with relatively ineffective patent protection offering little incentive for investing in research and development.

Just as poor infrastructure and ineffective enforcement mechanisms are hallmarks of weak patent systems, an inflexible machine-or-transformation test as the sole test for the patentability of processes would weaken the Nation's patent system, and concomitantly lessen the incentives for inventing in this country. Confirming that the standards of patentability are broad and dynamic, remaining harmonized with robust patent regimes such as Europe's, will maintain the effectiveness of patents in the United States. And although the United States patent system, like all others, has its problems, a broad and dynamic view of patentable subject matter is not one of them.

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[37] Botta & Tsai, *Globalization is a Catalyst for Change in Intellectual Property Systems, supra* at 2-3.

CONCLUSION

Innovation is dynamic; encouraging innovation therefore requires that the standards for patentable subject matter also be dynamic. And the patent system's incentives to innovate apply only as broadly as the scope of patentable subject matter. The Federal Circuit's machine-or-transformation test gives cause for serious concern that patentability will be limited to "physical" or "tangible" implementations ("phenotypes") of technical developments, largely excluding innovations in current and future cutting-edge technologies. To further the constitutional and statutory goals of the patent system, TELES respectfully suggests that this Court retain an expansive, flexible test for patentability that ensures that an invention is patentable if it makes a specific, nontrivial contribution in the field of "useful arts" – i.e., the four broad categories of patentable subject matter identified in the patent statutes.

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