



2024:DHC:5708



* **IN THE HIGH COURT OF DELHI AT NEW DELHI**

% **Reserved on: 30th April 2024**
Pronounced on: 30th July 2024

+ **C.A.(COMM.IPD-PAT) 26/2021**
AB INITIO TECHNOLOGY LLC Appellant
Through: Mr. Vineet Rohilla and Mr. Tanveer
Malhotra, Advocates.

versus

ASSISTANT CONTROLLER OF PATENTS AND DESIGNS
..... Respondent
Through: Mr. Harish Vaidyanathan Shankar,
CGSC alongwith Mr. Srish Kumar
Mishra, Mr. Alexander Mathai
Paikaday, Mr. Krishnan V. and Mr.
Lakshya Gunawat, Advocates.

+ **C.A.(COMM.IPD-PAT) 447/2022**
AB INITIO TECHNOLOGY LLC Appellant
Through: Mr. Vineet Rohilla and Mr. Tanveer
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versus

THE CONTROLLER OF PATENTS Respondent
Through: Mr. Harish Vaidyanathan Shankar,
CGSC alongwith Mr. Srish Kumar
Mishra, Mr. Alexander Mathai
Paikaday, Mr. Krishnan V. and Mr.
Lakshya Gunawat, Advocates.

CORAM:
HON'BLE MR. JUSTICE ANISH DAYAL

JUDGMENT

ANISH DAYAL, J.

1. These appeals challenge rejection of patent application Nos.6500/DELNP/2011 and No.6501/DELNP/2011 [**'subject applications'**] on the ground that subject matter is not patentable under Section 3(k) of the Patents Act, 1970 [**'the Act'**], since claims relate to

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C.A.(COMM.IPD-PAT) 26/2021 & 447/2022

1 of 40



2024:DHC:5708



computer program *per se* or algorithm. Patent application No.6500/DELNP/2011 was also rejected on the ground of not being a valid divisional application under Section 16 (1) of the Act.

Factual Background

2. Bibliographic details of these applications are tabulated as under:

CASE APPEAL NO.	CA (PAT) 26/2021	CA (PAT) 447/2022
APPLICATION NO.	6500/DELNP/2011	6501/DELNP/2011
TITLE	<i>“A Method for Processing Data and a System thereof ”</i>	<i>“A Method for Processing Data and a System thereof ”</i>
APPLICATION DATE	25 th August 2011	
REQUEST FOR EXAMINATION	08 th November 2011	08 th November 2011
PARENT APPLICATION 1167/DELNP/2006 GRANTED ON 27 TH AUGUST 2015		
FER ISSUED ON	23 rd March 2018	28 th September 2018
REPLY TO FER	20 th September 2018	27 th March 2019
HEARING NOTICE	14 th August 2020	08 th June 2020
DATE OF HEARING	14 th October 2020	24 th June 2020
IMPUGNED ORDER DATE	23 rd July 2021	04 th August 2020
GROUND FOR	Sections 3(k) and 16,	Section 3(k)

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C.A.(COMM.IPD-PAT) 26/2021 & 447/2022

2 of 40



2024:DHC:5708



REJECTION	non-compliance of formal objections	
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3. Both subject patent applications are divisional applications of Indian Patent Application No. 1167/DELNP/2006 which proceeded to grant of patent *vide* Indian Patent No.268384 [***parent application***].

4. The appellant is a company incorporated in USA and filed the subject applications on 25th August 2011. The parent application is a National Phase application No. PCT/US2004/030144 dated September 15 2004. Objection 2 of the First Examination Report [***FER***] stated that subject application was not patentable under Section 3(k) of the Act, since method Claims 1-17 related to a set of sequences used to implement an algorithm, Claims 18-19 are software products having computer executable instructions, and Claims 20-21 do not disclose any constructional of structural features but represent an algorithm. Objection 6 of the FER stated that the subject application does not stand as divisional application under Section 16(1) and 16(3) of the Act, as there is no distinct invention compared to granted claims of the parent application.

5. In the response to the FER, claims of the subject patent applications were substantially amended to overcome the objections, and Claims 1-23 were filed along with the response. In the hearing notice, respondent maintained the objections *inter alia* under Section 3(k) and, for the former application, Sections 3(k) and 16 of the Act.

6. During the hearing, appellant raised objections especially with regard to non-patentability under Section 3(k) and non-compliance with



Section 16(1) of the Act. Detailed written submissions were filed on 29th October 2020, along with amended claims and other documents.

7. Subject matter of the patent application would be evident from Claim 1 of the said application extracted as under:

1. A computer implemented method for processing data including:
 - identifying, by an identification processing module (1706), a plurality of subsets of fields of data records of a data source, each subset including at least a first field and a second field;
 - partitioning by a partition component (1714), data records into multiple parts independent of values occurring in the fields of those data records;
 - for each of the multiple parts, forming, by an attach value component (1718), data elements from the data records in that part, each data element identifying the first field and the second field of a given subset and identifying corresponding values occurring in the first and second fields;
 - for each part of the multiple parts, determining, by a rollup component (1720), counts based on the values that occur in the first field and the values that occur in the second field of the data elements in that part;
 - combining by a rollup component (1722), at least some of the counts from data elements of different parts to generate accumulated counts;
 - for each of one or more of the plurality of subsets of fields, selecting by a global rollup component (1724), a distribution of values that are most frequently occurring in the second field of a plurality of records based on the accumulated counts, the plurality of records having a common value occurring in the first field;
 - identifying by a functional relationship processing module (1728), one or more of the plurality of subsets of fields as having a functional relationship, based at least in part on the selected distribution of values; and
 - presenting, by a presentation component, the identified functional relationship to a user.

Submissions on behalf of appellant

8. Appellant's contention was that subject application was a data processing method which involved the following essential elements:

- a. An identification processing module – which created a plurality of subsets of fields of data records from a data source, with each subset including at least a first field and a second field;
- b. A partition component – which partitions data records into multiple parts independent of values occurring in the fields of those data records;



- c. An attach value component –forming data elements from the records for each of the multiple parts, with each data element identifying the first field and the second field of the given subset and corresponding values occurring in those fields;
- d. A rollup component – used to determine counts based on the values that occurred in the first field and values that occurred in the second field of the database for each of the part combining at least some of the counts of data elements of different parts to generate accumulated counts;
- e. A global rollup component – for identifying a distribution of values most frequently occurring in the second field of a plurality of records based on the accumulated counts;
- f. A functional relationship processing module – which would identify one or more of the plurality of subsets of fields as having a functional relationship based on a selected distribution of values;
- g. A presentation component – used to present the identified functional relationship to a user.

9. This, appellant claims would eventually result in a ‘*technical effect*’ and therefore, cannot suffer on grounds of non-patentability under Section 3(k) of the Act. Attention was drawn in this regard to decision in ***Ferid Allani vs. Union of India and Ors.***, 2019:DHC:6944, where this Court held that patent application in field of computer programs would have to be assessed for ‘*technical contribution*’, having ‘*technical effect*’ and ‘*technical advancement*’ that would make such programs patentable.



