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RESEARCH ARTICLE

Use of Party-Appointed Experts in International Commercial and Investment Arbitration: Issues and Possible Solutions

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Abstract

In this article, experts in international commercial and investment arbitration will be briefly explained on the basis of the appointing authority and the subject matter on which they provide their services. The legal aspects of experts will be summarised, taking into consideration sources in international arbitration and various jurisdictions. The problems that arise from the use of party-appointed experts are then briefly mentioned. Penultimately, the already proposed recommendations are to be stated and evaluated. Last but not least, the article concludes by asserting that a pre-agreed procedural flow for the creation of the expert opinion and concurrent examination is necessary to overcome the flaws resulting from the use of party-appointed experts that lead to the inefficiency of proceedings. To limit the subject, this article intentionally does not address the experts' appointment and objection process and issues relating to the expert's opinion, specifically, the assessment and weight as evidence.

Keywords

Arbitration, experts, party-appointed experts, evidence

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I. Introduction

Arbitrators need facts and the law to perform their decision-making duties. Arbitrators primarily establish facts using documents and witness evidence.[1] Although experts are frequently used to understand facts and enable arbitrators to understand them in a broader sense, they can also provide evidence that helps establish a case's facts. This is particularly true if the issues in the dispute are related to scientific, technical or complex legal knowledge.[2]

A significant part of disputes encountered in international commercial and investment arbitration[3] includes facts that require specific knowledge.[4] If arbitrators want to assess facts to apply the corresponding legal rules properly, for instance, the opinion of an architect and engineer in a construction dispute or an accountant in a financial dispute is almost inevitable, unless the arbitrator has the required knowledge of the relevant subject.[5]

As statistics show, a significant portion of arbitrators across the globe are lawyers[6] with extensive knowledge in one or more industries.[7] Nevertheless, this knowledge rarely goes beyond a general understanding of industry-related issues.[8] Thus, at this stage, arbitrators must use experts' opinions as a report while resolving the issues

1 KJT Wach and T Petsch, 'Der Sachverständigenbeweis Im Schiedsverfahren – Grenzen Der Gestaltungsfreiheit von Parteien Und Schiedsgericht' in Walter Eberl (ed), *Beweis im Schiedsverfahren* (1., Nomos 2015) 91.

2 M. Mosk, Richard. 'The Role of Facts in International Dispute Resolution (Volume 304)'. In Collected Courses of the Hague Academy of International Law, 41.

3 This argument is not exclusive for arbitration, but could be made for other international court and tribunals, too.

4 Gary B Born, *International Commercial Arbitration* (Kluwer Law International 2021) 2448.; Nigel Blackaby and others, *Redfern & Hunter On International Arbitration* (6th edition, Oxford University Press 2015), para. 6.135.; Wach and Petsch (n 1) 92.; Roman Mikhailovich Khodykin and Carol Mulcahy, *A Guide to the IBA Rules on the Taking of Evidence in International Arbitration* (Oxford University Press 2019) 281.; Caroline Elisabeth Proske, *Expert witness conferencing in Schiedsverfahren* (Mohr Siebeck 2019) 1 <https://www.mohrsiebeck.com/10.1628/978-3-16-158274-5> accessed 25 October 2022.; Süheyla Balkar, *Milletlerarası Ticari Tahkim ve Etik* (1., On İki Levha Yayıncılık 2022) 165.

5 Blackaby and others (n 4), para. 6.133.; Rolf Arno Schütze, Dieter Tscherning, and Walter Wais, *Handbuch Des Schiedsverfahrens: Praxis Der Deutschen Und Internationalen Schiedsgerichtsbarkeit* (2., de Gruyter 1990) 222.; Mohamed S Abdel Wahab, 'Party-Appointed Experts in International Commercial Arbitration: A Necessity or a Nuisance?' in Franco Ferrari and Friedrich Jakob Rosenfeld (eds), *Handbook of Evidence in International Commercial Arbitration: Key Concepts and Issues* (Kluwer Law International 2022) 181.; Steffen Knoblach, *Sachverhaltsermittlung in Der Internationalen Wirtschaftsschiedsgerichtsbarkeit* (Schriften zum Prozessrecht, Duncker & Humblot 2003) 189.; Proske (n 4) 1.; Süha Tanrıver, *Hukukumuzda Bilirkişilik* (Yetkin Yayınları 2017) 23.

6 In the construction industry, engineers and architects who have appropriate arbitral practice training, are also being appointed as arbitrators.

7 Blackaby and others (n 4), para. 6.135.; Energy, construction, environment and intellectual property are popular industries where arbitrators are expected to have knowledge of basic themes.; ICC, ICC Arbitration and ADR Commission Report Resolving Climate Change Related Disputes through Arbitration and ADR, 2019, 19, para 5.8 https://iccwbo.org/content/uploads/sites/3/2019/11/icc-arbitration-adr-commission-report-on-resolving-climate-change-related-disputes-english-version.pdf accessed 15 May 2022; Nathan D O'Malley, *Rules of Evidence in International Arbitration: An Annotated Guide* (Second edition, Informa law from Routledge 2019) 174.; Abdel Wahab (n 5) 183.; Andreas Reiner and Christian Aschauer, 'ICC Rules' in Rolf Arno Schütze (ed), *Institutional Arbitration: Article-by-Article Commentary* (C. H. Beck, Hart, Nomos 2013) 135.; Knoblach (n 5) 48–49.

8 Musa Aygül, *Milletlerarası Ticarî Tahkimde Tahkim Usûlüne Uygulanacak Hukuk ve Deliller* (2., On İki Levha Yayıncılık 2014) 264.; Roman Mikhailovich Khodykin and Carol Mulcahy, 'Commentary on the IBA Rules on Evidence, Article 5 [Party-Appointed Experts]', *A Guide to the IBA Rules on the Taking of Evidence in International Arbitration* (Oxford University Press 2019) 281.

in the case and rendering their decisions.[9] The expert assists the arbitral tribunal in adjudication and influences the proceedings and outcome.[10] Therefore, choosing an expert is deemed the second most crucial aspect of proceedings by some scholars.[11]

Similar to litigation, in international commercial and investment arbitration, experts are appointed by the arbitral tribunal ex officio, upon request, or by parties. Currently, in international arbitration proceedings, experts are involved heavily in arbitrations, and there is a tendency to rely more on party-appointed experts.[12]

In 90% of arbitrations, parties appoint experts and in 10% of arbitrations, the arbitral tribunal.[13] In particular, the expert adduced by the parties creates some problems ("party-appointed experts").[14]

Where the parties appoint experts, the relevant party selects an expert who will strengthen their case.[15] There is a beneficial relationship because the party will

9 See Stephan Wilske and Christine Gack, 'Expert Evidence in International Commercial Arbitration' in Dennis Campbell and Anita Alibekova (eds), *The Comparative Law Yearbook of International Business*, vol 29 (Wolters Kluwer 2007) 88.; Proske (n 4) 1.; For the same view for quantum issues see Doug Jones, 'Redefining the Role and Value of Expert Evidence' (2021) 39 <https://dougjones.info/content/uploads/2021/12/DJ-ICC-Expert-Evidence-Post-Conference-Updated-Chapter.pdf>.; See NA Kyung Lee, 'Selecting the Expert Witness as an Arbitrator in Patent Arbitrations' (2016) 70 Dispute Resolution Journal Aygül (n 8) 270.

10 Wach and Petsch (n 1) 98.; O'Malley (n 7) 168.; Christian Oetiker, 'Commentary on Art. 26-30 Swiss Rules of Arbitration' in Tobias Zuberbühler, Philipp Habegger and Christoph Müller (eds), *Swiss Rules of International Arbitration Commentary* (2., Schulthess 2013) 313.;Alexandra Weiss and Karin Bürgi Locatelli, 'Der Vom Schiedsgericht Bestellte Experte-Ein Überblick Aus Sicht Eines Internationalen Schiedsgerichts Mit Sitz in Der Schweiz' (2004) 22 ASA Bulletin 479, 499.; Aygül (n 8) 270.

11 Margaret L Moses, *The Principles and Practice of International Commercial Arbitration* (Third Edition, Cambridge University Press 2017) 197.

12 Experts are involved in two-thirds of arbitrations. For statistical proof see '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (Queen Mary University of London and White and Case 2012) <https://arbitration.qmul.ac.uk/media/arbitration/docs/2012_International_Arbitration_Survey.pdf> accessed 20 April 2022.; Güneş Ünüvar, "Experts: Investment Arbitration", Oxford, Max Planck Encyclopedia of International Procedural Law(MPEiPro), 2021, https://opil.ouplaw.com/view/10.1093/law-mpeipro/e3502.013.3502/law-mpeipro-e3502#law-mpeipro-e3502-div1-8 ; O'Malley (n 7) 145.; Stephan Wilske and Lars Markert, *Beck'scher Online-Kommentar ZPO* (Volkert Vorwerk and Christian Wolf eds, 44., Beck-Online 2022), § 1049 para. 9-10.; Thomas H Webster and Michael W Bühler, *Handbook of ICC Arbitration: Commentary, Precedents, Materials* (5th edn, Sweet & Maxwell 2021) 445.; Thomas H Webster and Michael W Bühler, *Handbook of UNCITRAL Arbitration* (3rd edn, Sweet & Maxwell 2019) 421.; See for reasons ibid 449, para. 29-04.;Rolf Trittmann and Boris Kasolowsky, 'Taking Evidence in Arbitration Proceedings Between Common Law and Civil Law Traditions- The Development of a European Hybrid Standard for Arbitration Proceedings' (2008) 31 University of New South Wales Law Journal 330.; Doug Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration', *Dubai Arbitration Week 2020* (2020) 2.; Proske (n 4) 26.

13 '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (n 12) 29.; In another recent survey, %96 of respondents argued for a right to rely on party-appointed expert evidence in 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (BCLP 2021) 9 <https://www.bclplaw.com/en-US/events-insights-news/bclp-arbitration-survey-2021-expert-evidence-in-international-arbitration.html> accessed 11 December 2022. ("BCLP Survey"); For similar results see IBA Arbitration Guidelines and Rules Subcommittee, "Report on the Reception of the IBA Arbitration Soft Law Products, (International Bar Association, 2016), para. 45 https://res.cloudinary.com/lbresearch/image/upload/v1474620896/soft_law_products_report_238116_954.pdf accessed 11 January 2023.

14 See for critique Richard M. Mosk, 'The Role of Facts in International Dispute Resolution (Volume 304)', *Collected Courses of the Hague Academy of International Law* (Brill) 21.

15 The BLCP Survey shows that party-appointed expert is preferred in arbitration, since parties and their representatives know more about the dispute and are more comfortable selecting to select the appropriate expert to assist them and the tribunal on expertise required issues in 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 17. The BLCP Survey was conducted with 289 international respondents where majority (75%) of respondents were from a common law background and 44% of respondents were experts from various fields; Knoblach (n 5) 280–281.

directly pay the expert. This situation likely causes experts to stick to their[16] opinions and, as argued by practitioners and scholars, engage in advocacy, which could lead to experts not being neutral or objective.

Blackaby et al. assert that "one of the most unsatisfactory features of procedure in international commercial arbitration is the prevailing practise whereby the parties present conflicting expert evidence on matters of complex technical opinion".[17] This leads to both parties' efforts being wasted, and the tribunal is placed in a difficult position, which in the end induces delays and high costs.[18]

In the UNCITRAL Model Law, statutory laws of states, the ICSID Convention and Rules, UNCITRAL Arbitration Rules, the rules of many arbitral institutions, and binding provisions regulating the adduction of party-appointed experts are minimal.[19]

Soft law elements such as the Chartered Institute of Arbitrator's Protocol for the Use of Party-Appointed Experts Witnesses in International Arbitration ("CIArb Protocol") and the IBA Rules on the Taking of Evidence in International Arbitration ("IBA Rules") merit special attention for their detailed rules on party-appointed experts, which are important and widely used in international arbitration. [20] Thus, it is left to the tribunal and the parties to determine how the party-appointed expert evidence will be handled.[21]

In this regard, some non-binding rules and methods have been proposed to address flaws related to experts. For example, the experts join to prepare a joint opinion instead of a unilateral written report by each expert [22] or expert conferencing[22].

Party-appointed experts are deemed crucial to arbitration proceedings and cannot be ostracised.[23] There must be coherence in practise governing different aspects of expert use or clarity in the rules and practises to be followed in this respect.[24]

16 For readability purposes, the male form (he-his) for persons will be used in this article.

17 Blackaby et al., *Redfern and Hunter on International Arbitration*, para. 6.138.; See also Aygül (n 8) 269.

18 Knoblach (n 5) 282.

19 Nigel Blackaby and Alex Wilbraham, 'Practical Issues Relating to the Use of Expert Evidence in Investment Treaty Arbitration' (2016) 31 ICSID Review 655, 656; Patocchi, Paolo Michele and T Niedermaier, 'UNCITRAL Rules' in Rolf A Schütze (ed), *Institutional Arbitration: A Commentary* (Bloomsbury Publishing 2013) 1183, fn. 529.; Maurice Waincymer, *Procedure and Evidence in International Arbitration* (Kluwer Law International 2012) 945.; Abdel Wahab (n 5) 191.; Sebastiano Nessi, 'Expert Witness: Role and Independence' in Christoph Müller, Sebastien Besson and Antonio Rigozzi (eds), *New Developments in International Arbitration 2016* (Schulthess Juristische Medien AG 2016) 101..; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 24.; Aygül (n 8) 270.

20 Only 35% of practitioners believe that the IBA Rules provide sufficient protection against party-appointed experts not being objective, in 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 9.

21 Aygül (n 8) 270.

22 Proske (n 4).

23 Nessi (n 19) 72.

24 Laurence Boisson de Chazournes and others, 'The Expert in the International Adjudicative Process: Introduction to the Special Issue' (2018) 9 Journal of International Dispute Settlement 339, 339.

A common framework that predictably regulates the roles and responsibilities of party-appointed experts is needed.[25] Due to the problems described above, the focus is to improve and strengthen the effective use of party-appointed experts through rules and methods. The primary aim is to ensure the neutrality and objectivity of party-appointed experts and cost efficiency in proceedings.[26]

To achieve these aims, the tribunal should establish a comprehensive procedure for obtaining expert opinion at an early stage in cooperation with the parties. After this stage, a concurrent examination of the party-appointed experts may be essential to test the expert opinion.

II. Experts in International Arbitration

A. Overview

The civil and common law divide appears in the use of experts in international arbitration.[27] There are observable differences in expert use, depending on the tradition. There may even be various usages within the tradition.[28]

International commercial and investment arbitration is a melting pot where different legal traditions collide and merge to a certain degree.[29] As a result, tribunal and party-appointed experts are included in the UNCITRAL Model Law, international agreements, arbitration rules and guidelines.[30]

Stakeholders in international arbitration found party-appointed experts to be more effective (%43), while slightly fewer found tribunal-appointed experts to be more effective (%31).[31] In support of the former, some argue that tribunal-appointed experts are exceptional in ICC Arbitration practise.[32]

25 Güneş Ünüvar, 'Experts: Investment Arbitration' [2021] Max Planck Encyclopedias of International Law <http://opil.ouplaw.com>, para. 57.; Nessi (n 19) 72.

