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Let's Get Together: Quo Vadis International Construction Arbitration

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INTRODUCTION

*There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries.
On such a full sea are we now afloat,
And we must take the current when it serves
Or lose our ventures.*¹

These words spoken by Brutus in Shakespeare's *Julius Caesar* remind us of the fleeting and variable nature of time, as well as the opportunities it presents. It is trite to observe that in construction time is everything, operating as the central commercial consideration. However, so too may this be said of dispute resolution processes. Much has been written in recent times about the procedural tools available to arbitrators in managing complex infrastructure disputes. Less has been said however, about *when* the right time is to deploy those tools. For example, should joint expert reports precede or succeed individual expert reports? Should document production requests and Redfern Schedules occur only after exchanges of case? When should Case Management Conferences be held?

This paper discusses these and other questions by considering the tools themselves as well as the moment at which they should be used. This discussion seeks to build on experiences— both positive and negative – in attempting to manage what can often be fairly described as the unmanageable: complex, fact-intensive, cross-border infrastructure disputes.

The introduction to this paper seeks to explain the importance of effective dispute resolution by considering its inverse: the consequences of poor dispute resolution. First an array of mechanisms for dispute resolution in the construction industry are considered, before, turning to the challenges which are unique to construction disputes.

To resolve the complex issues raised by dispute resolution in construction, six aspects of the dispute resolution process are considered: case management; document production; expert evidence; bespoke summary procedures; costs; and virtual hearings. Through discussion and analysis of these key aspects the paper seeks to demonstrate how to establish successful proceedings from inception to completion.

Consequences of poor dispute resolution

¹ *Julius Caesar*, Act 4 Scene 3 Page 11.

To understand the importance of economic and fair dispute resolution, it is first useful to consider the implications of poor dispute resolution processes. The implications are threefold.

First, in the absence of quality dispute resolution processes, the resolution of the dispute will be ambiguous. This may provide a basis for further disputes or at least leave the parties without a clear understanding of their rights and obligations.

Secondly, where disputes are not resolved efficiently, they may have a lasting impact on the relationships between the parties. There are many long-standing relationships in the construction industry between owners, consultants, project managers, suppliers, contractors and subcontractors that facilitate the development and delivery of exceptionally complex endeavours. The value of such a relationship lost, where a dispute has not been resolved in a fair and efficient manner, may be worth much more than the dispute in question. Further repercussions may result in the form of reputational damage from drawn out and hostile proceedings.

Thirdly, there may be impacts on other aspects of the project. This may be as a direct consequence of the dispute in question, i.e. a structure is not completed on time, limiting the ability for the subcontractor to meet its obligations (and so forth). Such consequences are allayed to some degree by knock-for-knock liability regimes. However, such regimes suffer from obvious limitations, where the liability is uncertain and likely to be substantial. There are also indirect consequences. The loss of trust associated with the failure of one component of a construction project may affect the ability of the parties to work collaboratively to complete other aspects of the project.

Dispute resolution options in construction

There are numerous mechanisms that are frequently used for issue resolution in the construction industry. Generally, these mechanisms fall into three categories. The first, and most obvious of these, is by bilateral, or perhaps multilateral, negotiation. Creating opportunities, and allocating time, for negotiation can often lead to a cost-effective resolution of a problem. However, a second category may be seen where the assistance of a third party is involved in the resolution of the dispute. Under the FIDIC standard form contracts, this may be through the determination of an Engineer alone (an Employer's agent managing the construction project) or an Engineer and a Dispute Adjudication Board ('DAB'), which is a private independent panel composed of one or three experts, who, under certain conditions, render a decision binding on the parties. Finally, there are options which fall under the category of binding determination, of which arbitration and court proceedings are examples.

Different mechanisms will of course be appropriate for different projects and disputes. Dispute mechanisms provided in the FIDIC contracts are tiered, involving interparty negotiation, initial dispute

determination by the Engineer, reference of disputes thereafter to a DAB, and finally the arbitration of disputes unresolved by the DAB. This allows costly and more litigious mechanisms to be avoided where the dispute is resolved in the early stages of the process and by the project participants themselves. However, this system, and tiered dispute resolution clauses more generally, may elongate a dispute that requires a binding determination by a third party through unnecessary processes, delaying resolution of the issues and adding costs for the parties.