2024:DHC:5708



10. This was relied upon *inter alia* by a Coordinate Bench of this Court in **Microsoft Technology Licensing, LLC v. Asstt. Controller of Patents & Designs**, 2023:DHC:3342 where a patent application for “METHODS AND SYSTEMS FOR AUTHENTICATION OF A USER FOR SUB-LOCATIONS OF A NETWORK LOCATION” by Microsoft was first refused under Section 3(k) by the Patent Office, but set aside in appeal, by this Court. It was held that ‘technical effect’ is achieved by improved security of authentication process for accessing sub-location of a network location, and that the invention provided a technical solution to security risks associated with using cookies to authenticate users for sub-locations within a network location.

11. Relying on these decisions, counsel for the appellant submitted that the method claimed in the subject application, essentially involved communication between different hardware elements, such as a computer processor, and enabled associated hardware of a computer, engaged in data profiling, to increase the speed of functional dependency analysis and hence, net effect in saving computer resources. It was asserted that the subject invention was not theoretical in nature, nor was an abstract formula, but required multiple steps, each of which was fundamentally technical in nature and involved identifying, partitioning, determining, combining and presenting data from stored data sets and doing so in a manner that causes a machine to carry out rapid and efficient performance of functional dependency analysis which otherwise was time consuming and required extensive computational resource. A technical effect of subject invention, therefore, went beyond the “normal interaction of



software with a general-purpose computer”, as stated in the impugned order.

12. Appellant’s counsel submitted that various examples were given in specifications regarding aspects of invention and its various advantages. Aspects of the invention can be useful in profiling data sets with which the user is not familiar. The information that is automatically determined, or which is determined in cooperation with the user, can be used to populate metadata for the data sources, which can then be used for further processing.

13. It is asserted by appellant’s counsel that the techniques described and claimed in the subject application therefore provide two ‘technical effects’: (1) increasing the speed of functional-dependency analysis; and (2) concurrently saving computer resources.

Submissions on behalf of respondent/Patent Office

14. Mr. Harish Vaidyanathan Shankar, Central Government Standing Counsel [‘CGSC’], refuted the contentions of the appellant and essentially stated that this was a data processing method and would achieve data profiling at best. He submitted that various components like partition component, attach value component, rollup component, global rollup component and presentation component are software instruction modules to perform the steps mentioned in the process claims.

15. Thus, he submitted the invention was merely a process/software for processing data by first partitioning data into multiple parts i.e. randomly/logically selecting data records of any two data field of the



2024:DHC:5708



database or dataset, counting the occurrence of each of the data values in each field, determining statistics of co-occurrence of data values in the second field, and common in the first field, driving possible functional dependency between the two data fields and creating and storing in a metadata store, the profile information or data profile created. This profile information includes statistics or summary data computed through counting a number of occurrences for each set of distinct values for a field.

16. This profiling is performed using profiling module i.e. a set of instructions which reads records from a data source, computes statistics and other descriptive information that reflect the contents of the data set, writes those statistics and descriptive information in the form of a '*profile*' into the metadata store, which can then be examined through the user interface or any other module with access to the metadata store. The statistics in the profile preferably include a histogram of values in each field, maximum, minimum and mean values, and samples of the least common and most common values.

17. It was submitted that the present application represents a method to perform data profiling or summary of data i.e. metadata stored in the metadata store. The end result of the method employed is the profiled data i.e. metadata. The data or database itself is not patentable and is a subject matter for copyright.

18. The present invention performs data processing or data profiling based on determining co-occurrences statistics. This kind of data profiling or co-occurrence statistics is performed by analyzing data records in



various data fields of the database or data file. This is evident from the following part of the Specifications, extracted as under:

"Quantities characterizing a relationship between fields can provide an indication of which fields may be related by different types of relationships. The user may then be able to examine the data more closely to determine whether the fields truly form that type of relationship"

19. The task performed by the claimed method or software is, therefore, a non-technical process. It is in the nature of sorting or arranging data based on certain common fields. For achieving the said purpose, the software makes the identification and does the sorting. Such sorting does not on its own establish presence of a ‘*technical effect*’.

20. Essentially, the CGSC claimed that the whole process did not affect the internal functioning of a computer, but merely analyzes data and stores summary of data in form of metadata, and only represents a set of computer executable instructions for a general-purpose computer, and an algorithm to execute the said instructions in a sequential manner. The said programs did not have any technical effect since they were merely methods.

21. Relying on European Patent Office Guidelines [***EP Guidelines***], he submitted that in this patent application, the claimed invention neither claims any optimization in structured query execution nor improving system throughout, rather the claimed process analyzes the data and profiling module, generates summary of the data based on the occurrences or co-occurrences of data values in the data fields. This summary of data or data profiling is cognitive data or cognitive information relevant to human



users and does not contribute to producing a technical effect. Hence, EP guidelines also exclude such subject matter from patentability (“... conversely, data structures defined solely by the cognitive information they store are not considered to contribute to the technical character of the invention beyond the mere storage of data...”). Therefore, the claimed subject matter does not show any ‘technical character’ or ‘technical effect’.

22. He further stated that the decision in **Microsoft** (*supra*) was distinguishable, in that the claim itself provided a system for authentication of a user for sub-locations of a network location and had a defined intended technical effect which was recognized by the Court. The Court had held that it provided a technique for authentication of a user for accessing one or more sub-locations of a network location involving the use of two different cookies and to prevent unauthorized access and effectively defusing attempts of malicious users to gain access to the network. This, the CGSC contended, was quite different from what the appellant was seeking to canvass, as an intended ‘technical effect’ of the subject application.

Evolution of Section 3(k) of the Patents Act

23. Since the discussion focuses on the scope, width, and ambit of Section 3(k) of the Act, it would be instructive to give a brief overview of the legislative evolution, the opinion of commentators, and Courts.

LEGISLATIVE HISTORY OF SECTION 3(K)



24. The legislative aspect has been usefully elaborated in a decision by a Coordinate Bench of this Court in **Microsoft Technology** (*supra*). No purpose would be served in reinventing the wheel and repeating the same. However, for purposes of ease of reference, the significant milestones in the evolution of Section 3(k) of the Act are summarized as under:

(i) Constitution of the Committee under Justice Bakshi Tek Chand in 1948 for review of patent laws in India – Recommendations were submitted in April 1950, basis which the Bill No.59 of 1953 was presented in Parliament. This introduced provisions prohibiting certain categories of inventions from patentability. However, since the Government did not press for this Bill, it lapsed.

(ii) Constitution of the Committee under Justice N. Rajagopala Ayyangar, Retd. Judge of the Supreme Court of India, in April 1957 to review patent laws in India. The report [**Ayyangar Committee Report**] was submitted in September 1959 emphasizing *inter alia* on “*what inventions should be not patentable*”.