26 Wach and Petsch (n 1), 92.; Nessi (n 19), 101.; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12), 4.

27 Wilske and Gack (n 9) 77.; Gabrielle Kaufmann-Kohler, 'Globalization of Arbitral Procedure' (2003) 36 Vanderbilt Journal of Transnational Law Vanderbilt Journal of Transnational Law 1313, 1330. ; C Mark Baker and Lucy Greenwood, 'In Search of an Exemplary International Construction Arbitration' in Arthur W Rovine (ed), *Contemporary Issues in International Arbitration and Mediation: The Fordham Papers*, vol 6 (Brill | Nijhoff 2013) 181.; Bernard Hanotiau, 'The Conduct of the Hearings' in LW Newman and RD Hill (eds), *Leading Arbitrators' Guide to International Arbitration* (Third, Juris Publishing, Incorporated 2014) 636.; LW Newman and RJ Klieman, *Take the Witness: The Experts Speak on Cross Examination* (Juris Pub 2006) 55.; Jörg Risse and Heiko Haller, 'Die „IBA-Regeln" Zur Beweisaufnahme in Der Internationalen Schiedsgerichtsbarkeit' in Walter Eberl (ed), *Beweis im Schiedsverfahren* (1., Nomos 2015) 118.; Julian DM Lew, Loukas A Mistelis and Stefan M Kröll, *Comparative International Commercial Arbitration* (Kluwer Law International 2003) 554.; İnan Uluç, *Evidence-Taking in National and International Arbitration: The Reconciliation of Civil Law and Common Law Traditions* (Yetkin Yayınları 2021) 25.

28 For details of court practices of court and party-appointed experts in various countries see Proske (n 4) 13–25.; Aygül (n 8) 265.

29 Wilske and Gack (n 9) 81.; Vera Van Houtte, 'Party-Appointed Experts and Tribunal-Appointed Experts' in Stephen R Bond (ed), *Arbitral Procedure at the Dawn of the New Millennium: Reports of the International Colloquium of CEPANI* October 15, 2004 (Bruylant 2004).; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 1.; Knoblach (n 5) 45.

30 Proske (n 4) 25.; Aygül (n 8) 271.

31 '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (n 12) 29.

32 István Varga, *Beweiserhebung in Transatlantischen Schiedsverfahren: Eine Suche Nach Kompromissen Zwischen*

Regardless of who appoints experts, experts can also be categorised based on the subject matter they are expertise in. Experts are mainly technical (scientific), legal, and quantum (valuation) experts.

The general function of each expert is to provide a well-reasoned, neutral, and objective opinion.[33] Each expert clarifies disputed or dispute-related issues that impact the material outcome of the case. Thus, they support tribunals in decision-making processes.[34]

B. Definition and Qualifications of Experts

An expert refers to "one with the special skill or knowledge representing mastery of a particular subject"[35] or "a person with special knowledge, skill or training in something."[36] In legal terminology, an expert is "a person with knowledge and skills who has learned over years of experience in a subject. Their opinions can be helpful in problem solving."[37]

Thus, an expert differentiates herself from a non-expert with a high level of special knowledge, skills, training, or experience in a particular subject or activity. Experts are qualified, objective, neutral and reputable individuals or organisations with exceptional knowledge of facts or experience[38] that falls within their expertise, who can be consulted to resolve disputes before a court or tribunal.[39]

In the international arbitration context, an expert gives an opinion on specific matters in a dispute to assist the arbitrators in solving the dispute.[40] Experts explain special situations that the arbitrators cannot thoroughly derive from the case.

Suppose the tribunal plans to appoint an expert before officially appointing the expert and assigning it to his/her task. In that case, the expert should submit

Deutscher Und US-Amerikanischer Beweisrechtstradition (Nomos 2006) 212.

33 Laurence Boisson de Chazournes and others, 'One Size Does Not Fit All-Uses of Experts before International Courts and Tribunals: An Insight into the Practice' (2018) 9 Journal of International Dispute Settlement 477, 492.

34 Wach and Petsch (n 1) 95.; O'Malley (n 7) 171.; Abdel Wahab (n 5) 182.; Knoblach (n 5) 265.

35 Merriam-Webster.com Dictionary, "expert," https://www.merriam-webster.com/dictionary/expert accessed 3 July 2022.

36 Oxford Learner's Dictionaries, "expert", https://www.oxfordlearnersdictionaries.com/definition/english/expert_1 accessed 3 July 2022.

37 The Law Dictionary, "expert", https://thelawdictionary.org/expert/ accessed 3 July 2022.; Aygül (n 8) 264.

38 See Donald Francis Donovan and others, 'Reconsidering the Role of Legal Experts as a Means to Greater Arbitral Efficiency' in Julie Bédard and Patrick W Pearsall (eds), *Reflections on International Arbitration: Essays in Honour of Professor George Bermann* (JURIS 2022) 303.

39 Isabelle Van Damme, 'The Assessment of Expert Evidence in International Adjudication' (2018) 9 Journal of International Dispute Settlement 401, 402.in particular in the settlement of disputes before the Court of Justice of the European Union (CJEU; M Mosk, 'Collected Courses of the Hague Academy of International Law The Role of Facts in International Dispute Resolution (Volume 304)' 126.

40 O'Malley (n 7) 145.

a curriculum vitae indicating qualifications and proving that she has the required expertise to fulfil the assigned duty.[41]

In addition to expertise, the expert must be unbiased and submit a declaration to the arbitral tribunal before the appointment.[42] This declaration must indicate any conflict of interest concerning the parties, their attorneys, advisers and the tribunal and disclose any existing facts or circumstances that may give rise to doubts about his impartiality.[43]

The independence and impartiality requirement of a tribunal-appointed expert should be understood strictly in contrast to a party-appointed expert. The expert can be challenged, and the appointment is terminated if there are justifiable doubts that the expert lacks those qualifications.[44]

Independence is a prerequisite for a neutral tribunal-appointed expert opinion. Impartiality, on the other hand, serves as objectivity. Without explicit provisions in arbitration laws or rules, both conditions are indispensable for a tribunal-appointed expert.[45]

C. Functions of Experts

Experts are primarily appointed to clarify disputed issues that have a material impact on the outcome. The arbitrators are not able to perform this task because they generally need more unique and technical knowledge in the decision-making process.[46]

Suppose the arbitrator can access the required knowledge to decide on the matter. In such cases, an expert may not be necessary, provided the parties have been given a fair opportunity to address the issues on which the arbitral tribunal relies.[47] This

41 Tobias Zuberbühler and others, *IBA Rules of Evidence: Commentary on the IBA Rules on the Taking of Evidence in International Arbitration* (2., Schulthess 2022) 161.

42 Abdel Wahab (n 5) 190.; Makane Moïse Mbengue and Rukmini Das, 'Rules Governing the Use of Experts in International Disputes' (2018) 17 Law and Practice of International Courts and Tribunals 415, 434.;; Gillian M White, *The Use of Experts by International Tribunals* (Syracuse University Press 1965) 183.; Patocchi, Paolo Michele and Niedermaier (n 19) 1184.; Nessi (n 19) 74.; Jonathan W Lim, 'Tribunal-Appointed Experts in International Arbitration' in Franco Ferrari and Friedrich Jakob Rosenfeld (eds), *Handbook of Evidence in International Commercial Arbitration: Key Concepts and Issues* (Kluwer Law International 2022) 212, 221.; Webster and Bühler, *Handbook of UNCITRAL Arbitration* (n 12) 450.;

43 Zuberbühler and others (n 42) 162.; Born (n 4) 2035.; Philippe Fouchard, Emmanuel Gaillard and Berthold Goldman, *Fouchard, Gaillard, Goldman on International Commercial Arbitration* (John Savage and Philippe Fouchard eds, Kluwer Law International 1999) 579.; Stavroula Angoura, *The Impartiality and Independence of Arbitrators in International Commercial Arbitration* (Nomos 2022) 121.

44 Wach and Petsch (n 1) 101.; O'Malley (n 7) 181–182.; Knoblach (n 5) 271-272.

45 Lim (n 43) 221.

46 Wach and Petsch (n 1) 95.; O'Malley (n 7) 171.; Abdel Wahab (n 5) 182.; White (n 43) 165.; Gideon E Kamya-Lukoda, 'Role of Expert Witnesses in Construction Arbitration: Delay and Disruption and Quantum Issues' in Renato Nazzini and Anthony J Morgan (eds), *Transnational construction arbitration: key themes in the resolution of construction disputes* / (Informa Law from Routledge 2018) 79.; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 1.; Proske (n 4) 3.; Aygül (n 8) 270.

47 Wach and Petsch (n 1) 95.; *O'Malley* argues that even if an arbitrator is an expert in a field relating to the dispute, since

should be differentiated if the specific arbitrator was chosen intentionally as an expert on a subject, e.g., construction engineering.[48]

The expert will assist the tribunal in making an appropriate legal decision.[49] Because critical issues will be exposed and analysed by experts, their presence in the process potentially increases the parties' trust in the arbitration process and their compliance with the final award. In addition, experts may assist the tribunal in identifying the appropriate sources, offer additional support for a factual assertion, provide opinions on the conflicting legal rules and evidence and help the tribunal in selecting the appropriate facts or evidence.[50] Tribunal-appointed experts may evaluate and summarise the opinions of party-appointed experts and add further interpretations for the tribunal.[51] Furthermore, the expert can be the source of the facts if the expert observes, assesses and organises the facts after an inspection of sight, data or materials.[52]

The expert can be relied upon to support the validity and general acceptance of using a specific (scientific) method and the results of its application to the facts in the case.[53]

Despite the practical differences, there is overall consensus on the principle that the general function of experts is to provide well-reasoned and objective opinions.[54]

the role of the arbitrator is evaluating the evidence and not producing it, he/she cannot act as an expert itself, see for details O'Malley (n 7) 175–176.; See Similarily Ulrich Theune, 'DIS Rules' in Rolf Arno Schütze (ed), *Institutional Arbitration: Article-by-Article Commentary* (CH Beck, Hart Publishing, Nomos 2013) 266.; The ICC Commission on Arbitration and ADR foresees in its report on "Resolving Climate Change Related Disputes through Arbitration and ADR" that, any technical knowledge or understanding by a non-lawyer arbitrator who is an expert in other scientific or technical fields, would nevertheless need to be provided to the parties for comment on the relevant matter, before being applied in making any award or decision, see 'ICC Commission on Arbitration and ADR Report: Resolving Climate Change Related Disputes through Arbitration and ADR' (ICC 2019) ICC Commission on Arbitration and ADR 999 ENG 19–20.; Khodykin and Mulcahy (n 4) 290.; See ICC, 'ICC Arbitration Commission Report on Controlling Time and Costs in Arbitration' (ICC 2018) ICC Publication 861-2 20, para. 5.8.; Knoblach (n 5) 218.; See Peter Ashford, *The IBA Rules on the Taking of Evidence in International Arbitration* (Cambridge University Press 2013), para. 5-2.

48 Knoblach (n 5) 219.

49 Geoffrey Senogles, 'Some Views from the Crucible: The Perspective of an Expert Witness on the Adversarial Principle' (2018) 9 Journal of International Dispute Settlement 361, 363.

50 José E Alvarez, 'The Search for Objectivity: The Use of Experts in Philip Morris v Uruguay' (2018) 9 Journal of International Dispute Settlement 411, 418.; *White* opposes to this view and argues that the expert should not identify which facts are relevant and significant, nor assess and weigh them, see White (n 43) 165.

51 Van Damme (n 40) 402.in particular in the settlement of disputes before the Court of Justice of the European Union (CJEU; O'Malley (n 7) 174.

52 Van Damme (n 40) 402.in particular in the settlement of disputes before the Court of Justice of the European Union (CJEU; O'Malley (n 7) 186.; M. Mosk, Richard. 'The Role of Facts in International Dispute Resolution (Volume 304)'. In Collected Courses of the Hague Academy of International Law, 41.

53 Proske (n 4) 3.; Van Damme (n 40) 403.in particular in the settlement of disputes before the Court of Justice of the European Union (CJEU

54 de Chazournes and others (n 28) 492, 495.

D. Roles of Experts

When the tribunal appoints an expert, its primary role is to explain specific issues that are foreign to the tribunal and facilitate understanding by tribunal members (*evidentiary role*).

Some scholars argue that experts are also appointed to summarise (technical) evidence, present evidence in an understandable form and express comments on the claims (*advisory role*).[55] The function of this expert is to assist the tribunal in understanding complex facts or evidence.[56]

In any case, the experts' role should not be considered in isolation, but should always be relative to the overriding competence of the tribunal.[57] Arbitrators, counsel and experts generally believe that, regardless of whether the experts are acting on the party's instruction or the tribunal, the expert's duty is owed to the tribunal in both cases.[58] However, some believe that the party-appointed expert's additional role is to support the appointing party in its arguments.[59]

Experts should only present their professional opinions in cases. Accepting that the expert's conclusions are true is inappropriate. The tribunal will establish the facts based on the expert opinion and may even draw separate conclusions based on legitimate grounds.[60]

Therefore, the presence of an expert does not imply that the arbitrator will directly, without weighing and assessing the opinion, accept the opinions of experts and incorporate the opinion(s) into the award. This delegates its function as an adjudicator to an expert, which is prohibited in international arbitration.[61] The arbitrator will have

55 Michael E Schneider, 'Technical Experts in International Arbitration' (1993) 11 ASA Bulletin; Kluwer Law International 446, 450.; Dieter Hofmann and Oliver M Kunz, 'Commentary on the Swiss Rules, Article 27 [Tribunal-Appointed Experts]' in Manuel Arroyo (ed), *Arbitration in Switzerland: The Practitioner's Guide* (2., Kluwer Law International 2018) 720–721.; O'Malley (n 7) 186.; Erik Schäfer and David B Wilson, 'Issues for Arbitrators to Consider Regarding Experts: An Updated Report of the ICC Commission on Arbitration and ADR' (ICC Commission on Arbitration and ADR 2021) 70.; James Flett, 'When Is an Expert Not an Expert?' (2018) 9 Journal of International Dispute Settlement 352, 355.;See also IBA Rules Art. 3(8) for review of documents requested for document production by an independent expert.

56 de Chazournes and others (n 34) 495.; Zuberbühler and others (n 42) 159.

57 White (n 43) 164.

58 Laurence Boisson de Chazournes, Makane Moise Mbengue, Rukmini Das, Guillaume Gros, One Size does not Fit All—Uses of Experts before International Courts and Tribunals: An Insight into the Practice, Journal of International Dispute Settlement, Volume 9, Issue 3, September 2018, 492, 495.

59 İbid.

60 Mohamed Bennouna, 'Experts before the International Court of Justice: What For?' (2018) 9 Journal of International Dispute Settlement 345, 345–346.