The FIDIC Suite of Contracts provides the ICC as the default arbitral institution. An ICC arbitration will usually be composed of three arbitrators comprising the tribunal – one nominated by each party and a president chosen in consultation with parties by the nominated arbitrators. This is a common arrangement under many institutional arbitration rules. The selection of arbitration for the resolution of construction disputes together with the problems associated with this were explored by the 2019 Queen Mary University of London Arbitration Survey, which dealt with the topic of “*International Construction Disputes*” (‘**QMUL Survey 2019**’).² The findings of this Survey are mentioned throughout this paper as it has captured some of the key issues that are anticipated to face the industry over the next few years.

Unique aspects of dispute resolution in the construction industry

Many projects continue to be commissioned on the basis of a lump sum contract. Experience has tended to show the existence of an unfortunate commercial reality which often occurs in the case of lump sum contracts: that contractors “underbid” at the tendering stage due to that tendering process prioritising a lower project price without necessarily paying due attention to the feasibility of project plan associated with that price. Those contractors, in turn, seek to recover overruns in cost, and their margins by pursuing claims on a variety of bases.

Another aspect of the contracting process which bears consideration is risk allocation. An efficient contracting arrangement will usually allocate risk to those best placed to manage it. However, often the risk allocation is representative of the relative bargaining power of the participants rather than their ability to mitigate against a particular risk.

The QMUL Survey 2019 shows that the two factors that most differentiate international construction arbitration from international arbitration generally are: (a) factual/technical complexity (chosen by 73%

² ‘2019 International Arbitration Survey: Driving Efficiency in International Construction Disputes’ (2019) Pinsent Masons and Queen Mary University of London Research Survey, 9 (download available at: <https://www.pinsentmasons.com/thinking/special-reports/international-arbitration-survey>) (‘QMUL Survey 2019’).

of respondents); and (b) the large amounts of evidence involved (chosen by 66% of respondents).³ Additionally, there are several criticisms of arbitration raised by users in the QMUL Survey 2019, including inefficiency, party tactics, and “due-process paranoia”. Indeed, the QMUL survey shows that around 35% of respondents to the survey chose not to pursue an international construction arbitration because of concerns about its efficiency at least half the time.⁴

This paper will discuss several methods of proactive case management available to reduce delay and cost, and deal with matters fairly and efficiently, focusing on the following areas:

- first, the establishment of steps which provide certainty for the parties but allow the requisite degree of flexibility;
- second, the management, in an efficient and cost-effective manner, of a dispute in which there may be an evidentiary overload;
- third, the deployment of expert witnesses that are often called in these matters;
- fourth, the management of a situation where there might be hundreds (or thousands) of individual claims that require determination;
- fifth, the utilisation of costs as a mechanism to ensure efficiency; and
- sixth, the use of virtual hearings and the way the pressures of the COVID-19 pandemic are changing case management styles.

CASE MANAGEMENT

Procedural Order No. 1

The relevant starting point in this analysis is the first procedural opportunity presented following the formation of the tribunal. That is the first Case Management Conference (‘CMC’), which presents the occasion to reach a consensus as to how the arbitration should be conducted. Procedural Order No. 1 (‘PO1’), as a product of that meeting, should comprise a broad procedural framework for the dispute. It is envisioned that the procedure will develop concurrently with the case.⁵ It should be kept in mind, however, that the relative advantages and disadvantages of various procedural issues become more pronounced as proceedings continue. This can complicate efforts to obtain agreement. Therefore, the inception of a dispute presents an optimal moment for considering the range of procedural options available to the tribunal. The certainty of the framework established in PO1 can chart the course for the development and presentation of the parties’ cases.

³ QMUL Survey 2019, 9 and 10.

⁴ QMUL Survey 2019, 22.

⁵ See, The Powers and Duties of an Arbitrator Liber Amicorum Pierre A. Karrer, Chapter 37, Janet Walker and Doug Jones, ‘Procedural Order No. 1: From Swiss Watch to Arbitrators’ Toolkit’.

The importance of the first CMC and the resulting Procedural Order has been widely recognised, including by the leading arbitral institutions. By way of example, the 2017 version of the ICC Rules provide that:⁶

When drawing up the Terms of Reference or as soon as possible thereafter, the arbitral tribunal shall convene a case management conference to consult the parties on procedural measures that may be adopted pursuant to Article 22(2). Such measures may include one or more of the case management techniques described in Appendix IV.