(iii) Bill No. 62 of 1965 introduced in Parliament based on the Ayyangar Committee Report added Section 3 under Chapter II titled “*Inventions Not Patentable*”, however, did not include any mention of computer program or algorithm. This Bill eventually lapsed.

(iv) Bill No. 120 of 1967 was introduced in Parliament reproducing provisions of Section 3 from the 1965 Bill, and enacted finally as the Patents Act, 1970. There was no mention of computer program or algorithm under Section 3.



(v) The Agreement on Trade Related Aspects of Intellectual Property Rights [***TRIPS Agreement***] entered into force on 01st January 1995 by member nations of the World Trade Organization [***WTO***] for minimum standards for regulation of different forms of intellectual property by national governments. Article 27 provided exclusions to patentability.

(vi) Patents (2nd Amendment) Bill No.49 of 1999 introduced in Parliament with a new entry relating to computer programs inserted as Section 3(k) that read as follows: '*a mathematical or business method or a computer program or algorithm*'. It did not mention the term '*per se*'.

(vii) Joint Parliamentary Committee constituted to consider this Bill of 1999, tabled a report on 19th December, 2001 and recommended insertion of the word '*per se*' along with '*computer program*'. In an attempt to clarify this insertion, the JPC stated *inter alia* that '*the intention here is not to reject them for grant of patent if they are inventions. However, computer programs as such are not intended to be granted patent*'.

(viii) The 1999 Bill was finally passed in 2002 and came into force as the Patents (Amendment) Act, 2002 containing Section 3(k) which read as under – '*a mathematical or business method or computer program per se or algorithms*'.

(ix) Patents (Amendment) Ordinance, 2004 was promulgated with effect from 01st January 2005 with a further clarificatory amendment in Section 3(k) separating computer programs from mathematical methods/business methods/algorithms and excluding from the exception of computer programs '*a technical application to industry or a combination in hardware*'. This Ordinance was not ratified by Parliament.



(x) Post the Ordinance, some other Parliamentary developments occurred and deliberations in that regard are summarized usefully in this paragraph from **Microsoft Technology** (supra):

“27. Although the changes introduced by the Patents (Amendment) Ordinance, 2004 were not ratified by the Parliament, however, the Parliament passed Statement of Objects and Reasons to the Patents (Amendment) Act, 2005 [“2005 Statement of Objects and Reasons”], which endorsed the “technical contribution” approach for patentability of computer-related inventions [“CRIs”]. The 2005 Statement of Objects and Reasons states one of the objects as: “(iii) to modify and clarify the provisions relating to patenting of software related inventions when they have technical application to industry or in combination with hardware;”

28. The Rajya Sabha’s Department Related Parliamentary Standing Committee on Commerce highlighted the need for a clear definition to “per se” under Section 3(k).¹⁷ Later, they also emphasized upon revisiting the Patents Act, 1970 and Copyright Act, 1957 to facilitate twelve (12) inventorship, authorship and ownership by Artificial Intelligence [“AI”].¹⁸ Relevant portions of the “One Hundred and Sixty First Report on Review of the Intellectual Property Rights Regime in India”, is reproduced hereinbelow:

“ARTIFICIAL INTELLIGENCE AND IPR

xx .. xx .. xx

8.6 The Committee was informed that a framework needs to be developed for patenting of algorithms by associating their use to a tangible result. For example, under the AI guidelines of European Patent Office, abstract mathematical methods cannot be patented. However, it is patented if the mathematical method involves the



use of technical means or a device such as computers. Also, linking the mathematical applications and algorithms to practical application makes them a process which could be patented as being practiced in US.

8.7 The Committee recommends the Department that the approach in linking the mathematical methods or algorithms to a tangible technical device or a practical application should be adopted in India for facilitating their patents as being done in E.U. and U.S. Hence, the conversion of mathematical methods and algorithms to a process in this way would make it easier to protect them as patents.”

25. After noting the legislative history, this Court in **Microsoft Technology** (*supra*) opined as under:

“29. The aforementioned legislative history of the provision, Statement of Objects and Reasons to the Patents (Amendment) Act, 2005, the Report of Joint Parliamentary Committee on Patents (Second Amendment) Bill, 1999, the parliamentary debates, et al. point towards the shift in relation to grant of patent protection for CRIs. The legislative discussions also emphasize the need for adopting a clear definition to the term “per se” to ensure accurate and consistent application of the law. The said term was added to make it clear that “computer programs as such” are non-patentable. The intent of the amendment was to allow grant of patents to CRIs that involve a novel hardware component or provide a technical contribution to the prior art(s) beyond the program itself. In other words, if a computer program is used in conjunction with a hardware or results in a technical effect/ solves a technical problem, it may be eligible for patent protection. This amendment brings Indian patent



jurisprudence in line with international practices.”

(emphasis added)

26. The Court further noted the guidelines issued by the Patent Office for examination of Computer Related Inventions [**‘CRIs’**] and observed as under:

“Guidelines issued by the Patent Office for examination of CRIs

31. In 2013, the Office of Controller General of Patents, Designs and Trade Marks [“CGPDTM”] introduced its first guidelines for examining patent applications of CRIs. Two terms were defined: technical effect and technical advancement. These terms are used to assess patent eligibility of a claimed invention in relation to Section 3(k) of the Act. 19 The said guidelines provided seventeen (17) illustrations of CRIs and interprets all of them to be nonpatentable. The necessity of a novel hardware and other features of the said guidelines led to its revision in 2015, wherein a constructive approach towards patentability of CRIs, were introduced. Eleven (11) illustrations were provided, of which, nine (09) were considered patentable and two (02) nonpatentable. Shortly after being released, the same were suspended and subsequently, 2016 CRI guidelines were introduced. These guidelines reflected a return to the 2013 CRI guidelines with a more rigid interpretation of Section 3(k) and were criticized for their lack of clarity and consistency in the examination of CRIs, leading to ambiguity in the industry and also for broadening the exclusions under Section 3(k) of the Act. In response to these concerns, 2017 CRI guidelines were issued which aimed to provide greater clarity and consistency in the examination process of CRIs. Indeed, the



said guidelines had a positive tenor and are more progressive regarding patentability and examination procedure of patent applications of CRIs under Section 3(k) of the Act. The revised 2017 CRI guidelines have done away with the three-step test laid down in the 2016 CRI guidelines and requirement of a novel hardware in conjunction with a computer program (software) when a method claims qua a new computer program in combination with the hardware are being claimed. The focus in the 2017 CRI guidelines appears to be on substance over forms and claims.”

(emphasis added)

27. In *Ferid Allani* (supra), these guidelines were also discussed. The Court held that in consonance with the inclusion of the term ‘per se’, inventions based on computer programs should not be refused patent and the Court has to assess the aspect of ‘technical effect’ and ‘technical advancement’ for determining patentability of CRIs.