61 Blackaby et al., *Redfern and Hunter on International Arbitration*, para. 6.136.; Wach and Petsch (n 1) 97.; Tobias Zuberbühler and others, *IBA Rules of Evidence: Commentary on the IBA Rules on the Taking of Evidence in International Arbitration*, (2., Schulthess 2022) 175. ; Oetiker (n 10) 312.; Schneider (n 56) 452.; White (n 43) 164.;
See Suez, Sociedad General De Aguas De Barcelona S.A. And Vivendi Universal S.A. V. Argentine Republic (ICSID Case No. ARB/03/19) Decision On Argentina's Application For Annulment, para. 306 https://www.italaw.com/sites/default/files/case-documents/italaw8783.pdf accessed 1 July 2022 :
"…endogenous factors amounted to a "significant" contribution within the meaning of Article 25(2)(b) and thus excluded the state of necessity defense. This, however, is a legal assessment on which neither of the economic expert reports could opine. In fact, if the Tribunal had looked for guidance on this legal question in any of the expert reports, it could have been

the final word on assessing the disputed issues and whether or not to rely on an expert's opinion.[62]

Unlike the tribunal-appointed expert, the party-appointed expert is appointed not only to present the position of the appointer but also sometimes to oppose the counterparty's expert opinion or even the opinion of the tribunal-appointed expert.[63] Some party-appointed experts may help to draft the pleadings of the case before the proceedings begin.[64]

The tribunal-appointed expert is an assistant/advisor to the tribunal and is sometimes critically called the "fourth arbitrator".[65] However, this does not mean that the expert will weigh the evidence and draw conclusions.[66]

If the parties have relied on experts and the tribunal needs to be convinced enough or needs consultation, it may appoint an expert to bridge the gap.[67] Although this is highly likely helpful for the tribunal in finally deciding on the case, it comes with the cost of a prolonged case outcome since the tribunal-appointed expert will need to read through the entire case file, which may include a room full of documents.[68] This approach has been used in practise.[69]

found to have committed the same annullable error that the Enron committee found, i.e., deference to an economic expert report where the tribunal should have made its own legal assessment of a requirement under international law."

62 Wach and Petsch (n 1) 97.

63 ibid 94–95.

64 Lew, Mistelis and Kröll (n 28) 578.; Kate Parlett, 'Parties' Engagement with Experts in International Litigation' (2018) 9 Journal of International Dispute Settlement 440, 441.; Aygül (n 8) 268.

65 Wach and Petsch (n 1) 96.; Oetiker (n 10) 313.; Wilske and Gack (n 9) 89.; for the perspective in International Law See Bennouna (n 61).; See Application for Revision and Interpretation of the Judgment of 24 February 1982 in the Case concerning the Continental Shelf (Tunisia v Libyan Arab Jamahiriya), Judgment [1985] ICJ Rep 192, 228, para 65; Mélida Hodgson and Melissa Stewart, 'Experts in Investor-State Arbitration: The Tribunal as Gatekeeper' (2018) 9 Journal of International Dispute Settlement 453, 457.; Déirdre Dwyer, *The Judicial Assessment of Expert Evidence* (Cambridge University Press 2009) 195.

66 O'Malley (n 7) 170.

67 Blackaby and Wilbraham (n 19) 664.

68 See for critics ibid.

69 See Suez, *Sociedad General de Aguas de Barcelona SA and Vivendi Universal SA v Argentine Republic*, ICSID Case No ARB/03/19, Award, 9 April 2015, para. 7–18 https://www.italaw.com/sites/default/files/case-documents/italaw4365.pdf accessed 9 April 2023; Perenco Ecuador Limited v Republic of Ecuador, ICSID Case No ARB/08/6, Interim Decision on the Environmental Counterclaim, 11 August 2015, para. 585 ff. https://www.italaw.com/sites/default/files/case-documents/italaw6315.pdf accessed 27 March 2023 ; Abaclat and Others v Argentine Republic, ICSID Case No ARB/07/5, Procedural Order No 15, 20 November 2012, para. 11 ff. https://www.italaw.com/sites/default/files/case-documents/italaw1306_0.pdf accessed 1 April 2023; See for instance: "the expert evidence from both sides does not provide a sufficient degree of confidence as to the actual conditions in the Blocks. The Tribunal considers that there are too many gaps and conflicts between [the parties'] evidence on these key issues". (*Perenco Ecuador Limited v Ecuador*, Interim Decision on the Environmental Counterclaim, 2015, para. 581 ff.).

E. Legal Nature

The legal nature of a particular matter is essential because it determines the regime and consequences applicable to that subject. In international arbitration, there must be a common and settled understanding of the legal nature of experts.[70]

Depending on the legal background, the most significant views are that party-appointed experts can be classified as witnesses, judicial/adjudicatory assistants, expert evidence, party submission, or sui generis evidence. Although analogies can be drawn from domestic law and jurisprudence, expert evidence in international commercial arbitration can be classified as a means of evidence.[71]

The tribunal-appointed expert and its report are generally accepted as evidence.[72] The tribunal-appointed expert is neither a witness, since he will not testify on facts that were sensed with the organs, nor a fourth arbitrator who will participate in the deliberations and have a vote; he is an assistant to the tribunal[73], producing evidence and facilitating the understanding of specific matters beyond the knowledge of the arbitral tribunal.[74]

Similar to domestic law practises, the tribunal is not strictly bound by an expert's opinion and will freely appraise the opinion and may come to a different conclusion in the award.[75] The tribunal may partially or fully adopt the expert's findings if they align with the facts and evidence in the record, logic and legal rules.[76] For due process concerns, the tribunal, either rejecting the expert's conclusions or accepting them in the award, shall state the reasons for the decision.[77] Due to the nature of the case, significant weight is generally given in practise to tribunal-appointed experts, in contrast to party-appointed experts.[78]

Regarding party-appointed experts, the Art. 5(1) of the IBA Rules categorises those as a "means of evidence". This indicates that party-appointed experts are not mere submissions of parties[79] in international arbitration; they have their weight.[80]

70 Knoblach (n 5) 274.

71 Proske (n 4) 26.

72 Zuberbühler and others (n 39) 170.; Schäfer and Wilson (n 56) 75.

73 Proske (n 4) 14.

74 O'Malley (n 7) 167.; Lim (n 43) 212.; Oetiker (n 10) 314.; Commentators argue that the participation of the expert could raise important issues regarding the right to be heard and should be avoided, unless it is impossible to adapt the expert's findings properly and decide the dispute. See Schneider (n 56) 464.; Weiss and Bürgi Locatelli (n 10) 499.; Proske (n 4) 14.

75 Zuberbühler and others (n 39) 170.; See ICC Case No. 14079, Procedural Order May 2007, in ICC International Court of Arbitration Bulletin Vol. 25/Supplement (2014): 11; Oetiker (n 10) 313.

76 O'Malley (n 7) 199.

77 O'Malley (n 7) 200.; See ICC Case No. 12131 (2006) (Partial Award) in Webster and Bühler, *Handbook of ICC Arbitration: Commentary, Precedents, Materials* (n 12) 448.

78 O'Malley (n 7) 167.

79 Tanrıver, *Hukukumuzda Bilirkişilik* (n 5) 33.

80 Zuberbühler and others (n 42) 136.

Some Turkish scholars have also argued that although the party-appointed expert is an expert like the tribunal-appointed expert, this does not lead to the former sharing the exact legal nature as the latter in the sense of expert evidence, according to the Turkish Code of Civil Procedure ("HMK").[81] The latter view is based on the argument that a party-appointed expert has no duty to be independent and cannot be challenged.[82] Most Turkish scholars do not agree that a party-appointed expert's report is an evidence source.[83] Some Turkish scholars argue that party-appointed experts are a *type of sui generis* evidence (*takdiri delil*).[84] The main supporting argument of this view is that party-appointed experts are regulated within the sections of evidence in the HMK (Chapter 4 Section 7).[85]

Some German scholars argue that according to the German Code of Civil Procedure ("ZPO")[86], only tribunal-appointed experts can be categorised as expert evidence (*Sachverständigenbeweis*), and party-appointed experts cannot be categorised as the same under ZPO § 1049. The reason is that experts must be neutral and can be challenged.[87] Some scholars have stressed that the equality of arms principle might be violated if the party-appointed expert is accepted as expert evidence.[88]

The authors of the *Münchener Kommentar zur Zivilprozessordnung* stipulate that party-appointed experts are a means of *obtaining sui generis* expert evidence (*eine eigene Beweisform des Sachverständigenbeweises*).[89] *Knoblach* also argued that according to German arbitration provisions, a party-appointed expert cannot be classified as a party-appointed expert in court proceedings.[90] The author believes that party-appointed experts are a means of *sui generis* expert evidence.[91]

81 Code on Civil Procedure, Law No: 6100, Acceptance Date : 12.1.2011, Official Gazette 04.02.2011/27836.

82 Oğuz Atalay, 'Deliller (Tanık, Keşif, Bilirkişi, Uzman Görüşü)' in Hakan Pekcanıtez and others (eds), *Pekcanıtez Usul - Medenî Usûl Hukuku*, vol 15. (On İki Levha Yayıncılık 2021) 1959.; Tanrıver, *Hukukumuzda Bilirkişilik* (n 5) 33.; See for comprehensive views in Turkish law Hasan Elyıldırım, *Hukuk Yargılamasında Uzman Görüşü (Özel Bilirkişi)* (Adalet Yayınevi 2021) 48–58.

83 Hakan Pekcanıtez, 'Özel Uzman (Bilirkişi) Görüşü ve Değerlendirilmesi', *Makaleler*, vol 2 (2016) 405.; Çiğdem Yazıcı-Tıktık, 'HMK m. 293'teki Uzman Görüşü Kurumu Ile Anglo-Sakson Hukuk Sistemindeki Uzman Tanık Kurumunun Karşılaştırılması' (2011) 7 Medeni Usul ve İcra İflas Hukuku Dergisi 79, 92.

84 Baki Kuru, *Medenî Usul Hukuku El Kitabı*, vol I (Yetkin Yayınları 2020) 822.; Selçuk Öztek, 'Bilirkişi Raporunun Hâkimi Bağlamaması', *Prof. Dr. Ejder Yılmaz'a Armağan*, vol 2 (2014) 1624–1625.; Ramazan Arslan and others, *Medenî Usul Hukuku* (7th edn, Yetkin Yayınları 2021) 494.

85 Öztek (n 85) 1624.; See for contrary position, Tanrıver, *Hukukumuzda Bilirkişilik* (n 5) 33.

86 Zivilprozessordnung (DE).

87 Wach and Petsch (n 1) 103, 109.; Knoblach (n 5) 277.; See for similar views, Martin Spitzer, 'Der Sachverständigenbeweis Im Österreichischen Zivilprozess' (2018) 131 Zeitschrift für Zivilprozess 25, 40.

88 Emel Hanağası, *Medeni Yargılama Hukukunda Silahların Eşitliği* (Yetkin Yayınları 2016) 422.; Especially if one party adduces multiple experts see Proske (n 4) 43.

89 Joachim Münch, *Münchener Kommentar Zur ZPO* (6., Beck-Online 2022), § 1049 para. 38, 39.; Ingo Saenger, 'ZPO §1049 Vom Schiedsgericht Bestellter Sachverständiger', *Zivilprozessordnung* (9., Beck-Online 2021), para. 5.

90 Knoblach (n 5) 276–77.

91 ibid 277.

Thus, as long as an expert opinion either establishes the facts or makes them clearer to understand, I consider party-appointed expert opinions as a means of evidence that the arbitrators will freely assess along with other evidence.[92] In case the party-appointed expert opinion is on legal issues, it can still be treated as evidence, but the arbitrators will have it easier to deny the points made in such an opinion than a scientific or technical expert's determination on matters.

F. Types of Experts

Experts can be categorised based on the appointing authority or the subject on which they will give an opinion. Based on the appointing authority, experts are either appointed/chosen by the parties or the arbitral tribunal appoints them. Based on the subject on which the expert will provide an opinion, they can be classified as technical (scientific), legal, and quantum (valuation) experts.

1. Based on the Appointing Authority

a. Party-Appointed Experts

A party-appointed expert is a person or organisation appointed by a party to report on specific issues as determined by the party.[93] As the definition indicates, this type of expert is an expert in the sense of the above definition (in Section 2 of Chapter 2); however, he or she is instructed and compensated by the party to the dispute. This distinguishes it from a tribunal-appointed expert and has other legal consequences. [94]

Parties in international arbitration practise generally desire complete control over expert evidence from selection until cross-examination of the expert. This is why the parties want to appoint experts.[95] Choosing an expert enables a party to put forward a case in which their expert opinion should be preferred to that of the counterparts.[96] This brings scepticism to their objectivity.[97] Party-appointed experts are often criticised for needing to be more objective, cherry-picking facts and information to ensure that they support the party appointing them.[98]

92 Ferhan Yıldızlı, *Uluslararası Tahkimde Zararın Değerlendirilmesi* (Ankara: Seçkin, 2020), 91.

93 Pekcanıtez (n 84) 397.; See for definitions in Turkish law, Elyıldırım (n 83) 30–31. Aygül (n 8) 271.; Schneider (n 56) 447.; Ekin Hacıbekiroğlu, *Milletlerarası Tahkim Hukukunda Deliller ve Delillerin Değerlendirilmesi* (On İki Levha Yayıncılık 2012) 124.

94 O'Malley (n 7) 145.; Atalay (n 83) 1958.

95 O'Malley (n 7) 145.

96 Bennouna (n 61) 346.

97 Abdel Wahab (n 5) 190.

98 Flett (n 56) 356.

b. Tribunal-Appointed Experts

A tribunal-appointed expert is a person or organisation appointed to report on specific issues. These particular issues should be explained the tribunal because the tribunal requires guidance due to a lack of expertise in deciding on a dispute.[99]

The tribunal-appointed expert is an independent and impartial natural or legal person engaged by the arbitral tribunal to act in the present case to clarify the missing knowledge that is needed for the tribunal to adjudicate the case and render an award.[100] The tribunal-appointed expert has expertise in one or more areas and is expected to inform the tribunal in those areas during proceedings.

Tribunal-appointed experts are seen more often in countries following civil law legal culture as part of the inquisitorial approach to establishing facts, which is overwhelmingly accepted by jurisdictions following this system.[101] The inquisitorial system primarily burdens the court or tribunal to engage in the fact-establishing process.[102] Therefore, civil law adjudicators tend to rely on experts appointed by courts or tribunals and give less weight to expert opinions provided by the parties.[103]

UNCITRAL Model Law Art. 26(1), EU-Vietnam Investment Protection Agreement ("EUVIPA") Chapter 3 Section A Art. 3.52[104], Turkish International Arbitration Law ("TIAL") Art. 12(A)[105], ICC Arbitration Rules Art. 25(2)[106], and IBA Rules Art. 6 and the Prague Rules on the Efficient Conduct of Proceedings in International Arbitration Art. 6.1 ("Prague Rules") is an example of an explicit provision granting the tribunal the authority to appoint experts.

When analysing the above provisions that foresee the appointment of tribunal-appointed experts, two conditions enable (or even require) the tribunal to appoint an expert when there is a 1) specific technical issue and 2) the opinion of an expert is necessary to render a decision.[107] Both conditions must be present simultaneously, as

99 O'Malley (n 7) 169.; In an ICC case where the tribunal was composed of a lawyer with knowledge on Hungarian law, the tribunal rejected to appoint an expert on that matter, see Importer in the UK v Exporter in Hungary, Final Award, ICC Case No. 5418, 1987,', in Albert Jan Van Den Berg, *ICCA Yearbook Commercial Arbitration 1988*, vol XIII (ICCA & Kluwer Law International 1988) 102.