The central goal which should be achieved out of these earlier discussions is the creation of a timeline for the arbitration. While such timelines often require flexibility, too much flexibility can lead to protracted proceedings, a costly approach for the parties. These timelines should create a degree of certainty as to the length of proceedings for the parties which may operate to their benefit in other ways.

A critical task at the outset is to clearly enunciate the role of the tribunal and its expectations of the parties. As has been mentioned, part of this turns on the establishment of a procedural timetable, but additional factors may include a date for the evidentiary hearing, a standardised method of communication and a format for documents to be exchanged. Separately, the first CMC presents an opportunity for the tribunal to establish its expectations and for the parties to agree on important procedural issues. After all, a procedural timeline will be ineffective without the parties' willingness to observe agreed deadlines.

The tribunal plays a key role in ensuring that parties conduct themselves in a manner consistent with the efficient use of time and resources. By agreement a provision may be included in PO1 creating an obligation to this effect. Further, it may be agreed that any unreasonable behaviour by a party can be considered by the tribunal when using its discretion to allocate costs. Typically, the provision will further explain that unreasonable behaviour could include excessive document requests, excessive legal argument or, cross-examination, as well as dilatory tactics, exaggerated claims, failure to comply with procedural orders, unjustified interim applications and a failure to meet the procedural timetable. A consequence of these unreasonable behaviours may include adverse costs orders. These considerations will be returned to under the section on Costs below.

Ongoing matters for consideration

However, while the inception of proceedings is undoubtedly a critical moment in the procedure of an arbitration, there are a number of considerations that are best left for resolution at a later date. The

⁶ International Chamber of Commerce, 'Arbitration Rules' (1 March 2017) Article 24(1) ('ICC Rules').

challenges faced as the arbitration progresses have previously been understood as one of fine-tuning the contents of the first procedural order, the central procedural authority, and making decisions on certain procedural matters when more is known on those issues as the case progresses. It is increasingly recognised that features of the arbitration, and the real issues in dispute, inevitably emerges at a later stage than when PO1 has typically been drafted and issued.

One important area where this is apparent is the organisation of the main hearing, which involves variables beyond the contemplation of the participants at the inception of proceedings. This approach, of adopting a pre-hearing case management conference, is a prescribed approach under the ICC Rules.⁷ Thus, it is common practice for pre-hearing CMCs to be held a month or so before the evidentiary hearing. Most PO1s provide for the date for a pre-hearing CMC. The short timeframe makes it difficult to implement effective case management of critical issues, resulting in an inefficient hearing.

Examples of issues, which if left too late, are dealt with unsatisfactorily include: the electronic and hard copy format of hearing bundles; the preparation of agreed chronologies and *dramatis personae*; decisions on which witnesses need not to be called for cross examination; the manner of interpretation and the identity of the interpreters; and the real issues in dispute.

These are just some issues which should be addressed at the optimal moment. There are many time critical components of an arbitration. 'Time critical' refers to the necessity of addressing issues as soon as they have crystallised, rather than being left to a time when their resolution would cause delay. Four further areas that benefit from ongoing, time critical case management are: document production; management of expert testimony; bespoke summary procedures; and management of costs. Each of these areas will be considered in turn.

DOCUMENT PRODUCTION

Document production has been the subject of much recent discussion, primarily due to the vast quantity of material that is produced in construction disputes which increases both the cost and length of arbitral proceedings. This section will focus on two topics in document production: first, regarding competing approaches to document production; and second, in relation to where inefficiencies in this process arise.

Existing practice

A common approach to document production is to conduct proceedings under the IBA Rules on the Taking of Evidence in International Arbitration 1999, as revised in 2010 ('**IBA Rules**'). The IBA Rules

⁷ ICC Rules, Appendix IV (g).

attempt to strike a balance between the common law and civil law traditions. They affirm the tribunal's broad discretion to decide procedural matters but go some way in providing guidance on the taking of evidence. The IBA Rules provide mechanisms for the presentation of documents, the handling of lay and expert evidence, as well as the conduct of evidentiary hearings.⁸ The 2010 revisions have modernised the rules and enhanced the efficiency of procedure, particularly making changes which account for advances in technology.