28. Clause 3.15 of the CRI Guidelines, 2013 provided examples of technical effect; same is being reproduced herein for ease of reference:

“3.15 Technical Effect:

It is defined for the purpose of these guidelines as solution to a technical problem, which the invention taken as a whole, tends to overcome. A few general examples of technical effect are as follows:

- *Higher speed*
- *Reduced hard-disk access time*
- *More economical use of memory*
- *More efficient data base search strategy*



- *More effective data compression techniques*
- *Improved user interface*
- *Better control of robotic arm*
- *Improved reception/transmission of a radio signal.”*

29. Later, the definitions of ‘*technical effect*’ in Clause 3.15 and ‘*technical advancement*’ in Clause 3.16 were replaced by a more generic phraseology in the 2016 CRI Guidelines per Clauses 4.4.4 and 4.4.5. This was further amended in 2017 CRI Guidelines where it was categorically stated in Clause 4.4.4 that “*in patentability cases, the focus should be on the underlying substance of the invention, not the particular form in which it is claimed*”.

30. In this context, reference may also be made to a Commentary on Patent Law by Justice Prathiba M. Singh (2024, *Thompson Reuters*) wherein a useful analysis of Section 3(k) is provided in para 5-238 to 5-265. The opinion seems to lean towards a restrictive interpretation of Clause 3(k), rather than an expansive one so as to not prevent concepts which have specific application in fields of technology being excluded from patentability. The author states in para 5-242 as under: “*most innovations being carried out in India by small entrepreneurs, start-ups or the bigger IT solution companies are in the area of business methods, computer programs and algorithms. Not protecting them results and not recognizing the strength of such innovations*”. Further, in para 5-244, the author states that if the algorithms which are step-wise description are converted into a code resulting in a technical application, the algorithm transforms and becomes a technical advancement, and, therefore, patentable as they are producing a technical effect.



31. Relevant decisions which have traversed the nuances of Section 3(k) of the Act are as under:

- (i) ***Ferid Allani vs. Union of India and Ors.***, 2019:DHC:6944 – the matter concerned rejection of a patent application for “METHOD AND DEVICE FOR ACCESSING INFORMATION SOURCES AND SERVICES ON THE WEB”. The rejection of patent application was first set aside by a Single Judge of this Court and by a direction in February 2008, the Patent Officer was directed to give reasons for the rejection. In November 2008, Patent Office again rejected the patent application and gave reasons under Section 3(k). The order of Patent Office was appealed and in para 10 of the said decision, it was observed by this Court as under:

10. Moreover, Section 3(k) has a long legislative history and various judicial decisions have also interpreted this provision. The bar on patenting is in respect of ‘computer programs per se....’ and not all inventions based on computer programs. In today's digital world, when most inventions are based on computer programs, it would be retrograde to argue that all such inventions would not be patentable. Innovation in the field of artificial intelligence, blockchain technologies and other digital products would be based on computer programs, however the same would not become nonpatentable inventions - simply for that reason. It is rare to see a product which is not based on a computer program. Whether they are cars and other automobiles, microwave ovens, washing machines, refrigerators, they all have some sort of computer programs in-built in them. Thus, the effect that such programs produce



including in digital and electronic products is crucial in determining the test of patentability.

(emphasis added)

The Court then remanded the matter for re-examination by the Patent Office in light of the Guidelines issued for CRIs.

(ii) ***Lava International Ltd. v. Telefonaktiebolaget LM Ericsson***

2024:DHC:2698 – in assessing one of the contentions of Lava for revocation of the patent under Section 3(k), a Single Judge of this Court opined as under:

“69. After analysing the CRI Guidelines and the aforementioned judgments, I am of the view that the inventions that are solely directed towards algorithms, mathematical methods, business methods or are computer programmes per se, would not satisfy the test of patentability and would consequently, not be inventions. However, an invention that merely incorporates algorithms, sets of instructions, mathematical or business methods within a method or system, and satisfies all the criteria for patentability, is not inherently non-patentable. Therefore, what has to be seen is that if the algorithms are directed at enhancing the functionality of a system or a hardware component, the effect or the functionality derived by the system or the hardware component is a patentable subject matter However, the algorithm itself is not a patentable subject matter. To illustrate, we may consider the example of a smart thermostat algorithm that dynamically adjusts the heating or cooling of a room in a building based on real-time weather data, occupancy patterns and energy prices. This algorithm, by itself, is a series of computational steps and may not be patentable. However, the



implementation of this algorithm within a device, even if the said device is a general-purpose computer, in such a way that it transforms the computer's capabilities and leads to tangible benefits like reduced energy consumption, cost savings and improved comfort levels for occupants can be considered as a patentable subject matter.

70. It is clear that an invention should not be deemed a 'computer programme per se' merely because it incorporates algorithms and computer executable instructions. In fact, the patentability should be assessed based on its practical application in solving technical problems and the technical advancements it offers. Furthermore, if the subject matter is implemented on a general-purpose computer, but results in a **further technical effect** that improves the computer system's functionality and effectiveness, the claimed invention cannot be rejected as non-patentable for being a 'computer programme per se'. This aligns with the intent behind the qualifier 'per se', introduced by the legislature in the Patent (Amendment) Act of 2002 for computer programmes. Further, the said approach also aligns with the legislative intent behind the patentability of software related inventions, which is evident from the press release issued by the Press Information Bureau dated 27th December, 2004 titled – 'Kamal Nath's statement on the Ordinance relating to Patents (Third) Amendment.'"

(emphasis added)

- (iii) **Microsoft Technology Licensing, LLC v. Asstt. Controller of Patents & Designs**, 2023:DHC:3342 – in assessing an appeal against the rejection of a patent application for "METHODS AND SYSTEMS FOR AUTHENTICATION OF A USER FOR SUB-



LOCATIONS OF A NETWORK LOCATION”, a Single Judge of this Court held as under:

“40. The subject patent provides a technique for authenticating a user for accessing one or more sub-locations of a network location, involving the use of two different cookies. One cookie is used for authentication at the network location, and another at the sub-location. The claimed invention’s technical effect/ contribution is to prevent unauthorized access to sub-locations within the network location by using two different cookies and effectively foiling the attempts of a malicious user to gain access to network sub-locations by illegally obtaining cookies from another user. The technical effect is the improved security of the authentication process for accessing sub-locations of a network location. Prior to this invention, using only one cookie to authenticate a user for both the network location and sub-locations posed a security risk, as malicious users could steal cookies from others and gain unauthorized access. By using two different cookies/ two-tier authentication – one for the network location and another for the sub-location – the subject patent provides a more secure authentication process that is not vulnerable to cookie theft. The technical contribution of this invention is the technique of using two different cookies for providing authenticated access to a client computer accessing a sub-location(s) within a network location, which simplifies user interaction with content received from feeds. Overall, the subject patent enhances the security of accessing sub-



locations of network locations and streamlines the user experience.