100 O'Malley (n 7) 165.; Aygül (n 8) 266. ; For the appropriateness for legal persons to act as an expert See Schneider (n 56) 456.

101 Aygül (n 8) 266.

102 Nessi (n 19) 74.

103 Khodykin and Mulcahy (n 4) 282.

104 "The Tribunal, at the request of a disputing party or, after consulting the disputing parties, on its own initiative, may appoint one or more experts to report to it in writing on any factual issue concerning environmental, health, safety, or other matters raised by a disputing party in the proceedings."

105 "A) The arbitral tribunal may; 1. appoint one or more experts to report to it on specific issues to be determined by the arbitral tribunal"

106 "The arbitral tribunal may decide to hear witnesses, experts appointed by the parties or any other person, in the presence of the parties, or in their absence provided they have been duly summoned."

107 Lim (n 43) 216.; Khodykin and Mulcahy (n 4) 285.; ICC (n 48), para. 62.; Schäfer and Wilson (n 56) 64.

the contrary approach would violate the tribunal's obligation to assess, evaluate and conclude its decision.[108]

Before appointing the expert, the tribunal should inform the parties explicitly of its intention to appoint an expert and consult them on the appropriate expert.[109] This would align with the international arbitration culture in which proceedings are planned and conducted with the participation and views of the parties discussed in case management conferences. The tribunal-appointed expert is appointed and trained by the arbitrators and is paid, in principle, by both parties under arbitration costs.[110]

2. Based on Subject Matter

Expert opinions can be submitted by parties or tribunal-appointed experts on various subjects. These subjects are technical (scientific) and legal and valuation (quantum) experts.[111]

According to a recent survey, financial/accounting experts were used most frequently (46%), followed by technical (35%) and industry-specific experts (17%), whereas legal experts were used less frequently (13%).[112] For instance, in *Bear Creek Mining Corporation v. Peru*, the claimant submitted a technical expert opinion on the technical review of the investor's projects in Peru and valuation experts for the damages claimed.[113]

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108 See Contractor (European Country), Contractor (Middle Eastern Country) v. Owner (Middle Eastern Country) (Final Award), ICC Case No. 4629, 1989 in Albert Jan Van Den Berg, *ICCA Yearbook Commercial Arbitration 1993*, vol XVIII (ICCA & Kluwer Law International 1993) 15.: "The arbitral tribunal 'may appoint one or more experts, define their Terms of Reference, receive their reports and/or hear them in person' (Art. 14(2) Rules of the ICC). The arbitrators are at liberty to decide whether such an appointment is necessary for the solution of the case. Such an expert may be useful or even necessary for technical questions. In the present situation, such utility is in no way established. On the contrary, the questions which are typically in the field of activity of an expert have already been covered by the [first expert's] report. This report describes the work done by the defendant party and is necessary for the determination of the payment claimed by the claimants. Other questions such as the ones quoted by respondent are to be resolved by the arbitrators. Moreover, it is their duty to interpret the contractual documents and evidences filed by the parties. Appointing a second expert would lead to a replacement of the arbitrators by an expert. Therefore, independently from the question of the cost of an expertise, the request of respondent is to be dismissed."

109 O'Malley (n 7) 166–167.; In practice, some tribunals engaged an unofficial or behind-the-scenes expert, described as *phantom expert*. This is a problematic approach, because of procedural fairness and the probable delegation of adjudication authority. For an internal advisor, explicit consent should be required. See Reiner and Aschauer (n 7) 136.; Parlett (n 65) 445.; Brendan Plant, 'Expert Evidence and the Challenge of Procedural Reform in International Dispute Settlement' (2018) 9 Journal of International Dispute Settlement 464, 470.; 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 4.; Patocchi, Paolo Michele and Niedermaier (n 19) 1182.

110 Zuberbühler and others (n 42) 171.; Gino Lörcher, 'Der Vom Schiedsgericht Bestellte Sachverständige Im Verfahren' in Robert Briner and others (eds), *Law of International Business and Dispute Settlement in the 2Ist Century* (Carl Heymanns) 487.; Wilske and Markert (n 12), para. 2.1.
The tribunal might rule according to the applicable law to the arbitration procedure, that the losing party shall bear, among other, the expert costs. In arbitration proceedings, the arbitral tribunal according concludes a work contract with the expert on behalf and with the power of attorney of the parties, so that the fee claim is directed against the parties.

111 Born (n 4) 2449.; Hodgson and Stewart (n 66) 454.; O'Malley (n 7) 145.

112 '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (n 12) 29.

113 See *Bear Creek Mining Corporation v. Republic of Peru*, ICSID Case No. ARB/14/21, Award, 30 November 2017, para. 608 ff. https://www.italaw.com/cases/2848 accessed 25 May 2022.

a. Technical (Scientific) Experts

Technical expertise is often required as a substantive area relevant to a case that is usually outside the competence of the tribunal, such as software, construction, oil and gas, mining, intellectual property, and the environment.[114] In addition, experts may be employed for planning/delay analysis, information regarding market practise, technology, and forensic analysis of evidence such as handwriting, photographs, or other data.[115]

When deciding on a legal dispute between parties, the tribunal must engage in scientific fact-finding if the case calls for it.[116] For instance, if a host state in an investor-state dispute argues that it declined to renew the investor's licence to operate because the investor harmed the environment, the case has to be proved by one or more scientists who specialise in chemistry or biology.[117] The unexplained failure to present scientific evidence can lead to adverse inferences.[118]

Technical (scientific) experts are the least problematic in terms of their value to the tribunal and the potential for a biassed opinion. Their opinion has to rely on some objective facts, defined best practises or industry standards that make their view objectively testable.[119]

b. Legal Experts

One would naturally expect that there is no need for legal experts in proceedings because arbitrators as adjudicators[120] and legal counsel of the parties would already have extensive knowledge on matters of law.[121] Acting as legal (tribunal-appointed) experts can be forbidden with a statutory provision in some countries like Türkiye.[122] However, in international arbitration and even sometimes domestic litigation, the a legal expert can be required, [123] especially if there is a foreign (domestic) law issue with which the arbitrators are unfamiliar.[123]

114 Blackaby and Wilbraham (n 19) 661.; Hodgson and Stewart (n 66) 455.; Mosk (n 40) 128.; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 2.; Spitzer (n 88) 28.

115 Harris Bor, 'Expert Evidence' in Julian DM Lew, Harris Bor and et al. (eds), *Arbitration in England with chapters on Scotland and Ireland* (Kluwer Law International 2013) 503.; Mosk (n 14) 75.; Kamya-Lukoda (n 47) 82.

116 Joan E Donoghue, 'Expert Scientific Evidence in a Broader Context' (2018) 9 Journal of International Dispute Settlement 379, 382.

117 See *Methanex Corporation v United States of America*, ad hoc UNCITRAL Tribunal under NAFTA Ch 11, Final Award on Jurisdiction and Merits, 3 August 2005, www.italaw.com accessed 23 May 2022.; See Chemtura Corporation v Government of Canada, ad hoc UNCITRAL Tribunal under NAFTA Ch 11, Award, 2 August 2010, www.italaw.com accessed 23 May 2022.

118 Donoghue (n 116) 385.; O'Malley (n 7) 159.

119 Hodgson and Stewart (n 66) 455.

120 Ünüvar (n 26), para. 56.

121 Spitzer (n 88) 28.; See *VM Solar Jerez GmbH, M Solar Verwaltungs GmbH, Solarizz Holding Verwaltungs-GmbH, M Solar GmbH & Co. KG, Solarizz Holding GmbH & Co. KG and Helmut Vorndran v. Kingdom of Spain*, ICSID Case No. ARB/19/30, Decision on the Proposal to Disqualify All Members of the Tribunal, 18.10.2022, para. 23https://www.italaw.com/cases/8416 accessed 6 April 2023.

122 Despite seen in present court practice, the Turkish Civil Procedural Code (HMK) Art. 266(1) and Turkish Law on Experts (No. 6754) Art. 10(4) prohibits lawyers to be (court-appointed) experts. See for details Elyıldırım (n 83) 113–115.

123 O'Malley (n 7) 174.; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 2.

The legal expert will help the tribunal assess the missing legal knowledge.[124] Legal experts present a particular challenge to arbitration tribunals because their opinions are closely intertwined with advocacy. Legal experts typically provide opinions on domestic and international law.

i. International Law

Arbitrators in international investment disputes are expected to be the foremost experts in international law and investment law.[125] In investment law, submitting a report from a party-appointed expert whose expertise is on international law is not plausible; since the expert presents views on points of law; instead, it would make sense to retain the expert as a co-counsel.[126]

A well-established tribunal will hardly be impressed if the relevant person is appointed as an expert and will know how to weigh the statements. Nevertheless, international legal experts should not be excluded in advance. However, less weight could be attributed to them by the arbitral tribunal if it did not consider them to be relevant.[127]

However, international law experts are frequently used in international investment law disputes. For instance, in the famous *Yukos v Russia* case, among others, the provisional application of the Energy Charter Treaty ("ECT"), possibly concerning the jurisdiction of the arbitral tribunal vis-à-vis cases lodged against Russia, was an issue for which an expert opinion was submitted.[128] As another example, in *Phillip Morris v. Uruguay,*[129] international law experts provided an opinion on the meaning of international intellectual property law, the interpretation of fair and equitable treatment, arbitrary treatment, and the requisites and burdens of proof applicable to denials of justice under customary international law.[130]

According to the principle of *the iura novi arbiter,* the arbitrator must exhaust all knowledge sources when determining the law's content. If the arbitrator cannot access the relevant information despite every effort, he or she shall use a legal expert. This is natural because the arbitrator should try to render an award that is safe to annul and subject to enforcement.[131]

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124 Wach and Petsch (n 1) 96.; Rolf Arno Schütze, *Das Internationale Zivilprozessrecht in Der ZPO: Kommentar* (2., De Gruyter 2011) 70–71.

125 Hodgson and Stewart (n 66) 455.

126 Blackaby and Wilbraham (n 17) 655, 661.

127 Dana H Freyer, LW Newman and RD Hill, 'Assessing Expert Evidence', *The Leading Arbitrators' Guide to International Arbitration* (2., Juris 2008) 441. Almost all respondents (%93) in the BCLP Survey share this viewsee 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 9.

128 *Yukos Universal Limited (Isle of Man) v. The Russian Federation*, UNCITRAL, PCA Case No. 2005-04/AA227, Final Award, 18 July 2014, para. 47 https://www.italaw.com/cases/1175 accessed 8 July 2022.

129 Alvarez (n 51) 414–418.

130 Alvarez (n 42) 418; Ünüvar (n 26), para. 53.

131 Centner (n 123) 112.; It is even possible that eight legal experts do not suffice to determine the applicable legal rules

ii. Foreign (Domestic) Law

Although arbitrators should also be appointed based on their knowledge of the relevant domestic law, legal experts are more often employed to present opinions on the application of domestic law.[132] Some have pointed to the particular circumstance of investment arbitration for the need to understand procedural and substantive areas of domestic law in jurisdictions unfamiliar to the arbitrators to account for the practise of resorting to legal experts.[133]

It is expected that the tribunal, or at least one of the members appointed by the parties or the court, has an extended knowledge of the law applicable to the dispute's merits. However, given the nature of complex multi-party arbitrations in practise, it is highly likely that arbitral tribunal members will need assistance in understanding specific provisions of foreign law that they need to become more familiar with.[134]

Additionally, if an amended legal provision has been so far back that it is difficult for the arbitrator to have a firm understanding of the issue, then a legal expert may be useful.[135] In such cases, legal experts can be appointed by the tribunal, or the parties can rely on party-appointed experts. [136]

In English courts, attorneys establish applicable foreign law by reference to expert evidence.[137] The Singapore International Commercial Court Practice Directions also allow the use of foreign law experts.[138]

Generally speaking, in countries following the civil law approach, courts have considerable authority to apply foreign law and determine its content.[139] In international arbitration, the responsibility for determining foreign law is generally divided between the parties to the plea and the tribunal. However, a different approach can be adopted in each case, depending on the counsel and the arbitrators. For instance, in Yukos v Russia, legal expert opinions were submitted on the constitutional legal aspects of the conclusion and application of the international treaties of Russia and the arbitrability

see II ZR 49/90 21.01.1991, Bundesgerichtshof, 2nd Civil Law Chamber https://research.wolterskluwer-online.de/document/02ca3283-2688-4f23-9628-77d13378047d accessed 30.12.2022.

132 Blackaby and Wilbraham (n 17) 661.; John Townsend, 'Expert or Advocate? How to Present Foreign Law' in Julie Bédard and Patrick W Pearsall (eds), *Reflections on International Arbitration: Essays in Honour of Professor George Bermann* (JURIS 2022) 192-193.

133 Blackaby and Wilbraham (n 17) 660.

134 Khodykin and Mulcahy (n 4) 287.

135 Centner (n 123) 98.

136 Rolf Arno Schütze, 'Der Beweis Des Anwendbaren Rechts Im Schiedsverfahren Und Die Feststellung Seines Inhalts' in Walter Eberl (ed), *Beweis im Schiedsverfahren* (1., Nomos 2015) 154.

137 Khodykin and Mulcahy (n 4) 287.

138 Singapore International Commercial Court Practice Directions, Rule 26 (2)https://www.judiciary.gov.sg/docs/default-source/amendments-docs/2022/sicc-pd_2022_v1.pdf?sfvrsn=4d986e38_2 accessed 11 December 2022.

139 See International Law Asociation Committe on International Commercial Arbitration, 'Ascertaining the Contents of the Applicable Law in International Commercial Arbitration' (2008) V Revista Brasileira de Arbitragem 163.

of taxation-related issues under Russian law.[140] Similarly, in *Joshua Dean Nelson v. The United Mexican State,* the disputing parties adduced expert reports concerning Mexican and U.S. civil and administrative law, specifically concerning corporations and bankruptcy law.[141] In a mining dispute filed against Peru, multiple expert opinions were acquired from both the claimant investor and the respondent host state. The opinions were related to Peruvian mining law provisions. Again, in *Phillip Morris v. Uruguay*, Uruguay law experts expressed views about whether the implemented law allegedly deprived the investor, extended the police power to protect health, protected the use of trademarks, considered trademarks as property, or enabled contradictory decisions by national courts.[142]

Over-reliance on domestic law experts is dangerous because there might be multiple views on a domestic law issue.[143] Additionally, lawyers may often be poor experts because they can easily cross the line between being in the shoes of an expert and advocating for the appointing party.[144] In addition, there is always the opportunity to engage with local co-counsel, who are naturally expected to know and have the capacity to make arguments on local law.

The tribunal may not have to appoint a real person directly, but it can choose to acquire knowledge from a university or institution such as the Max-Planck Institute (MPI) for International and Comparative Law or the MPI for International Procedural Law.