The IBA Rules provide that a party may make a request for 'narrow and specific categories' of documents from the opposing party.⁹ The party requesting the production of the document must specify the relevance and materiality of the evidence which the party seeks to produce. Further, a request may be objected to on the grounds of its lack of relevance; confidentiality or privilege; or that production would cause an unreasonable burden.¹⁰ A common way of setting out these requests and objections is by way of a "Redfern Schedule"; with the aim to concisely summarise document requests to narrow the disputed issues between the parties as to what should be produced and why.

Recent developments from the civil law

Given that disputes are increasingly being decided between civil law parties, there has been enhanced demand for a soft law instrument which more closely resemble the civil law.¹¹ It should be noted that over 60% of the world's population live in a civil law jurisdiction.¹²

A recent development in this space has been the advent of the Prague Rules, which provide a procedural system with a range of tools derived from the inquisitorial system adopted in the civil law. The Prague Rules were developed by a working group of civil law lawyers, with the aim to model these Rules on the domestic procedures in their respective countries.¹³ Where document production is necessary, the Prague Rules provide that it should be addressed at the first CMC. In principle, CMCs offer a real opportunity to resolve issues much more expeditiously, and at an early stage, preventing the issue from escalating.

Technological solutions

Of course, legal solutions are not the sole means currently being proposed to remedy the onerous and inefficient document production process. Increasingly, there are calls for the application of technology

⁸ Prague Rules, Note from the Working Group, 2.

⁹ International Bar Association, 'Rules on the Taking of Evidence in International Arbitration' (2010) art 3(3).

¹⁰ International Bar Association, 'Rules on the Taking of Evidence in International Arbitration' (2010) art 9(2).

¹¹ Prague Rules, Note from the Working Group, 2.

¹² University of Ottawa, *Percentage of the World Population, Civil Law and Common Law Systems*, available at: <http://www.juriglobe.ca/eng/syst-demo/tableau-dcivil-claw.php>

¹³ Prague Rules, Note from the Working Group, 2.

to be increased. An obvious example of the way technology has already made an impact on the efficiency of document production is through the digitalisation of these processes, where documents are disclosed in electronic format, document management systems and search tools can reduce the number of documents for review. Technology Assisted Review provides techniques that allow parties to filter and sort documents by date, title, name or file type. These technologies are said to reduce the time and cost of the process, and, rather controversially, are said to be more accurate than most humans.

To that end, advances in technology relating to Artificial Intelligence ('AI') has led many parties and practitioners to question what opportunities may be created to drive innovation and efficiency in arbitration. The QMUL Survey 2019 asked respondents about the role they saw automation playing in arbitration. Able to select one or more responses, 40% of respondents identified document production and review as an area which may benefit from greater automation.¹⁴ The focus on this aspect of the arbitration is no doubt in recognition to the lengthy and costly role it plays in arbitral proceedings.

However, AI is distinct from other technologies, such as virtual hearings discussed below, in its movement into the 'lawyer's role' in the provision of legal services. It should be kept in mind that the duty to the client is owed by the practitioner and not the AI. AI must not operate as a black box. Any technologies employed must be understood to some degree by the lawyers employing that technology, and there must be effective mechanisms to review the processes undertaken by the technology as well as the results produced. These issues are yet to be resolved.

Best practice directions on document production

It is undoubtedly true that the adoption of a legal framework that is familiar to the parties will minimise inefficiency. From anecdotal experience, when deciding disputes this has proved effective but must always be driven by the parties and facts of the dispute in question. Separately, there is no doubt that AI can play a role in document production to reduce inefficiencies. Yet, its role remains yet to be made clear and will turn on cost effectiveness and reliability relative to other solutions.

While both of these discussions are important, they are not the driving force behind inefficiency in document production. Instead, the crucial importance of timing is made clear. The main issue with document production is that the differences between the parties disclosed by the exchanges of case to which these documents relate have not yet been ventilated before the tribunal, in most proceedings. This is true under the Redfern Schedule approach in the IBA Rules and equally of the CMCs contemplated by the Prague Rules. Allowing the issues to crystallise before document production requests are decided by the tribunal has proven to be key to resolving the requests in an efficient manner,

¹⁴ QMUL Survey 2019, 42.

both in terms of cost, and time, involved. Often the best way to reach these decisions, is by holding short, focused hearings by video or teleconference to identify the real issues in dispute.