41. During the hearing, the Patent Office defended its decision by arguing that the invention is at the user-interface level and, hence non-patentable. This understanding, absent in the impugned order, also cannot be sustained. This is because the subject patent's technical effect and contribution goes beyond the user-interface level. The invention provides a technical solution to the security risk associated with using cookies to authenticate users for sublocations within a network location. The use of two different cookies for providing authenticated access to a client computer accessing sub-location(s) in a network location ensures that even if both cookies are stolen by a malicious user, the malicious user cannot gain unhindered access to other sublocations within the network location. This technical solution goes beyond the user-interface level and provides a technical effect and contribution, that is patentable. The technical aspects of the invention, such as the use of cookies and two-factor authentication, are fundamental to the functioning of computer networks and are not limited to the user-interface. These aspects are vital for safeguarding access to network locations and their corresponding sublocations, representing a critical concern for both businesses and individuals. Additionally, the use of multiple cookies for authentication is a technical solution that goes beyond mere user interface design and involves complex network-level communication protocols. The technical aspects of the invention



are closer to the heart of computer and network technology, rather than user-interface. Furthermore, the fact that the invention improves the user experience does not necessarily mean that it is limited to the user-interface. User experience is undoubtedly an important aspect of any technology, and improvements in this area result from technical advancements at various levels in the computer architecture. The subject patent significantly enhances user experience; however, this improvement is a result of the technical solution it provides at a deeper level within the network. This solution enables more secure and efficient and streamlined access to network locations and sub-locations, demonstrating the impact of the underlying technical advancements. Therefore, it would be incorrect to exclude the claimed invention on the basis that it is limited to user-interface. The technical aspects discussed above are fundamental to the functioning of computer networks and provide a significant technical contribution to the field.”

(emphasis added)

- (iv) In a recent decision by a Single Judge of this Court in **Microsoft Technology Licensing, LLC v. Assistant Controller of Patents and Designs**, 2024:DHC:3547, the aspect of Section 3(k) of the Act was considered again in context of an appeal against refusal of grant of patent application titled “REVERSIBLE 2-DIMENSIONAL PRE-/POST-FILTERING FOR LAPPED BIORTHOGONAL TRANSFORM”. After



citing *Lava International Limited* (*supra*) with approval, the Court in *Microsoft Technology* (*supra*) (2024) held as under:

“33. In light of the above discussion, it is clearly established that in case of an invention involving computer programmes, to circumvent the limitations imposed by Section (k) of the Act, a patentee must demonstrate that the overall method and system disclosed in the patent application, upon implementation in a general-purpose computer, must contribute directly to a specific and credible technical effect or enhancement beyond mere general computing processes. Therefore, the inventive contribution of a patent should not only improve the functionality of the system but also achieve an innovative technical advantage that is clearly defined and distinct from ordinary operations expected of such systems.”

(emphasis added)

32. Counsel for appellant relied on extracts from Guidelines for Examination of the European Patent Office. Para 3.6 of the said Guidelines provided for computer programs being excluded from patentability under Article 52(2)(c) and 52(3) if claimed “as such”, excluding those where there was a ‘technical character’. Attention in particular was drawn to para 3.6.4 which related to database management systems and information retrieval. The said Guidelines stated *inter alia* as under:

“3.6.4 Database management systems and information retrieval

Database management systems are technical systems implemented on computers to perform the technical tasks of storing and retrieving data



using various data structures for efficient management of data. A method performed in a database management system is thus a method which uses technical means and is therefore not excluded from patentability under Art. 52(2) and Art. 52(3).”

(emphasis added)

33. Reliance was also placed on a decision of the Technical Board of Appeal of the European Patent Office dated 17th October 2019 in **Microsoft Technology Licensing LLC** in Case No. T 0697/17 – 3.5.07. The appeal was from a decision of the Examination Division refusing the subject European Patent Application. The objection was taken for lack of inventive step on the basis of general-purpose computer features. The Appeal Board opined as under:

“5.3.1 It is clear from the very language of claim 1 that the method steps are performed by components of a relational database system, namely a parser, a query optimiser and a query execution engine.

A database management system uses data structures, software components and processing techniques for storing, controlling and processing data, and for providing an interface to let the user create, read, update and delete data. The internal data structures, such as an index and a query tree, and components, e.g. a parser, a query optimiser and a query execution engine, are used purposively for storing data to a computer storage medium and retrieving data from the medium. As explained above, the established case law considers these to be technical effects (G 3/08, reasons 10.8.5; T 1569/05 of 26 June 2008, reasons 3.6). The data structures used for providing access to data and for optimising and processing queries are



functional data structures since they purposively control the operation of the database management system and of the computer system to perform those technical tasks. While a database system is used to store nontechnical information and database design usually involves information-modelling aspects which do not contribute to solving a technical problem, the implementation of a database management system involves technical considerations. Therefore, a database management system is not a computer program as such but rather a technical system (see also decision T 1924/17, reasons 9, 13 and 14)."

(emphasis added)

34. Further reliance was placed on a decision of the Technical Board of Appeal of the European Patent Office dated 09th May 2018 in the appeal filed by **SAP SE** in Case No. T 2330/13 – 3.5.07. Appeal was against refusal of a European Patent Application for claims on the basis that they only provided a solution of the mathematical problem of checking rules and was not inventive. In the decision, the Board opined as under:

"5.7.10 Regarding the present case, the Board recognises that performing the method in parallel usually results in more efficient evaluation of the selection conditions. The "desired number of bit sub-matrices" can be tuned, within the constraints of a particular data set, so that the desired degree of parallelism is achieved. Unlike the case of T 1784/06 (supra), both the present claims and the originally filed description (see page 14, lines 10 to 12) describe parallel processing.

The Board therefore considers that, as in decision T 1321/11 (supra), the features supporting parallel processing contribute to the technical



character of the claim. In the present case, a more concrete parallel hardware architecture does not have to be claimed, since it is credible that efficiency gains can be achieved for different technical means used to perform the sub-tasks in parallel.

5.8 In summary, even though the task performed by claim 1 is of a non-technical nature (see point 5.6 above), the specific claimed bit (sub-)matrices, bit strings and steps of the method, especially those of splitting the bit matrix, forming bit strings representing the selection and restriction conditions and determining inconsistent pairs of selection conditions when performed by parallel processing, do contribute to the technical character of the invention and should be taken into account when assessing inventive step. Similar conclusions apply to the other claims of the main request.”