For the appointment of a foreign law expert, the crucial point is that the tribunal shall not, in any case, delegate its adjudication duty and authority to the legal expert.[145]

c. Quantum (Valuation) Experts

After a tribunal concludes that one or more parties are liable for damages but cannot calculate the damages because it is not able to determine it based on the knowledge of its members, quantum experts can be consulted.[146] If the tribunal needs to evaluate

140 Ünüvar (n 20), para. 48.; *Yukos Universal Limited (Isle of Man) v. The Russian Federation*, UNCITRAL, PCA Case No. 2005-04/AA227, Final Award, 18 July 2014, para. 47 https://www.italaw.com/cases/1175 accessed 8 July 2022.

141 Joshua Dean Nelson and Jorge Blanco v. United Mexican States, ICSID Case No. UNCT/17/1, Final Award, 5 June 2020, para. 165. https://www.italaw.com/sites/default/files/case-documents/italaw11557_0.pdf accessed 9 July 2022.

142 Alvarez (n 51) 418.; Ünüvar (n 20), para. 53.; O'Malley (n 6) 173.

143 Hodgson and Stewart (n 66) 455.; Khodykin and Mulcahy (n 4) 287.

144 Blackaby and Wilbraham (n 17) 661.

145 Oetiker (n 10) 313.

146 Joshua B Simmons, 'Valuation in Investor-State Arbitration: Toward A More Exact Science' (2012) 30 Berkeley Journal of International Law 196, 208.; White (n 43) 128.
In investor-state arbitrations, generally, if the investor prevails partially or fully in its claims, damages are awarded. An UNCTAD study reviewing cases concluded in 2014 found that only 2% of cases concluded that year found a breach, but did not award damages to the investor. UNCTAD, 'UNCTAD IIA Issues Note' (UNCTAD 2015) 1 8 <https://unctad.org/system/files/official-document/webdiaepcb2015d1_en.pdf>. Similar statistics were found for cases concluded in 2015, see UNCTAD, 'Investor-State Dispute Settlement: Review of Developments in 2015' (UNCTAD 2015) http://investmentpolicyhub.unctad.org/Upload/ISDS%20Issues%20Note%202016.pdf accessed 11 July 2022; Abdel Wahab (n 5) 183.

the value of a specific asset, set of goods or a company, quantum (valuation) experts are the types of experts that can be engaged by the tribunal or the parties. Quantum experts include cost engineers, accountants, and financial experts.

In some cases, it may be easily determinable for the tribunal, based on records, to calculate the claim of the claiming party. However, this is mostly not the case. How should an average arbitrator expect a melting furnace to explode in a facility, a fire surrounding and damaging a whole facility that becomes inoperable for months? Not only the price of the furnace but also the installation work, all damaged equipment, and financial losses due to inoperability must be calculated. In addition, when licences have been illegally ceased or the facilities of an investor projected to operate for decades in the relevant state have been expropriated, the expected income has to be calculated. Thus, the tribunal will need the opinions of one or more experts to award compensation.

The incapacity of fiscal skills of lawyers acting as arbitrators renders quantum experts the most visible expert category in arbitration[147]. Quantum experts are exptected to be a bridge for arbitral tribunals. However, practical application shows that crossing a bridge is challenging due to the availability of multiple calculation approaches and models for the same occasion.[148] For instance, the "income-based approach", which estimates the value of a business based on "discounted cash flow", the "market-based approach", which compares the subject of valuation to that of other similar businesses and the "assets-based approach" which is based on the idea that an asset is worth no more than it would cost to replace all its constituent parts.[149]

In particular, when it comes to investment arbitration, party-appointed quantum experts present the greatest challenge in increasingly high-stakes cases because they generally present widely divergent estimates of damages that tribunals struggle to understand and make use of. [150] Although there have been efforts to tackle these problems through collective[151] or individual efforts[152], arbitral tribunals have been criticised for decisions on damages or compensation that lack a sufficient explanation of how valuation was determined or the use of inconsistent methodologies in an effort

147 Ünüvar (n 20), para. 61.

148 Blackaby and Wilbraham (n 19) 661.; O'Malley (n 7) 173.; To overcome the challenges see Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 13–14.

149 Faruk Kerem Giray, *Milletlerarası Yatırım Tahkiminde Kamulaştırmadan Doğan Tazminat ve Tazminatın Hesaplanmasında Kullanılan Yöntemler* (2., Beta Basım 2013) 222 ff.; John A Trenor (ed), *The Guide to Damages in International Arbitration* (4., Law Business Research Ltd 2021) 164 ff.; Ferhan Yıldızlı, *Uluslararası Tahkimde Zararın Değerlendirilmesi* (Seçkin 2020) 122.

150 Blackaby and Wilbraham (n 19) 663.

151 The International Valuation Standards Council (IVSC), is a non-profit organisation dedicated to establishing and promoting global valuation standards. See International Valuation Standards at https://www.ivsc.org/.

152 See Faruk Kerem Giray, Milletlerarası Yatırım Tahkiminde Kamulaştırmadan Doğan Tazminat ve Tazminatın Hesaplanmasında Kullanılan Yöntemler, İstanbul, 2013, 229

to synthesise divergent expert valuations.[153] Such weaknesses in reasoning can lead to challenges to awards and, in some instances, to the annulment of damages awards.[154]

III. Problems Related to the Use of Party-Appointed Experts

The dominant use of party-appointed experts in international arbitration poses challenges. There are obvious concerns in practise as to their fair and efficient use.[155] Problems surrounding the use of party-appointed experts can be classified into two main categories: Bias and unregulated use of party-appointed experts.

A. Bias

The first category of the problem concerns the personality of the party-appointed expert, specifically, his potential to be biassed compared to the tribunal-appointed expert.[156]

It is unsurprising that the party-appointed expert was not completely independent. However, this lack of independence is a natural result when the nature of engagement is considered. Nevertheless, it is not the dependency itself that is creating the problems, but dependency affecting impartiality[158] in a way that leads to bias.[157]

The reality that experts are carefully chosen and paid for by the parties consciously or subconsciously impacts the framing of their view of supporting the party employing them. This does not mean that experts are directly or purposefully biassed. However, close engagement may influence them to adopt favourable positions or directions in the light of evidence for the benefit of the appointer.[158]

Bias can be especially present in the presence of full-time experts who have an interest in retaining them in future disputes. Bias is also a particular concern where the same counsel or parties consistently engage the same experts on related matters. A typical example of this is the constant appointment of the same expert by the same respondent state.[159]

153 *Simmons* rightly argues that "negative consequences of inaccurate and opaque valuations can extend to the entire arbitral system, beginning with lost confidence in awards and unreliable expectations about future cases." Simmons (n 147) 208.

154 Hodgson and Stewart (n 66) 456.; See e.g. *Venezuela Holdings, B.V. and others v Bolivarian Republic of Venezuela*, ICSID Case No ARB/07/27, Decision on Annulment, 9 March 2017 https://www.italaw.com/sites/default/files/case-documents/italaw8536.pdf accessed 18 November 2022; *Occidental Petroleum Corporation and others v Republic of Ecuador*, ICSID Case No ARB/06/11, Decision on Annulment, 2 November 2015 https://www.italaw.com/sites/default/files/case-documents/italaw4448.pdf accessed 18 November 2022.

155 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 23.

156 Aygül (n 7) 270; Van Houtte (n 26) 136; Waincymer (n 17) 933; Klaus Sachs and Nils Schmidt-Ahrendts, 'Protocol on Expert Teaming: A New Approach to Expert Evidence' (2011) 15 Arbitration Advocacy in Changing Times, ICCA Congress Series 135, 135.; Ziya Akıncı, 'Milletlerarası Tahkimde Bilirkişi', *Milletlerarası Tahkim Semineri 2010* 78.; Balkar (n 4) 167.

157 Balkar (n 4) 177; Catherine A Rogers, *Ethics in International Arbitration* (Oxford University Press 2014) 145.

158 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 23.

159 ibid.

An experienced arbitral tribunal is the most important barrier to bias. [160] If there are serious signs recognised by the arbitral tribunal that hint at a partisan attitude of the party-appointed expert, the tribunal will not credit the expert's opinion and, although it would not exclude his opinion from the record, will deem it *de facto* inadmissible. [161]

B. Unregulated Use of Party-Appointed Experts

The second problem relates to the method by which party-appointed experts are adduced. There are no clear rules in practise besides the obvious soft law instruments (IBA Rules and CIArb Protocol). This leads mostly to an unregulated and hence unorganised use of party-appointed experts. Specifically, there are no rules on whom to appoint, how to appoint, and when to appoint. Most institutional rules contain only general provisions for obtaining evidence or establishing facts, leaving details to be determined by the tribunal and sometimes the parties.

This leads to a random flow that creates multiple issues. Appointing experts without being necessary at all or without the direction of the arbitral tribunal leads to unnecessary arbitration costs and delays in proceedings. For instance, if there are no clear rules on the engagement of experts, the party may not appoint an expert where it is required or, appoint an unrelated or unqualified expert. Additionally, without clear time limits, a party that had not considered engaging an expert may suddenly try to submit an opinion at a later phase in the proceedings, which delays the proceedings.

As the memorial style for written party submissions is generally practised in international arbitration, expert opinions are generally already submitted, which prevents them from having a common understanding of how to form the opinion and almost inevitably leads to conflicting experts.[162] Having "conflicting experts" is not the real problem, but the way the experts present diverse opinions is creating the issues. The experts will highly likely have produced opposing opinions relying on different facts, data and methodologies during the formation. In the end, the tribunal, which is already not familiar with the matters and is in need of clear guidance, will not be helped out.

Additionally, the absence of rules for the assessment of expert opinions can be problematic, at least for inexperienced arbitrators.

160 84% of respondents agreed that tribunals are 'generally capable of determining when a party appointed expert is not being objective in their testimony' (see 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 14.

161 93% of respondents thought that 'a tribunal should give limited weight to the evidence of a party-appointed expert who breaches his/her duty to remain independent and assist the tribunal', see ibid.; Doug Jones, 'Party Appointed Expert Witnesses in International Arbitration: A Protocol at Last' (2008) 24 Arbitration International 137, 137.; Elena Samaras and Christof Strasser, 'Managing Party-Appointed Experts in International Arbitration--Analysis of the Current Framework and Best Practice Proposals-' (2013) 11 Zeitschrift für Schiedsverfahren 314, 314.

162 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 34.

These challenges lead to prolonged proceedings, increased costs and reduced value for the expert's evidence.[163]

IV. Empirical proof of the Problems

For more than 17 years, The Queen Mary University School of International Arbitration, with the financial support of various legal firms such as White & Case, PriceWaterhouseCoopers (PwC) and Pinsent Masons, has conducted empirical studies that shed light on the developments, trends, and issues faced in international arbitration. [164] Reports from 2012, 2015, 2018, 2020, and 2021 indicate statistics regarding experts from which the need for development and change can be derived.

In the 2012 report, preferences were, in fact, more balanced: 43% found experts more effective when appointed by the parties, while 31% found tribunal-appointed experts more effective. Consistent with domestic litigation practise and culture[165], more civil lawyers (43%) than common lawyers (19%) found tribunal-appointed experts more effective. Those who preferred tribunal-appointed experts argued that party-appointed experts often act as partisan advocates for the party that appointed them, which regularly leads to the appointment of a third tribunal-appointed expert. According to them, a system in which an expert is appointed by the tribunal from the outset would bring about a more neutral expert opinion and save time and money.[166]

In the 2018 report, when asked whether arbitration rules should include standards of independence and impartiality of party-appointed experts, 69% respondents answered affirmatively, demonstrating a clear need.[167]

It is known in international arbitration that some figures are prominently known not only for their appointment as arbitrators but also for acting as counsel and experts, thus creating the phenomenon called "double hatting".[168] In the 2020 report, 57% of respondents indicated that arbitrators should be allowed to act as experts in other

163 Jones, 'Party Appointed Expert Witnesses in International Arbitration: A Protocol at Last' (n 161) 137.; Samaras and Strasser (n 161) 314.

164 See Queen Mary University of London School of International Arbitration web page https://arbitration.qmul.ac.uk/research/

165 Süha Tanrıver, *Medenî Yargıda Bilirkişilik* (Yetkin Yayınları 2016) 32.

166 '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (n 12) 29.

167 '2018 International Arbitration Survey: The Evolution of International Arbitration' (Queen Mary University of London and White and Case 2018) 33–34 <https://arbitration.qmul.ac.uk/media/arbitration/docs/2012_International_Arbitration_Survey.pdf> accessed 25 April 2022.

168 "Double hatting" is the practice of individuals switching roles as arbitrator, counsel and expert in different arbitral proceedings and as the common practice whereby "experienced practitioners who actively represent parties before arbitral tribunals serve as arbitrators in other cases." See for details Dennis H. Hranitzky, Eduardo Silva Romero, 'The 'Double Hat' Debate in International Arbitration' (2010) New York LJ).
See *Tethyan Copper Company v Islamic Republic of Pakistan* (ICSID Case No ARB/12/1); *SolEs Badojoz GmbH v Kingdom of Spain* (ICSID Case No ARB/15/38). The challenge was filed on 7 July 2017 and rejected on 5 September 2017.

Investor-State disputes.[169] Although more parties were in favour of the arbitration agreement, a substantial number of them potentially bear the fear that the small privileged arbitration community could influence each other.

In the 2021 report, when asked respondents as a party or counsel which procedural options they would leave out in order to have cheaper or faster proceedings, %13 selected to opt out for a party-appointed expert. This proves that party-appointed experts are still needed in international arbitration.

Some arbitrators adopted the view that party-appointed experts are sometimes used as 'hired guns', which they do not desire.[170] On the other hand, some counsel stated that a tribunal-appointed expert may also become a *de facto* fourth arbitrator, which, in their view, was undesired.[171]

V. Recommendations For the Use of Party-Appointed Experts

These critics of party-appointed experts are not restricted to international arbitration; they can also be observed in various domestic courts.[172] The IBA and the CIArb have developed comprehensive standards of conduct for party-appointed experts.[173] In addition, various recommendations have been proposed over the years for international commercial and investment arbitration and domestic litigation.[174]

A. Proactive Case Management

The tribunal has the primary responsibility and authority to determine and direct proceedings. Nevertheless, the parties' views and contributions are crucial for a flawless proceeding.

169 '2020 International Arbitration Survey:" Investor-State Dispute Settlement (ISDS)' (Queen Mary University of London and Corporate Counsel International Arbitration Group (CCIAG) 2020) 15 <https://arbitration.qmul.ac.uk/media/arbitration/docs/QM-CCIAG-Survey-ISDS-2020.pdf> accessed 21 April 2022.

170 Giovanni De Berti, 'Experts and Expert Witnesses in International Arbitration : Adviser , Advocate or Adjudicator?' in Nikolaus Pitkowitz and Alexandre Petsche (eds), *Austrian Yearbook on International Arbitration 2011*, vol 2011 (Manz'sche Verlags- und Universitätsbuchhandlung; Manz'sche Verlags- und Universitätsbuchhandlung 2011) 54.; Abdel Wahab (n 5) 191.; Waincymer (n 19) 933.; This argument is made especially for "professional experts" see Proske (n 4) 30.