EXPERT EVIDENCE

The use of party appointed expert witnesses is common in international construction arbitration; lamentably, the efficient use of these experts is far less common.¹⁵

This section will first outline the challenges of party-appointed experts, which have been felt both in litigation and arbitration. It will then mention some ways in which arbitral soft law instruments have attempted to tackle these issues, albeit without full success. A novel best practice procedure regarding the taking of expert evidence is therefore proposed, which aims to increase the efficiency and utility of party-appointed expert evidence.

One of the most significant challenges regarding the use of party-appointed experts is their tendency to act as “hired-guns”, tailoring their evidence to support the interests of the party by whom they were appointed. This situation is exacerbated when parties and tribunals operate on an implicit understanding that this is indeed their role. Overcoming this challenge requires party-appointed experts to recognise that their duty is to assist the tribunal, not the party by whom they were appointed.

The Woolf Report

These problems are neither new nor unique to arbitration. In 1996, Lord Woolf, who was appointed to review the procedure and rules of civil courts in England and Wales, produced the *Access to Justice* report (the ‘Woolf Report’). The Woolf Report expressed concerns regarding the excessive costs and delay involved in litigation, of which a significant contributing factor was the uncontrolled proliferation of expert evidence.¹⁶ Indeed, the Report reiterated concerns of partiality within party appointed experts, whose biased evidence would do nothing to assist the tribunal or its appointing party. Lord Woolf also identified inefficiency and wasted cost in circumstances where parties call multiple experts unnecessarily, in the hopes of strengthening a weak case.

In response to these issues, the Report proposed several measures that aimed to reduce the tendency of bias within experts by emphasising the overriding duty of the expert to assist the court. The proposed solutions dealt primarily with encouraging active case management by the bench, in particular when tendering expert evidence.

¹⁵ QMUL Survey 2019, 24.

¹⁶ Right Hon. Lord Woolf MR, *Access to Justice: Final Report to the Lord Chancellor of the Civil Justice System in England and Wales* (1996).

The publication of the Report catalysed extensive changes to the civil justice system in the UK. The influence of the Report, however, extends far beyond the courts of England and Wales. In Australia, for example, the procedure rules and practice notes of the Federal Court and State Supreme Courts were amended in light of the proposals made. Further, amendments to arbitral soft law instruments were also born out of this context, and it is to those instruments that this article will now turn.

Existing practice

This section will consider two sets of rules significant to the arbitral context: the IBA Rules and the CIArb Protocol for the Use of Party-Appointed Expert Witnesses in International Arbitration (the ‘CIArb Protocol’).

The IBA Rules were amended in 2010 to include a number of new requirements of party-appointed expert witnesses. The Rules now require experts to provide a description of the instructions that they have received from the parties¹⁷ and include a statement of independence from their parties, their legal advisors and the arbitral tribunal.¹⁸

The CIArb Protocol adopted similar reforms, emphasising the importance of independence of experts. It sets out the ethical principles of independence, duty and opinion which should guide the expert’s evidence¹⁹ and outlines requirements of the expert to declare that the evidence has not been influenced by “the pressures of the dispute resolution process or by any party to the arbitration”.²⁰

Both sets of rules also provide minor guidance regarding the procedure of tendering expert evidence.²¹ The primary objective of this is the efficiency and economy in the evidence procedure while maintaining the parties’ and tribunal’s ability to formulate a bespoke procedure suitable for the arbitration at hand.

It is argued that the soft law requirements do little to reduce partiality of experts in actuality, rather only maintaining an *appearance* of objectivity.²² Mark Kantor contends that experts, even acting in

¹⁷ International Bar Association, ‘Rules on the Taking of Evidence in International Arbitration’ (2010) art 5(2)(b).

¹⁸ International Bar Association, ‘Rules on the Taking of Evidence in International Arbitration’ (2010) art 5(2)(c).

¹⁹ Chartered Institute of Arbitrators, ‘Protocol for the Use of Party-Appointed Expert Witnesses in International Arbitration’ (September 2007) art 4(1).

²⁰ *Ibid*, Article 8.1(b).

²¹ See International Bar Association, ‘Rules on the Taking of Evidence in International Arbitration’ (2010) art 5(2)(c); Chartered Institute of Arbitrators, ‘Protocol for the Use of Party-Appointed Expert Witnesses in International Arbitration’ (September 2007) Articles 6-7.