(emphasis added)

Analysis of this Court

Objection under Section 3(k) of the Act

35. In light of the above decisions, submissions of the appellant regarding the patent application requires closer scrutiny. As stated in the 2017 CRI Guidelines, it is not the form but the underlying substance which has to be considered for the purposes of analyzing Section 3(k) of the Act. Section 3(k), as noted above, excludes a computer program *per se* or algorithm from patentability. The test which must be applied for determining whether the claim is of a computer program *per se* / algorithm or otherwise is based on determination of whether the said program/algorithm has a technical effect. Some examples of technical effect were given in the 2013 CRI Guidelines (*supra*) which *included*



2024:DHC:5708



higher speed, reduced hard-disks access time, more economical use of memory, more efficient database search strategy, more effective data compression techniques, improved user interface etc. Even though, these examples were not included in the 2016 CRI Guidelines, they gave a useful indication of what, practically, would come within the radar for determining ‘technical effect’.

36. Axiomatically, any method or process through an algorithm/computer software is meant to solve a problem. The problem may be relatable to a human user which needs computer software to achieve a more efficient conclusion, or it may be relatable to processing systems which apply the methods and achieve faster computation. This distinction understandably can be quite blurred and, therefore, no distinct definition or detailing can be provided which encompasses all possible cases. However, the trend of the Courts, as evident from the decisions cited above in paragraph 31 is to give a restrictive interpretation to the exclusion in Section 3(k) of the Act, and adopt a more benevolent interpretation to what would amount to ‘technical effect’. This approach aligns itself with the fast progress of technology, which always evolves incrementally by solving technical/processual problems in order to achieve greater efficiency and better user interface.

37. To put it simply, any hardware [*which is essentially semi-conductor chips and associated circuitry*] has to necessarily work in tandem with a functional code [*which is in a programmable language, converted ultimately into machine language i.e. binary system (bits), understood by the hardware*]. Any processing input is given through a code/program which the hardware processes, providing an output. If Section 3(k) of the



Act is interpreted to mean that anything which is designed merely as an input [code/software] is not patentable, it would be stating the obvious i.e. input and output elements are in distinct silos from pure hardware i.e. semi-conductor chips and circuitry. However, this is not how the Courts have interpreted the inclusion of ‘*per se*’ in this provision.

38. ‘*Technical effect*’ is the *bridge* or the *connect* between an input and the processor. If an ingenious input system/method is able to allow the processor to give a more efficient and faster output and computation, the effect, in this Court’s opinion, would be ‘*technical*’. A ‘*technical effect*’ cannot be just about nuts and bolts, or hardware tweaks and transformations. If an innovative input [in form of a program] allows the hardware to process the output faster, then it would amount to a ‘*technical effect*’. In other words, a well-designed innovative input in the form of a process, system, or method which enhances the computational ability of the processor would undoubtedly result in a ‘*technical effect*’ and which goes beyond the usual ‘*user interface*’. This already finds resonance in the *Lava International* (*supra*) and the 2023 *Microsoft Technology* (*supra*).

39. Using this prism, let us focus on what appellant’s counsel has submitted in favour of technical effect. **Firstly**, it is claimed that the invention increases the speed of functional dependency analysis; **secondly**, it saves computer resources or amount of computation; **thirdly**, it allows data profiling without maintaining a copy of data outside the data source, thereby creating a more efficient storage system; **fourthly**, that profiling of data can be performed parallelly by partition, thereby more efficient processing; **fifthly**, the implementation of the invention is a special purpose probable computer for processing data.



40. The first two aspects find reflection in the following parts of the Complete Specifications, which are extracted as under:

7.2 Field pair selection optimizations

A variety of optimizations can be applied to increase the speed of functional dependency analysis, for example, by filtering pairs of fields at the select pairs component 1706, or by filtering records at the filter component 1712. Some optimizations are based on the recognition that some functional dependency relationships that are discovered by the graph 1700 described above may not as meaningful to a user as others. For a given pair of fields, some of these cases can be detected and filtered out by the select pairs component 1706 based on statistics provided by the profiling module 100, saving computing resources. For example, if all of the values of a first field f_1 are unique (each value occurring in only a single record), then the value of that field f_1 determines the value of the second field f_2 regardless of the values occurring in the field f_2 .

...

For a large number of records, the graph 1700 can increase the speed of testing for functional dependency by processing a small sample of the records first to eliminate field pairs that are highly likely not functionally related before processing all of the records. The graph 1700 can use the filter component 1712 to select a portion of the records. Alternatively, the graph 1700 can use the canonicalize component 1716 to select a portion of the field/value pairs.

...

Operating on information characterizing values of the records in the data sources rather than necessarily operating directly on the records of the data sources themselves can reduce the amount of computation considerably. For example, using census data rather than the raw data records reduces the complexity of computing characteristics of a join on two fields from being of the order of the product of the number of data records in the two data sources to being of the order of the product of the number of unique values in the two data sources.

41. As regards the third aspect of ability to profile data without maintaining a copy, reference is found in the following parts of the Specifications, extracted as under:



2024:DHC:5708



) Profiling the data without maintaining a copy of the data outside the data source can avoid potential for errors associated with maintaining duplicate copies and avoids using extra storage space for a copy of the data.

...

Similar to the profiling module 100, the processing module 120 also reads data directly from a data system in units of discrete work elements. This “data flow” of work elements has the benefit of allowing the data profiling to be performed on large data sets without necessarily copying data to local storage (e.g., a disk drive). This data flow model, described in more detail below, also allows complex data transformations to be performed by a processing module without the source data being first copied to a staging area, potentially saving storage space and time.

42. As regards the fourth aspect, its reflection is found in following parts of Specifications, extracted as under:

The operations may be parallelized according to data value, thereby enabling efficient distributed processing.

...

component 1714. The partition by round-robin component 1714 takes records from the partitions of the *input data set* 402 and re-partitions the records among a number of parallel processors and/or computers in order to balance the work load among the processors and/or computers. The

43. As regards the fifth aspect, reference is made to Claim 23 of 6500/DELNP/2011 and Claim 26 of 6501/DELNP/2011 which indicate that the system claimed is a product which may not be specific to a particular industry but is a special purpose programmable computer for processing data. The said Claims are extracted as under:

23. A system for processing data including one or more processors or computers configured to perform the method steps as claimed in any of claims 1 through 22.

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C.A.(COMM.IPD-PAT) 26/2021 & 447/2022

31 of 40



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26. A system including at least one processor for processing data received from a data source over atleast one input device or port including:: a values processing module configured to accept first information characterizing values of a first field in records of a first data source, the first information including information summarizing a distribution of values of the first field, and second information characterizing values of a second field in records of a second data source the second information including information summarizing a distribution of values of the second field; a relationship processing module configured to compute quantities characterizing a relationship between the first field and the second field based on the first accepted information and the second accepted information, including computing information characterizing a distribution of values in a join of the first data source and the second data source using the first field and the second field, respectively; an interface (116) configured to present information relating the first field and the second field, over at least one output device and/or port; wherein computing the information characterizing the distribution of values in the join of the first data source and the second data source includes combining the summarized distribution of the first accepted information and the summarized distribution of the second accepted information.