171 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 12) 17.; '2021 International Arbitration Survey: Adapting Arbitration to a Changing World' (Queen Mary University of London and White and Case 2021) 14 <https://arbitration.qmul.ac.uk/media/arbitration/docs/LON0320037-QMUL-International-Arbitration-Survey-2021_19_WEB.pdf> accessed 20 April 2022.

172 For critics in Türkiye see Süha Tanrıver, 'Yasal Düzenleme ve Teorik Boyutuyla Bilirkişilik' (Lexpera 2022) <https://www.youtube.com/live/F_b6CuiIn1Q?feature=share&t=22667>.; For critics in the UK see Lord Woolf, " MR, *Access to Justice: Final Report to the Lord Chancellor of the Civil Justice System in England and Wales* (Final Report, 1996); Proske (n 4) 13-30.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 25–26.

173 Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 6.; Sachs and Schmidt-Ahrendts (n 22) 137.

174 See Fulya Teomete Yalabık, 'Questioning Expert Witnesses in Litigation and International Arbitration: How to Prevent Partisan Expert Reports and "Battle of Experts"' 16 Medeni Usul ve İcra İflas Hukuku Dergisi 133.

Jones proposes solutions in his "Party Appointed Experts Case Management Protocol" ("The Jones Protocol") to enhance the usefulness of party-appointed experts. He stresses proactive involvement by the arbitral tribunal and reinforcement of the expert's duty to assist the tribunal. [175]

Rather than leaving the matter to the expert's discretion, the tribunal should determine, in cooperation with the parties, at an early stage of the proceedings, the whole procedure concerning experts. The tribunal shall determine the disciplines for which expert opinion is required and a list of questions that they want the experts to address.[176] This ensures, from the outset, that the opinion(s) will be tendered only on relevant issues, preventing the procedure from having long and excessive proceeding costs.[177]

After the relevant disciplines are selected and experts are appointed early in the proceedings, the parties have the opportunity to challenge the experts. If the parties believe that they have found a proper ground that allows them to leave the expert to provide a biassed opinion, they should challenge it immediately. This improves the efficiency of the proceedings, avoiding later challenges and prolonging the assessment of the opinions.[178]

The tribunal could declare that it will impose cost sanctions on party-appointed experts who breach their duty to remain impartial and assist the tribunal. [179]

The arbitral tribunal will not be able to draw conclusions from two different opinions that address substantively different issues or issues. Therefore, within each expert discipline, the tribunal should establish a common list of questions and issues for the appointed experts to address.[180] Thus, arbitrators will understand whether a genuine difference in methodology or analysis leads to different opinions. Common questions and issues should be identified, if possible, with the assistance of the parties during the case management conference.[181]

It is vital that the tribunal maintains active oversight over this process, for example, by assisting when parties are unable to agree on the questions to be asked.

175 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 24.

176 Bor (n 115) 509.; Blackaby and Wilbraham (n 19) 666–668.; Instructions to the expert should be drafted carefully to ensure that experts deal with all relevant matters, without leading them to adopt a particular line of position.

177 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 34.; See for similar practice ICC (n 48) 13, para. 62.; 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 19.

178 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 34.

179 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 9.

180 Since the memorial style for written party submissions is generally practiced in international arbitration, expert opinions are generally already submitted, which prevents party-appointed experts to address the same issues based on the same facts. See Jones for critics Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 34.

181 ibid 36.

Another vital point is that an objective analysis is only possible after all the factual evidence has been provided to both experts. A party-appointed expert who has only been provided evidence from the appointing party will not be able to create an objective opinion.[182] Hence, the tribunal has to ensure that the parties provide both their appointed and counterparts experts with the same factual evidence and common dataset, and expert reports should only be submitted after they have been established.[183]

B. Code of Conduct and Double Hatting

Although some arbitral rules and the IBA Guidelines on Conflicts of Interest in International Arbitration regulate the code of conduct for arbitrators[184], no widely accepted code of conduct in international arbitration that refers to party-appointed experts.[185] The Chartered Institute of Arbitrators (CIArb) Protocol for the Use of Party-Appointed Expert Witnesses in International Arbitration appears to be the only soft law instruments that comprehensively touches on the use of party-appointed experts in international arbitration.[186]

The lack of a code of conduct has led to the same individuals acting in various roles in international arbitration, the so-called "double hatting". Double hatting is an activity describing a situation where actors, such as arbitrators, party counsel, and experts in investor-state dispute resolution proceedings, play various roles in different proceedings with different roles in each proceeding, such as being an arbitrator in one proceeding and an expert in another.[187]

Double hatting has been criticised for a long time, and the Working Group III of the United Nations Commission on International Trade Law (UNCITRAL) has worked on a draft code of conduct for arbitrators in international investment dispute resolution, aiming to prevent this phenomenon.[188] The draft code of conduct for arbitrators aims, among other issues, to reinforce the duty of independence and impartiality and regulates the practise of arbitrators acting as experts in international investment disputes.

182 That is one of the main reason the Memorial Style of submission is criticized, for details See ibid.

183 ibid.

184 Balkar (n 4) 37.

185 Mark Kantor, 'A Code of Conduct for Party-Appointed Experts in International Arbitration - Can One Be Found?' (2010) 26 Arbitration International 323, 323.; Balkar (n 4) 168.

186 The CIArb Protocol Article 4(1) foresees that the "expert's opinion shall be impartial, objective, unbiased and uninfluenced".

187 See Malcolm Langford, Daniel Behn and Runar Hilleren Lie, 'The Revolving Door in International Investment Arbitration' (2017) 20 Journal of International Economic Law 301.legal counsel, expert witness, or tribunal secretary. If this claim is correct, it has implications for our understanding of which individuals possess power and influence within this community; and ethical debates over conflicts of interests and transparency concerning 'double hatting'-when individuals simultaneously perform different roles across cases. In this article, we offer the first comprehensive empirical analysis of the individuals that make up the entire investment arbitration community. Drawing on our database of 1039 investment arbitration cases (including ICSID annulments

188 https://unis.unvienna.org/unis/en/pressrels/2023/unisl343.html (accessed 6 May 2023)

Although not finally and formally adopted, the code of conduct foresees that as a principle, an arbitrator shall not act concurrently within a specified period of time following the conclusion of an international investment dispute as an expert in another international investment dispute involving (a) the same measures, (b) the same or related parties, or (c) the same provisions of the same treaty.

Double hatting has been already forbidden in the United States-Mexico-Canada Agreement (USMCA) Article 14.D.6(5)(c), such that the arbitrator shall not, for the duration of the proceedings, act as a party-appointed expert in any pending arbitration under USMCA.[189] Additionally, EU-Mexico Trade Agreement Article 13(1) of the "Resolution of Investment Disputes" section Article 13(1) foresees that arbitrators, upon appointment, shall refrain from acting as party-appointed experts in any pending or new investment protection dispute under EU-Mexico Trade Agreement or any other agreement or domestic law.[190]

C. Tribunal-Appointed Expert

Tribunal-appointed experts are generally not preferred over party-appointed experts. Nevertheless, the tribunal may appoint an expert if expertise is required to decide on the disputed matters and the parties have not adduced expert opinion.

The tribunal may appoint an expert whose competence is known to it, approach a specialist institution to identify expertise and invite the parties to offer suitable experts. The benefit of this process is reliance on the tribunal's competence to determine the key issues of the case sufficiently early in the proceedings to allow for the efficient deployment of the expert.[191]

Additionally, if there are multiple party-appointed experts and the tribunal feels lost due to the complexity of both opinions are not sufficiently clarifying the issues of expertise required, the tribunal can appoint an expert and resort to him as a guide.[192] In that case, the expert should preferably deal only with issues with which the party-appointed experts disagree.[193] This method is viable in situations where

189 United States-Mexico-Canada Agreement, entered into force on July 1, https://ustr.gov/sites/default/files/files/agreements/FTA/USMCA/Text/14-Investment.pdf (accessed 5 May 2023); Ünüvar (n 26), para. 37.

190 EU-Mexico Trade Agreement, not in force yet, https://circabc.europa.eu/ui/group/09242a36-a438-40fd-a7af-fe32e36cbd0e/library/9f9e6630-7c43-49df-8a5f-653a23839b94/details (accessed 5 May 2023).

191 Khodykin and Mulcahy (n 4) 332.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 21.

192 Khodykin and Mulcahy (n 8) 330.; Tanrıver, *Hukukumuzda Bilirkişilik* (n 5) 34.

193 O'Malley (n 7) 172.; Abdel Wahab (n 5) 196.; Lim (n 43) 214.; See *Perenco Ecuador Ltd. v. Republic of Ecuador and Empresa Estatal Petróleos del Ecuador (Petroecuador)*, ICSID Case No. ARB/08/6, Interim Decision on the Environmental Counterclaim, 11 August 2015, para. 585 https://www.italaw.com/sites/default/files/case-documents/italaw6315.pdf : "The Tribunal has now arrived at the point where it has narrowed the counterclaim on the principal issues of law and fact. The Tribunal has set out the main issues of fact and law which have divided the experts. However, with regard to many of the IEMS/GSI differences, the Tribunal does not feel able to prefer one above the other. It seems to the Tribunal that each was attempting to achieve the best result for the party by whom they were instructed, and that they crossed the boundary between professional objective analysis and party representation. It is clear to the Tribunal that the experts were effectively shooting at different targets and this has made the work of this Tribunal most difficult."

party-appointed experts disagree on a very specific point or when the tribunal has doubts as to the impartiality of the party-appointed experts.[194] For instance, in *S.D. Meyers v Government of Canada*, the tribunal decided whether a "[t]ribunal expert should be appointed pursuant to Article 27(1) of the UNCITRAL Rules to assist in the determination of issues that are outstanding as between the Disputing Parties' expert[s]".[195]

An empirical study shows that tribunal-appointed experts, an alternative to party-appointed experts, are less favoured by practitioners.[196] Not only does it help the party by fulfilling the burden of proof, but it also prolongs the case, leads to additional costs, and sometimes even does not solve the issue.[197] The use of a tribunal-appointed expert is associated with the risk that the tribunal will rely too heavily on the expert's opinion rather than making its own determination. The tribunal may end up delegating key decision-making responsibilities to the expert, especially if it's a legal issue.[198]

In some instances, having a tribunal-appointed expert may be cost-effective, especially if the parties have adduced experts on technical or legal matters but not on quantum.[199] Practise reveals that this method is not widespread[200], and some practitioners reveal that the use of tribunal-appointed experts might not be cost effective and time-efficient in every case.[201]

Although not realistic, in theory, a party-appointed expert can become a tribunal-appointed expert with consent from the counterparts.[202] A tribunal may be reluctant to appoint an expert. Court practise also shows that it is not mandatory to appoint a tribunal if it is not requested in a timely manner.[203]

194 Wilske and Gack (n 9) 893.; See Van Houtte (n 30).

195 *S.D. Myers, Inc. v. Government of Canada*, Procedural Order No. 17, 26 February 2001, para. 12https://jusmundi.com/en/document/other/en-s-d-myers-inc-v-government-of-canada-procedural-order-no-17-and-no-18-monday-26th-february-2001#other_document_1293 accessed 19 August 2022.

196 While %41 are in favour, %32 are against it, see 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 9.

197 Wilske and Gack (n 8) 86, 94.

198 Jones, "Ineffective Use of Expert Evidence in Construction Arbitration", 10.

199 Khodykin and Mulcahy (n 4) 283.; Knoblach (n 5) 282.

200 *Wall* states that she has witnessed this only 11 times in 130 recent BIT cases where damages were awarded. See Vikki Wall, 'States as First Class Citizens? Special Treatment for States in International Disputes', *State involvement in arbitrations* (2022) <https://arbitrationblog.kluwerarbitration.com/2022/06/05/lidw-2022-states-as-first-class-citizens/>.

201 See Anne K Hoffmann and Nish Kumar Shetty, 'Evidence and Hearings' in Albert Jan Van Den Berg (ed), *International Arbitration: The Coming of a New Age?* (ICCA & Kluwer Law International 2012) 215.

202 Wach and Petsch (n 1) 111.; In line with IBA Guidelines 2.1 (waivable red list).

203 *4A_617/2010*, 14 June 2011, Schweizeriches Bundesgericht, 1st Civil Law Chamber https://www.swissarbitrationdecisions.com/sites/default/files/14%20juin%202011%204A%20617%202010.pdf accessed 11 September 2022.2011 involved a dispute between a Turkish company and its Polish contractor with regard to the construction of the boiler in an industrial power plant in Bulgaria. The pertinent contracts provided for ICC arbitration in Zurich and when a dispute arose as to the responsibility for the delays in the performance of the work, the Turkish company filed a request for arbitration. A three-member arbitral tribunal sitting in Zurich under the ICC rules was constituted.\n\nIn its award of September 30, 2010, the Arbitral tribunal rejected the claim and partly upheld the counterclaim.\n\nAn appeal was made and the following points from the opinion are interesting:\n\nBoth parties had resorted to party-appointed experts and the Appellant argued that the arbitral tribunal would have relied solely on the opinion of the other party's expert instead of the arbitrators appointing their own expert (see section 3 of the opinion in this respect

If the arbitral tribunal considers itself to have adequately informed the subject, it may reject a request to appoint an expert.[204] In doing so, the arbitral tribunal should expressly state the reasons for refusal in order to prevent any further concerns regarding due process.

D. Joint Appointment and Expert Teaming

A hybrid method of expert appointment could be used where either both parties nominate the expert to be appointed by the arbitral tribunal or, without the participation of the tribunal, directly appoint a single joint expert.[205] Alternatively, the parties may propose some experts, and the tribunal chooses one from each list, the so-called "Expert Teaming".[206]

If the parties can agree on a single joint expert, this would help reduce costs and streamlining the proceedings.[207] When agreeing on a single joint expert, the parties should clarify in terms of reference whether they will be bound by the conclusions of the joint expert and the report. Almost half (%46) of the stakeholders in arbitration believe that counsel should consider joint expert reports for better arbitration.[208]

The expert teaming method foresees each party exchanging a list of expert candidates and comments on the other candidates.[209] The tribunal then selects two experts, one from each list, to form the expert team. The arbitrators and the parties meet the expert team to establish the terms of reference that outline the expected qualifications of the report.[210] After that, a joint preliminary report will be circulated to the tribunal and the parties.[211] The expert team would be questioned at the hearing, including by the parties' expert

204 *III ZR 44/89* 21.12.1989, Bundesgerichtshof, 3rd Civil Law Chamber https://research.wolterskluwer-online.de/document/2ed8f851-18cd-4d0c-8431-aa4fcc527333 accessed 22 February 2023.; Survey shows that whether practitioners have had direct experience of a tribunal refusing to allow a party's request to appoint an expert. 73% had no experience of this. 24% had in fewer than five cases, 2% in between five and ten cases and just 1% in more than ten cases, See 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 19.

205 Sachs and Schmidt-Ahrendts (n 150) 144.; Schäfer and Wilson (n 56) 65.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 22.; Also, the ICC Centre for ADR can be engaged to select experts whose experience is tailored to the particular needs of the parties. See 'ICC Commission on Arbitration and ADR Report: Resolving Climate Change Related Disputes through Arbitration and ADR' (ICC 2019) ICC Commission on Arbitration and ADR 999 ENG 26, para. 5.32.; Webster and Bühler, *Handbook of ICC Arbitration: Commentary, Precedents, Materials* (n 12) 446.

206 In the BCLP Survey, the most favoured alternative to the party-appointed expert was a tribunal-appointed expert nominated by the parties (%58), followed by a single joint expert directly appointed by the parties (%53), 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 9.; Webster and Bühler, *Handbook of ICC Arbitration: Commentary, Precedents, Materials* (n 12) 446.; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 10.

207 Khodykin and Mulcahy (n 4) 283.; See Schäfer and Wilson (n 56) 65.; This has been regulated in UK law after similar critics, see Aygül (n 8) 269.; See Fulya Teomete Yalabık, 'Questioning Expert Witnesses In Litigation And International Arbitration: How To Prevent Partisan Expert Reports And "Battle Of Experts' 16 Medeni Usul ve İcra İflas Hukuku Dergisi 133.

208 '2015 International Arbitration Survey: Improvements and Innovations in International Arbitration' (Queen Mary University of London and White and Case 2015) 30.

209 Sachs and Schmidt-Ahrendts (n 22) 145–146.

210 ibid 145.

211 ibid 145.

consultants[212].[213] This method can provide checks and balances for expert findings. This is potentially a way of ensuring the credibility of experts.[214]

E. Pre-Hearing Expert Meeting and Joint Report

A pre-hearing expert conference is a meeting between the party-appointed experts before the main hearing(s) in which they discuss the disputed expertise-required issues that need to be explained to the tribunal. The goal of this meeting is to streamline the expertise process and ultimately make the proceedings cost-efficient.[215]

After the exchange of initial or draft opinions[216], the parties' experts (within each discipline) can meet and discuss matters requiring expert opinions. [217] In this meeting, the experts will come together and discuss their understanding of the issues and initial views.[218] At such meetings, the experts should attempt to come to common ground on as many issues as possible, record them in writing, and submit a joint report.[219] For issues where experts have a difference of opinion, they should render separate views indicating the reasons for their disagreement, adding to that what their conclusions would be if they adopted the counter-expert's position.[220]

The joint report should identify, in summary form, (a) assumptions, methodology, and opinions on which the experts agree and (b) assumptions, methodology, and opinions on which they disagree.[221] This will help to avoid comparing apples to oranges in the future.

212 Experts hired directly by the parties to address areas of disagreement between the two members of the expert team.

213 Sachs and Schmidt-Ahrendts (n 22) 145.

214 ibid 146.; See also Nils Schmidt-Ahrendts, 'Expert Teaming -Bridging the Divide between Party-Appointed and Tribunal-Appointed Experts' (2012) 43 Victoria University of Wellington Law Review 653.

215 Bernd Ehle, 'Practical Aspects of Using Expert Evidence in International Arbitration' (2012) II Yearbook on International Arbitration 75, 82.; Zuberbühler and others (n 42) 145.; Parlett (n 65) 447.; Ünüvar (n 26), para. 23.; Webster and Bühler, *Handbook of UNCITRAL Arbitration* (n 12) 424.

216 *Jones* argues: "experts are far more likely to find areas of agreement through confidential discussions with each other, before they have formally declared positions in a written report. The tribunal should encourage these discussions to be held in camera without counsel present." Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 37.

217 *Jones* argues: "experts are far more likely to find areas of agreement through confidential discussions with each other, before they have formally declared positions in a written report. The tribunal should encourage these discussions to be held in camera without counsel present." See ibid.

218 Senogles (n 50) 364.; O'Malley (n 7) 161.; Abdel Wahab (n 5) 195.

219 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 37.; Christoph Grenz, *Der Faktor Zeit Im Schiedsverfahren* (PL Acad Research 2013) 163.

220 Senogles (n 50) 364.; Wilske and Gack (n 9) 95.; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 11.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 37.

221 Abdel Wahab (n 5) 195.; See for problems of instructions from counsel to experts not to agree during the meetings Khodykin and Mulcahy (n 4) 316. and Jones, 'Party Appointed Expert Witnesses in International Arbitration: A Protocol at Last' (n 161) 145.; Hacıbekiroğlu (n 93) 126.; Anne V Schlaepfer and Vanessa A Duvanel, 'Direct and Re-Direct Examination' in Stephen Jagusch, Philippe Pinsolle and Alexander G Leventhal (eds), *The Guide to Advocacy* (Fifth edition, Law Business Research Ltd 2021) 73–74.; For the content of a joint report see CIArb Guidelines for Witness Conferencing in International Arbitration 36, para. 6(b); See *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, Procedural Order No.2, 25 July 2012, para. 2 https://jusmundi.com/en/document/other/en-gold-reserve-inc-v-bolivarian-republic-of-venezuela-procedural-order-no-2-wednesday-25th-july-2012#other_document_17483 accessed 1 September 2022.
S.D. Myers, Inc. v. Government of Canada, Procedural Order No. 17, 26 February 2001, para. 12. https://jusmundi.com/en/document/other/en-s-d-myers-inc-v-government-of-canada-procedural-order-no-17-and-no-18-monday-26th-february-2001#other_document_1293 accessed 19 August 2022.; *Jones* argues that experts should as a first step prepare a joint

Thereafter, experts (within each discipline) should produce individual expert reports on areas of disagreement and not raise unrelated new matters. [222] Experts should reply to these expert reports, limiting their replies to what their opinions would be if counterparty experts' assumptions and methodologies were to be accepted.[223]

Limiting the scope of individual reports to areas of difference improves the tribunal's understanding of complex issues and enhances the efficiency of the use of party-appointed experts.[224]

The IBA Rules, the CIArb Protocol, and the UNCITRAL Notes encourage pre-hearing meetings between party-appointed experts who have submitted reports on similar or related issues.[225] The Case Management Techniques in the ICC Arbitration Rules also indirectly suggest this meeting.[226]

Notably, when multiple quantum experts are engaged by the parties, it would be beneficial for the tribunal to intervene and guide the party-appointed experts to provide views on or use the methods of the other expert and draw conclusions. Arbitral tribunals will make it easier to have a common ground to compare. This method can lead party-appointed experts to disassociate themselves from the parties and their counsel and play a more neutral role. Thus, the need for a tribunal-appointed expert would be diminished, and extensive costs and time losses would be avoided.[227]

Sachs argued that pre-hearing meetings are beneficial because them:

(a) Clarifying technical and factual issues

(b) outline areas of agreement and disagreement,

(c) focusing on relevant points

(d) narrow the differences between expert reports

(e) encourage scientific debate and, consequently, and

(f) render expert evidence more time- and cost-efficient and effective.[228]

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expert report, and not after the initial report, see Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 37.

222 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 37–38.

223 Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 11.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 37–38.

224 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 37.

225 CIArb Protocol, Art. 6; IBA Rules, Art. 5(4); 2016 United Nations and United Nations Commission on International Trade Law, 'UNCITRAL Notes on Organizing Arbitral Proceedings', para. 97–98 .; Hodgson and Stewart (n 66) 459–460.; Khodykin and Mulcahy (n 4) 315.

226 ICC Arbitration Rules Appendix IV, para. (b), para. (e).

227 Blackaby and Wilbraham (n 19) 668.; See *Crystallex International Corporation v Bolivarian Republic of Venezuela,* ICSID Case No ARB(AF)/11/2, Award, 4 April 2016, 31-32, para. 130. https://www.italaw.com/sites/default/files/case-documents/italaw7194.pdf accessed 9 April 2023.

228 Klaus Sachs and Nils Schmidt-Ahrendts, 'Protocol on Expert Teaming: A New Approach to Expert Evidence' (2011) 15 Arbitration Advocacy in Changing Times, ICCA Congress Series 135, 143–144.

When asked practitioners, the majority (54%) found the practise of experts conferring in advance of the main hearing to be useful, compared to only 7% who did not, and 34% who did not exclude the possibility but said that "it depends on the case".[229] Scholars also share the view that hearings "almost always do help".[230]

Meetings between experts in early[231] and before the main evidentiary hearing will help prevent lengthy and exhausting expert testimony phasis in the evidentiary hearings. This will not only shorten hearings, but it will also prevent experts from sticking to their initial opinions. Almost half (%46) of the stakeholders in arbitration believe that counsel should consider early meetings with experts to improve arbitration.[232]

Blackaby and *Wilbraham* note that such meetings will be fruitful when they occur between experts of the same qualification who discuss a narrow scope of specific issues and identify the principal issues dividing the experts. This is expected to distil lengthy complex reports into more digestible ones, thereby also assisting parties and the tribunal in more effectively preparing to question experts at a hearing.[233] However, when the divisions between experts are pivotal to the case, it may be difficult for experts to reach even a partial agreement.[234]

This method was helpful in *Hydro Energy 1 and Hydroxana Sweden v. Spain*, where quantum experts initially provided different opinions. The valuation estimates significantly differentiated between EUR 4 million and EUR 161 million. The experts later filed a joint memorandum containing a joint model and an accompanying memorandum highlighting the remaining areas of disagreement. The tribunal applied this joint model and found a settlement amounting to EUR 31 million.[235]

E. Examination

The first five recommendations above for the use of party-appointed experts relate to the formation of a well-understood opinion that can be evaluated by a tribunal that is not educated or experienced in the field.

229 '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (n 12) 31.

230 de Chazournes and others (n 34) 496.

231 *Blackaby and Wilbraham* argue that it will take time before the tribunal (and even the parties) can determine the necessary issues to be illuminated with experts in complex investment cases, generally until after the first round of substantive submissions. See Blackaby and Wilbraham (n 19) 666.; Schäfer and Wilson (n 56) 64.

232 Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 11.; '2015 International Arbitration Survey: Improvements and Innovations in International Arbitration' (n 208) 30.

233 Parlett (n 65) 448.; Blackaby and Wilbraham (n 19) 666.; See CIArb Protocol Article 3(1).

234 Blackaby and Wilbraham (n 19) 665.

235 *Hydro Energy 1 S.à r.l. and Hydroxana Sweden AB v. Kingdom of Spain*, ICSID Case No. ARB/15/42, Award, 5 August 2020, para. 11-13https://www.italaw.com/sites/default/files/case-documents/italaw170209.pdf accessed 9 April 2023.

After the opinion of experts has been brought before the tribunal, the arbitrators will assess the views of the experts and test whether they are credible and worthy of being accepted as the basis of their decisions.

Like witnesses, party-appointed experts are being examined and their opinions cross-examined.[236]

Examination of the opinion(s) can be compared to the safety/homologation tests of new car models before they are allowed on the streets. These tests will determine whether the implants are functioning and safe. It is possible that experts consciously or mistakenly made incorrect assumptions or arithmetical mistakes with the material results. This can only be revealed through proper oral testimony and examination. [237]

This phase has been deemed so critical that, for instance, according to the CIArb Protocol, any expert who has provided a written opinion must give oral testimony, unless otherwise agreed by the parties. Failure to appear without a valid reason could cause the tribunal to disregard the expert's written opinion.[238]

Many arbitral rules foresee that at the evidentiary hearing, the parties or tribunal may question experts on issues raised in expert reports, submissions, or witness statements.[239]

Therefore, besides examining the tribunal, the counsel can also cross-examine the party-appointed experts.[240] There is strong support for the use of cross-examination in international arbitration to test experts. The vast majority of respondents believed that cross-examination was always or usually an effective form of testing an expert (86%).[241]

An expert who knows that he or she will be subject to cross-examination through an adversarial process by the opposing counsel is a further check on the process.[242] Because the counsel will work hard to find any error in the methodology or application based on the experts' views.

236 Wilske and Gack (n 9) 79.

237 Hodgson and Stewart (n 66) 458.; Tanrıver, *Hukukumuzda Bilirkişilik* (n 5) 32.

238 CIArb Protocol Art. 6.1. (h) and (i).

239 Khodykin and Mulcahy (n 4) 287.; M Serhat Sarısözen, *Medeni Usul Hukukunda Soru Yöneltme ve Çapraz Sorgu* (Yetkin Yayınları 2016) 349.

240 Tanrıver, *Hukukumuzda Bilirkişilik* (n 5) 32.

241 '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (n 12) 26.; Abdel Wahab (n 5) 199.; More than two-thirds (%69) of respondents in the BCLP Survey share the view that any potential bias is cancelled out with cross-examination, see 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 17.; See critics regarding cross-examination of party-appointed experts Proske, *Expert witness conferencing in schiedsverfahren*, 31 and Blackaby and others (n 17), 6.138.

242 Parlett (n 65) 451.; Aygül (n 8) 269.

G. Expert Conferencing

Expert conferencing[243] is a method of examination in which two or more party-appointed experts from opposing parties[244] present their opinions and are questioned by the arbitral tribunal or the Counsel during oral hearings jointly and simultaneously rather than sequentially and separately. [245]

The salient feature of this method is that it allows experts to interact with each other.[246] Expert conferencing has not been a recent phenomenon, and its application can also be found in domestic litigation in some states.[247] However, the search for solutions to cost-efficiency problems in international arbitration has led to its use as a procedural tool.

Expert conferencing can be applied in cases where complex factual and technical issues involve multiple opposing experts. [248] This method can be used where experts know each other, or the experts are seemingly to agree on some points.[249] If the issues where expert opinion is sought are highly controversial or the opposing experts did not opine on the same issue, the method may not be viable.[250]

The expert conferencing method can be potentially helpful if it is constructed and controlled firmly by an arbitral tribunal but is not left solely to experts or the legal counsel.[251] Where multiple areas of expertise are to be exposed, the tribunal may direct separate conferences.[252]

243 See for various terms used by different authors, such as expert witness conferencing, conferencing, hot-tubbing or joint conferencing, for the same concept in Proske, *Expert witness conferencing in Schiedsverfahren*, 34-37.; Also see Wolfgang Peter, 'Witness "Conferencing"' (2002) 18 Arbitration International 47, 48.

244 Whereas the method is used mostly for party-appointed experts, this method is not excluded when there are also tribunal-appointed experts. For details see Proske (n 4) 39.

245 John Townsend, 'Crossing the Hot-Tub – Examining Adverse Expert Witnesses in International Arbitration' in LW Newman and BH Sheppard (eds), *Take the Witness: Cross-examination in International Arbitration* (JURIS 2010) 165.; Wilske and Gack (n 9) 94.; Foster (n 123) 123. ; Karl Pörnbacher, Philipp Duncker and Sebastian Baur, 'Gaspreisanpassungs-Schiedsverfahren – Hintergründe und prozessuale Besonderheiten' (2012) 10 SchiedsVZ | German Arbitration Journal 289, 298.; Weiss and Bürgi Locatelli (n 10) 482.; Proske (n 4) 38.; Michael Hwang, 'Witness Conferencing' in Jamie McKay (ed), *The Legal Media Group Guide to the World's Leading Experts in Commercial Arbitration* (2008) 3.; Michael Hwang and Colin YC Ong, 'Effective Cross-Examination in Asian Arbitrations' in LW Newman and Timothy G Nelson (eds), *Take the Witness: Cross-examination in International Arbitration* (2., JURIS 2018) 358. VV Veeder and et al. (eds), 'Act III: Advocacy with Witness Testimony' (2005) 21 Arbitration International 583, 605–606.