44. The appellant, therefore, rightly claims that the invention has necessary structural features which include a processor, a data source, an input device, an output device and processing modules, as well as an interface. The method, therefore, in conjunction with a special purpose computer, allows for a technical effect of faster computation, parallel processing, efficient storage, and ability to assess functional dependency analysis.

45. The claimed invention has intended technical use and technical applications and advantages, and the claim has been designed not to limit the same by specifying one particular use. In this regard, relevant portion



of the Specifications relied upon by appellant's counsel is extracted as under:

Aspects of the invention provide advantages in a variety of scenarios. For example, in developing an application, a developer may use an input data set to test the application. The output of the application run using the test data set is compared against expected test results, or inspected manually. However, when the application is run using a realistic "production data," the results may be usually too large to be verified by inspection. Data profiling can be used to verify the application behavior. Instead of inspecting every record produced by running the application using production data, a profile of the output is inspected. The data profiling can detect invalid or unexpected values, as well as unexpected patterns or distributions in the output that could signal an application design problem.

In another scenario, data profiling can be used as part of a production process. For example, input data that is part of a regular product run can be profiled. After the data profiling has finished, a processing module can load the profiling results and verify that the input data meets certain quality metrics. If the input data looks bad, the product run can be cancelled and the appropriate people alerted.

In another scenario, a periodic audit of a large collection of data (e.g., hundreds of database tables in multiple sets of data) can be performed by profiling the data regularly. For

example, data profiling can be performed every night on a subset of the data. The data that is profiled can be cycled such that all of the data is profiled, e.g., once a quarter so that every database table will be profiled four times a year. This provides an historic data quality audit on all of the data that can be referred to later, if necessary.

...

The statistics obtained by reading from the data source can be used for a variety of uses. Such uses can include discovering the contents of unfamiliar data sets, building up a collection of metadata associated with a data set, examining third-party data before purchasing or using it, and implementing a quality control scheme for collected data. Procedures for using the data processing system 10 to perform such tasks are described in detail below.

46. Respondent's counsel submitted that what has been claimed was cognitive data processing with no technical character. The mention of special purpose or specially configured processors also finds reflection in



the subject patent applications, particularly in the following portions of the Specifications [*Claims 23 and 26 being the system claims in the respective subject applications, already extracted above in para 43*]; extracted as under:

The runtime environment also provides for the profiling module 100 to execute as a parallel process. The same type of graphic representation described above may be used to describe parallel processing systems. For purposes of this discussion, parallel processing systems include any configuration of computer systems using multiple central processing units (CPUs), either local (*e.g.*, multiprocessor systems such as SMP computers), or locally distributed (*e.g.*, multiple processors coupled as clusters or MPPs), or remotely, or remotely distributed (*e.g.*, multiple processors coupled via LAN or WAN networks), or any combination thereof. Again, the

...

the computer where it is executed. All of the functions may be performed on a special purpose computer, or using special-purpose hardware, such as coprocessors. The software may be

47. The technical effect, therefore, is claimed at the system level between different processors and modules to increase the speed of functional dependency and workload distribution by parallel processing. This, the appellant has rightly claimed, is beyond the “*normal interactions between the program and the hardware (client/server computer)*” – the reason provided in the impugned order. This is different from cognitive data profiling which is only meant to organize aspects of data for a human interface without any impact in computation or processing. Therefore, in the opinion of this Court, there is an apparent technical effect of the invention claimed and, therefore, the objection of non-patentability taken under Section 3(k) of the Act cannot sustain.

Objection on Divisional Application



48. The only other objection which has been taken in 6500/DELNP/2011 is of it not being a valid divisional application under Section 16(1) of the Act. In this regard, reference has been made by the appellant to the International Preliminary Report on Patentability [**IPRP**] issued by the International Search Authority during the PCT phase of the subject application. It was observed in the IPRP that Claims 1 – 30, 31 – 61, and 62 – 82 of the parent application constitute distinct inventions as they relate to different inventive concepts. It was buttressed by appellant's counsel that the subject application was filed as a divisional application which has Claims of 62 – 82 of the parent application. Relevant observations of the IPRP are extracted as follows:

Re Item IV.

The separate inventions/groups of inventions are:

1. **Claims 1-30**
These claims appear to be directed to data profiling for a single data column: an analysis of data column values is done to obtain summary statistics for this column which can be used for data validation and cleansing. The problem that is solved is how to generate a data profile of a single column for data quality analysis.
2. **Claims 31-61**
These claims are directed to data analysis for multiple columns from multiple data sources on the basis of data co-occurrence for identifying relationships between columns such as foreign key relationships and for join result analysis (see e.g. the so called census join).
3. **Claims 62-82**
These claims are directed to multi column data analysis for columns from a single data source for detecting functional dependencies. These claims solve the problem of how to identify functional dependencies between data in a single table, etc.

These groups are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

It is evident that the claims (when interpreted in the light of the description) address different technical problems using different methods.



49. Moreover, reference is also made to decision of a Division Bench of this Court in **Syngenta Ltd. v. Controller of Patents and Designs**, 2023:DHC:7473-DB which dealt with maintainability of a divisional application, and it was observed by this Court as under:

25. We, on due consideration of Section 16, fail to find or perceive an intended distinction or dichotomy with respect to the filing of Divisional Applications based on whether the same is filed suo moto or is activated by an objection that may be raised by the Controller. Section 16(1) does not appear to warrant any such distinction being carved out. We are thus of the firm opinion that irrespective of whether the Application is filed by the applicant suo moto or to remedy an objection raised by the Controller, the Divisional Application could well be maintained in either of those situations, subject to the plurality of inventions being evidenced from the disclosures made in either the provisional or the complete specification.

...

32. We thus find ourselves unable to concur with the view as expressed in Boehringer Ingelheim and the said judgment shall consequently stand overruled. We hold that a Divisional Application moved in terms of Section 16 of the Act would be maintainable provided the plurality of inventions is disclosed in the provisional or complete specification that may have been filed. We are further of the considered opinion that Section 16 does not suggest or conceive of a distinction between the contingency of a Divisional Application when moved by the applicant of its own motion or where it comes to be made to remedy an objection raised by the Controller. In either of those situations, the plurality of inventions would have to be tested based upon the



2024:DHC:5708



disclosures made in either the provisional or complete specification. The Reference stands answered accordingly.