246 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 32.

247 For Australia see: The New South Wales Uniform Civil Procedure Rules 2005, r 31.23. (https://legislation.nsw.gov.au/view/html/inforce/current/sl-2005-0418#sec.31.19), ibid 27–28.; For Canada see: Federal Courts Rules SOR/98-106, Rule 52.2 Code of Conduct for Expert Witnesses (https://laws-lois.justice.gc.ca/eng/regulations/sor-98-106/page-118.html#:~:text=1%20An%20expert%20witness%20named,person%20retaining%20the%20expert%20witness)

248 Bor (n 115) 508.; Hodgson and Stewart (n 66) 459–460.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 32.; Proske (n 4) 52.

249 J Christian Nemeth and Lisa Haidostian, 'The "Hot Tub" Method of Taking Expert Testimony Is Gaining Steam: What You Need to Know' [2014] IBA Arbitration News 91, 92.

250 Bor (n 115) 509.

251 de Chazournes and others (n 34) 496.; 'Annual Arbitration Survey 2021: Expert Evidence in International Arbitration Saving the Party-Appointed Expert' (n 13) 20.; Proske (n 4) 38.; Bor (n 115) 509.

252 CIArb Guidelines for Witness Conferencing in International Arbitration, 34, para. 5(1)(a).

The wording of UNCITRAL Model Law Art. 26 (2)[253] and statutes from various jurisdictions like Türkiye or Germany[254], which base their statutes on the Model Law, also seem to support expert conferencing.

No detailed rules on expert conferencing are found in the arbitration rules.[255] Therefore, the tribunal, advisably in the first procedural order[256], should not only determine and inform the participants of the proceedings how the expert and its opinion should be adduced but also the style and procedure of the examination of the experts, time limits, the stage at which the conferencing should take place and whether and how cross-examination will be performed.[257]

If not properly regulated early in the proceedings[258], the benefits of expert conferencing cannot be expected.[259]

The opposing experts should be placed at the same table in a position that enables them to look into each other's eyes and have a discussion.[260] The tribunal should limit the matters to be addressed by experts and should conduct a focused discussion rather than an occasional debate. Translators should be available if necessary.

To ensure the effectiveness of the method, the arbitral tribunal should also be well prepared, thoroughly read the written expert opinions, determine the specific matters it needs to understand and explain its opinions.[261] This method will not bear fruit if the arbitral tribunal does not carry out its responsibility to proactively manage the case, as previously described.

The arbitral tribunal will be able to ask each expert question. It is suggested that the arbitral tribunal examines both party-appointed experts to report on the same issues at the same hearing simultaneously and try to infer an understanding regarding their objectivity and receive a contrast between the experts (and their opinion), which

253 "Unless otherwise agreed by the parties, if a party so requests or if the arbitral tribunal considers it necessary, the expert shall, after delivery of his written or oral report, participate in a hearing where the parties have the opportunity to put questions to him and to present expert witnesses in order to testify on the points at issue."

254 For the German perspective: Christoph Grenz (n 219) 154–155.; Klaus Sachs and Torsten Lörcher, 'Commentary on the German Arbitration Law (10th Book of the German Code of Civil Procedure), Chapter V: Conduct of the Arbitral Proceeding, § 1049 – Experts Appointed by Arbitral Tribunal' in Patricia Nacimiento, Stefan M Kröll and Karl-Heinz Böckstiegel (eds), *Arbitration in Germany: The Model Law in Practice* (2., 2015) 296.; Burkard Lotz, 'Der Sachvreständige Im Schiedsverfahren' (2011) 9 SchiedsVZ | German Arbitration Journal 203, 209.

255 Proske (n 4) 48.

256 Advisably after consultation and in agreement with the parties. Generally the tribunal is "pushing" the parties for conferencing, for details see ibid.

257 ibid 44.

258 Preferably, in the first case management conference. In case the tribunal is not in a position to foresee whether the conferencing will be necessary, it should at least foreshadow the possibility.

259 Proske (n 4) 50.; Hilmar Raeschke-Kessler, 'Witness Conferencing' in LW Newman and RD Hill (eds), *Leading Arbitrators' Guide to International Arbitration* (Third, Juris Publishing, Incorporated 2014) 699 <https://books.google.co.in/books?id=0bOIAwAAQBAJ>.

260 Blackaby and others (n 4), para. 6.185.; Proske (n 4) 53.; Raeschke-Kessler (n 259) 701.

261 Bor (n 115) 509.; Foster (n 123) 124.; Raeschke-Kessler (n 259) 698.

is more convincing by examining them.[262] After the arbitral tribunal examines the experts, it is imperative to grant the Counsel an opportunity to ask supplementary questions so as to adhere to the right to be heard by the parties.[263] The Counsel should ask additional questions on issues that have not yet been settled or addressed. The arbitral tribunal may also directly leave the floor to the party counsel and ask additional questions where certain points are not clear.

However, counsels must understand that this examination differs from a conventional cross-examination in which they lead the examined expert according to the interests of the party.[264] Counsels should allow experts to interact and an arbitral tribunal should intervene in cases where such interaction is not possible.

Whereas one may think that cross-examination is not necessary when experts already conference, *Proske* demonstrates in her study that in practise, mostly expert conferencing and cross-examination both take place in arbitration, with differences in each regarding their order.[265]

Cross-examination is considered necessary to uncover contradictions between the former opinions, for instance, published works, and the opinion of a party-appointed expert in arbitration proceedings, or to generally test the credibility of a party-appointed expert.[266] Quite occasionally, it is suggested that cross-examination (additional to the expert conferencing) is advisable[267] or necessary to ensure due process.[268]

Equal opportunity should be given to both parties during examination and cross examination.[269]

VI. Evaluation and Conclusion

Due to the capacity of arbitrators, technical, legal and quantum experts are heavily involved in international commercial and investment arbitration. Data and practise

262 Wach and Petsch (n 1) 96.; See Wolfgang Peter, 'Witness "Conferencing"' (2002) 18 Arbitration International 47.; Senogles (n 50) 364.; Blackaby and Wilbraham (n 19) 667.; O'Malley (n 7) 159.; Abdel Wahab (n 5) 194–196.; Caroline Elisabeth Proske, Expert witness conferencing in Schiedsverfahren (Mohr Siebeck 2019) 26 ff...; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 7.

263 Proske (n 4) 45.; Foster (n 123) 123.

264 For details see Proske (n 4) 44.; Hwang (n 245) 3.; For the argument by various authors that share the view that expert conferencing is only supplementary to cross-examination see Blackaby and others (n 4), para. 6.184.; Veeder and et al. (n 245) 609–610.

265 *Proske* stipulates that sometimes expert conferencing is first applied and sometimes later after cross-examination, see Proske (n 4) 47.

266 Martin Hunter, 'Expert Conferencing and New Methods' (2007) 4 Transnational Dispute Management 4, para. 11.; Proske (n 4) 45.; For the argument that credibility should not be subject at the expert conferencing See Raeschke-Kessler (n 259) 704.

267 Hunter (n 266) 4, para. 11.

268 Waincymer (n 19) 968.; For critics to this view see Proske (n 4) 46.

269 For details see Proske (n 4) 42.;

preferences show that party-appointed experts are generally preferred over tribunal-appointed experts. This is understandable, as the parties and their counsel want to have full control of their arguments and evidence, and the tribunal will also not need to find and appoint experts.

Experts clarify disputed issues that impact the outcome of the case, which the arbitrators are not able to do due to a lack of special and technical knowledge, thus supporting tribunals in the decision-making process.[270] The role of experts should always be considered in conjunction with the overriding competence and function of the tribunal.

Expert opinions in international commercial arbitration are crucial to the decision-making process, and it is only logical to classify them as evidence.[271] The arbitral tribunal is not strictly bound by expert opinions and can freely appraise them. Arbitrators may also reach different conclusions.[272]

The prevailing practise, where the parties present conflicting expert opinions on complex issues, leads to inefficient proceedings and the arbitration stakeholders are unsatisfied. One of the main reasons for this is the lack of explicit binding provisions in major international arbitration regulations, such as the UNCITRAL Model Law and arbitration rules. As a result, efforts have been made to overcome these problems through soft law elements such as the IBA Rules, the CIArb Protocol, and recommendations from experienced practitioners.

There is strong empirical evidence that bias and the unregulated use of party-appointed experts are crucial problems in international commercial and investment arbitration. This is why the focus is to prevent potential bias while the expert opinion is formed, having a well-structured and transparent process for party-appointed experts, which, in cooperation, simply guides the arbitral tribunal without the pressure of pleasing the parties.

In order to achieve these objectives, the arbitral tribunal should first establish rules for party-appointed experts in the first procedural order. The arbitral tribunal should set the issues and disciplines for which expert opinion is required and may expressly stipulate that no expert opinion is required for other matters and that they would not be called for testimony or that their costs would not be considered under arbitration costs. The arbitral tribunal shall address the qualifications of the experts sought and may also inform the parties that it will appoint experts if required.

270 Wach and Petsch (n 1) 95.; O'Malley (n 7) 171.; Abdel Wahab (n 5) 182.; White (n 43) 165.; Gideon E Kamya-Lukoda, 'Role of Expert Witnesses in Construction Arbitration: Delay and Disruption and Quantum Issues' in Renato Nazzini and Anthony J Morgan (eds), *Transnational construction arbitration: key themes in the resolution of construction disputes* / (Informa Law from Routledge 2018) 79.; Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 1.; Proske (n 4) 3.; Aygül (n 8) 270.

271 Proske (n 4) 26.

272 Zuberbühler and others (n 42) 170.; ICC Case No. 14079, Procedural Order May 2007, in ICC International Court of Arbitration Bulletin Vol. 25/Supplement (2014): 11; Oetiker (n 10) 313.

The arbitral tribunal should set out that, especially in an investment arbitration case, the expert should not have acted as an arbitrator in another international investment dispute involving (a) the same measures, (b) the same or related parties, or (c) the same provisions of the same treaty.

Then, the arbitral tribunal shall forward each expert a common set of questions and the same set of data and evidence to rely on and, if possible, ask the experts within each discipline to meet before the main hearing and produce a joint expert report explicitly mentioning areas of agreement and disagreement, accompanied by an individual report on the disagreed matters.[273]

It is generally useful to engage in a discussion with the counterparty's expert to identify the respective objectives and methods. In that respect, the preparation of a joint report would be very useful, and pre-hearing meetings would be helpful.[274] These rules should be determined in a procedural order, accompanied by a procedural timetable and should always be reinforced actively by the tribunal.

The tribunal is authorised to appoint an expert on its own. However, a single tribunal-appointed expert without any party-appointed expert involvement comes with the risk that arbitrators accept the conclusions of that expert without further analysis.[275]

To try to find a middle ground, the *Sachs Protocol* envisions a solution to the challenges the expert evidence is facing by merging the benefits of both tribunal and party-appointed experts. Nevertheless, there are concerns regarding experts' access to relevant documents and information, which would be readily available to party-appointed experts working closely with parties and their counsel. Despite its potential merits, the *Sachs Protocol* has not been widely adopted in international arbitration.[276] Although the *Sachs Protocol* addresses the credibility of experts, it is also criticised for being "heavily tilted to justifying tribunal-appointed experts".[277]

Conferencing experts is often effective because experts only discuss their professional views before the tribunal and the Counsel. Over time, with its successful applications, expert conferencing has gained some acceptance in international arbitration.[278] This method attempts to combat the shortcomings of traditional hearing,

273 Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 11.

274 de Chazournes and others (n 34) 496.

275 Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 10–11.

276 Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 22.; de Chazournes and others (n 34) 493.

277 Hodgson and Stewart (n 66) 461.

278 Raeschke-Kessler (n 259) 689.; Townsend (n 245) 165.; Webster and Bühler, *Handbook of UNCITRAL Arbitration* (n 12) 446.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 32.; Some state courts also adopted this method for experts, see Federal Court of Australia, Expert Evidence Practice Note 25 October 2016, https://www.fedcourt.gov.au/law-and-practice/practice-documents/practice-notes/gpn-expt; Aygül (n 8) 285.; Akıncı (n 155) 79.

where long presentations and examinations occur sequentially and sometimes even on different days, resulting in the need for more efficient.[279]

This method for obtaining evidence is especially effective in complex arbitrations with difficult factual and technical issues where the parties rely on evidence from multiple experts. [280] In such circumstances, the conventional approach of examining experts from each side in a linear fashion does not always lead to a clear understanding of both the arbitral tribunal and the Counsel.[281] This is particularly the case when multiple and opposing expert statements are heard in different hearings over a long period.

However, through expert conferencing, experts can concurrently engage with opposing views directly and engage in a deeper examination of contentious issues.[282] The conferencing technique is potentially helpful when it is controlled and managed firmly by the tribunal.[283] Another advantage of conferencing experts over the traditional examination method is that it allows for an expert's opinion to be fully explored and tested by another expert. Moreover, conferencing experts can potentially shorten hearing times. Conferencing experts may not be suitable when experts have not been instructed to opine on the same issues.[284] However, even when experts present their opinions on different subject matters if their opinions are strictly interconnected, this method could be viable.[285] The spontaneity of the process can lead experts to express sincere opinions and forget any answer that they might have been expected to give to specific questions. This further engages the experts in vigorous conversation, where each expert explains to the arbitral tribunal why he/she disagrees with the views of the other, thereby facilitating the arbitral tribunal's understanding.[286] Sitting at the same table with a colleague can also help rephrase incorrect or exaggerated previous statements and consequently reduce the number of issues on which experts disagree.[287] If the tribunal is also well prepared and controls the process firmly, then the conferencing would be a dynamic and useful process where expertise issues can be heard and tested quickly.[288]

279 Wilske and Gack (n 9) 95.

280 Bor (n 115) 508.; Hodgson and Stewart (n 66) 459–460.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 32.

281 David W Brown, 'Oral Evidence and Experts in Arbitration' (2004) 2 Kluwer Law International & ICC 77, 85.; Proske (n 4) 31.; Christoph Grenz (n 219) 73–75.

282 Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 7.; Knoblach (n 5) 280.; Townsend (n 245) 165.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 32.

283 de Chazournes and others (n 34) 496.

284 Bor (n 115) 509.; Abdel Wahab (n 5) 205.; Jones, 'Redefining the Role and Value of Expert Evidence' (n 9) 33.

285 Proske (n 4) 38.

286 Abdel Wahab (n 5) 205–206.

287 Jones, 'Ineffective Use of Expert Evidence in Construction Arbitration' (n 12) 8.; '2012 International Arbitration Survey: Present and Preferred Practices in the Arbitral Process' (n 12) 28.; Wilske and Gack (n 9) 94.; Proske (n 4) 38.

288 Senogles (n 50) 364.

In conclusion, to address the problems arising from the use of party-appointed experts in international commercial and investment arbitration, the aforementioned methods could be helpful, depending on the circumstances. However, the tribunal's active involvement and early determination of the protocol on the use of party-appointed experts in every detail are indispensable. Designing the examination phase in a conferencing style will enable not only the prevention or disclosure of bias but also accelerate the process for the arbitral tribunal to understand the expertise required for technical, legal or quantum issues.

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