(emphasis added)

50. Appellant's counsel also pointed out that patents on same or substantially same inventions have been granted in numerous foreign jurisdictions; a list of all corresponding applications is provided in the pleadings and extracted as under:

Country	Application Number	Filing Date	Application Status	Patent Number	Issue Date
AU	2004275334	15-Sep-2004	Granted	2004275334	26-May-2011
AU	2009200294	15-Sep-2004	Abandoned	-	-
AU	2009200293	15-Sep-2004	Granted	2009200293	20-Oct-2011
AU	2013200067	15-Sep-2004	Granted	2013200067	21-Apr-2016
BE	04784113.5	15-Sep-2004	Granted	1676217	06-Jul-2011
CA	2,538,568	15-Sep-2004	Granted	2,538,568	19-May-2009
CA	2,655,735	15-Sep-2004	Granted	2,655,735	18-Jan-2011
CA	2,655,731	15-Sep-2004	Granted	2,655,731	10-Apr-2012
CN	200480026429.2	15-Sep-2004	Abandoned	-	-
CN	200810093033.X	15-Sep-2004	Granted	ZL200810093033.X	17-Aug-2011
CN	200810093034.4	15-Sep-2004	Granted	ZL200810093034.4	13-Apr-2011
CN	201210367944.3	15-Sep-2004	Granted	ZL201210367944.3	21-Sep-2016
DE	04784113.5	15-Sep-2004	Granted	1676217	06-Jul-2011
EP	04784113.5	15-Sep-2004	Granted	1676217	06-Jul-2011
EP	10009155.2	15-Sep-2004	Abandoned	-	-
EP	10009234.5	15-Sep-2004	Published	-	-
FR	04784113.5	15-Sep-2004	Granted	1676217	06-Jul-2011
GB	04784113.5	15-Sep-2004	Granted	1676217	06-Jul-2011
HK	06114200.1	15-Sep-2004	Granted	HK1093568	03-Feb-2012
HK	11104504.8	15-Sep-2004	Pending	-	-
HK	11104505.7	15-Sep-2004	Pending	-	-
IN	1167/DELNP/2006	15-Sep-2004	Granted	268384	27-Aug-2015
IN	6501/DELNP/2011	15-Sep-2004	Pending	-	-

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C.A.(COMM.IPD-PAT) 26/2021 & 447/2022

37 of 40



2024:DHC:5708



Country	Application Number	Filing Date	Application Status	Patent Number	Issue Date
JP	2006-526986	15-Sep-2004	Granted	5328099	02-Aug-2013
JP	2010-153799	15-Sep-2004	Granted	5372850	27-Sep-2013
JP	2010-153800	15-Sep-2004	Granted	5372851	27-Sep-2013
KR	10-2006-7005255	15-Sep-2004	Granted	10-0899850	21-May-2009
KR	10-2007-7021526	15-Sep-2004	Granted	10-0922141	09-Oct-2009
KR	10-2007-7021527	15-Sep-2004	Granted	10-1033179	11-May-2011
KR	10-2009-7003696	15-Sep-2004	Abandoned	-	-
NL	04784113.5	15-Sep-2004	Granted	1676217	06-Jul-2011
US	10/941,402	15-Sep-2004	Granted	8,868,580	21-Oct-2014
US	10/941,373	15-Sep-2004	Granted	7,849,075	07-Dec-2010
US	10/941,401	15-Sep-2004	Granted	7,756,873	13-Jul-2010
US	14/519,030	20-Oct-2014	Granted	9,323,802	26-Apr-2016
US	15/135,852	22-Apr-2016	Abandoned	-	-
US	60/502,908	15-Sep-2003	Expired	-	-
US	60/513,038	20-Oct-2003	Expired	-	-
US	60/532,956	22-Dec-2003	Expired	-	-
WO	PCT/US2004/030144	15-Sep-2004	NAT PHASE	-	-

51. It has been pointed out that divisional applications filed from the PCT application have been granted in the US, Australia, and Canada with Claims having similar scope as that of the subject application.

52. The objection under Section 16(1), therefore, does not sustain. In any event, it is noted that the objection was taken in respect of only one of the subject applications, and not both subject applications.

Residual issue under Section 2(1)(ja) of the Act

53. The objections regarding Sections 3(k) and 16(1) of the Act have been addressed in the discussion above, however, a residual issue remains with respect to the objection of lack of inventive step initially raised by the respondent. Hearing notices raised objections *inter alia* on the grounds of clarity and conciseness, formal requirements, invention under Section 2(1)(ja) of the Act, non-patentability under Section 3, other requirements, etc.



54. Objection per Section 2(1)(ja) of the Act is notable pointing out the following prior art documents in the respective applications, as noted in the impugned orders:

D1:- HUHTALA YETAL: "TANE: an efficient algorithm for discovering functional and approximate dependencies", 31 MARCH 1999

D2:- BELL, S. ETAL: "Discovery of Data Dependencies in Relational Databases", 01 FEBRUARY 2001

D3:- PETIT, J.-M. ETAL: "Towards the Reverse Engineering of Denormalized Relational Databases", 01 MAY 1996

D4:- Dina Bitton ETAL: "A Feasibility and Performance Study of Dependency Inference", 10 FEB 1989

...

D3: Storage and Querying of E-Commerce Data. Rakesh Agrawal, Amit Sornani, Yirong Xu, IBM Almaden Research Center, 650 Harry Road, San Jose, CA 95120, pub date: 11/09/2001

D4: GRAEFE G, "Query evaluation techniques for large databases", ACM COMPUTING SURVEYS, ACM, NEW YORK, NY, US, LNKD- DOI: 10.1145/152610.152611, pub date: 02/06/1993

55. In response to the hearing notices, appellant, while addressing all objections, categorically responded to Controller's objections vis-à-vis *inventive step* under Section 2(1)(ja) of the Act [*not reproduced herein for the sake of brevity*]. The impugned orders, however, rejected the patent applications, in light of grounds *inter alia* under Section 3(k) and Section 16(1). The impugned order is silent on submissions regarding inventive step. This may have been since the applications were being rejected on maintainability under Section 3(k) of the Act, on which the impugned orders are focused. Considering the issue of maintainability is decided in favour of appellant, it would necessitate that objection on lack of inventive step based on prior art(s), would need to be assessed. The impugned orders



2024:DHC:5708



have not commented upon the tenability of appellant's submissions in response addressing this issue.

Conclusion

56. Present appeals stand allowed to the limited extent that the objections on the aspects of Section 3(k) and Section 16(1) of the Act are not tenable; impugned orders are set aside to that extent.

57. However, on the aspect of Section 2(1)(ja) of the Act, matter is remanded to the Office of Controller General of Patents & Designs for fresh consideration with respect to the same. It is directed that a *de novo* hearing notice may be issued, to this limited extent, and the applications be examined afresh, within a period of three months of the receipt of this order. It is made clear that this Court has not examined the matter on the aspect of lack of inventive step/ Section 2(1) (ja)/prior art(s), and it is up to the Controller to assess the same.

58. Registry is directed to supply a copy of this judgement to the Office of the Controller General of Patents, Designs and Trademarks of India on the email llc-ipo@gov.in for information and compliance.

59. Appeals stand disposed of in the above terms. Pending applications, if any, are rendered infructuous.

60. Judgment be uploaded on the website of this Court.

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C.A.(COMM.IPD-PAT) 26/2021 & 447/2022

40 of 40