²² Mark Kantor, ‘A Code of Conduct for Party-Appointed Experts in International Arbitration’ (2013) 26(3) *Arbitration International* 323, 333.

good faith, can never be entirely free from pressures of their appointing party and that “no protocol or code can regulate the ability of a party to hire an expert who is just a good actor or actress”.²³ There is therefore a need to go beyond what is offered by rules and protocols to address this issue.

Best practice directions on expert evidence

In response to this need, a set of best practice directions are proposed, to ensure the utility of expert evidence in practice that goes beyond a statement of independence. These are six steps which can be adopted by tribunals to limit, to the greatest extent possible, the *effect* of an expert’s impartiality or predilection, if it exists, on his or her evidence and maximise the efficiency of the evidentiary hearing. Accordingly, these steps should be deployed prior to the hearing and discussed with the parties at the earliest practical stage of the proceedings. The timeliness of the process is key to its efficacy.²⁴

The steps seek to limit the differences between the experts, and assist in identifying the key issues between them. That reduces the amount and scope of evidence at the hearing to that which is really necessary. It is of course important to acknowledge that the differences between each expert’s opinion should never be eliminated in its entirety. Genuinely held differences are the benefit of having two, rather than one, expert. However, the streamlining of the topics requiring expert evidence ensures that only the relevant issues are ventilated at the hearing and that each expert’s report squarely engages with the issues raised by the other. This increases efficiency and reduces cost.

The following process is proposed, each step of which will be considered in turn:

1. first, identify disciplines in need of expert evidence and experts proposed;
2. second, establish within each discipline a common list of questions;
3. third, defer the production of all expert reports until all factual evidence (documentary and witness) is available;
4. fourth, require the experts within each discipline to produce a joint expert report identifying areas of agreement and disagreement;
5. fifth, require the experts within each discipline to produce individual expert reports on areas on disagreement only; and
6. sixth, require the experts to produce "reply" expert reports conducted on a "figures-as-figures" basis.

Of course, it will go without saying that, above all, the effectiveness of the proposed directions depends

²³ Mark Kantor, ‘A Code of Conduct for Party-Appointed Experts in International Arbitration’ (2013) 26(3) *Arbitration International* 323, 335.

²⁴ For further discussion see forthcoming publication Doug Jones ‘Party Appointed Experts in International Arbitration—Asset or Liability?’ (2020) 86(1) *CI Arb Journal*.

on the continuing case management of the tribunal, as well as an honest acknowledgement of the difficulties of adducing expert evidence and open communication with the parties on those issues.

Turning to the first step, it is necessary to identify the disciplines for which expert evidence is required. It is important that this is done in the early stages of the arbitration as it ensures that, from the outset, the evidence is only tendered on the relevant subject areas. It is not uncommon that parties discover, when determining the relevant issues, that the scope or value of their dispute on those issues do not justify the cost and effort to produce expert evidence. Objections to particular experts or the need for expert evidence on a particular topic can also arise. Identifying these issues early on will ensure that the objections are dealt with in good time.

The next step of the process, once the disciplines have been selected and the experts have been appointed, is that the tribunal must establish a common list of questions to be answered by the appointed experts. Notably, this step, and the others, go towards the focussing and streamlining of the expert evidence to only the most contentious issues. At this stage, the tribunal should maintain active oversight over the parties and provide assistance, for example where parties are unable to agree on the questions to be asked.

It is then essential that all the factual evidence, both documentary and witness, is available, before the expert witnesses provide their reports. This is because the experts providing opinions must do so on the basis of the same facts and no one expert should have different information to the others. Accordingly, the experts' analysis should also be prepared using a common database to avoid variables arising out of the amount or scope of factual evidence itself affecting the analysis. Where the facts are mutually understood (even if disputed), differences in the expert reports can be attributed to the expert's genuine analysis, rather than a difference in factual material available to them.

After this, the experts should produce joint reports identifying areas of agreement and disagreement, with reasons for disagreements. Individual expert reports solely on the areas of disagreement should be provided after the joint reports. One of the advantages of having experts produce joint reports before individual reports is that it gives an expert an opportunity to discuss their preliminary positions with their 'opposing' expert, without prejudice and without having committed to a particular position in an individual report. If there is to be any common ground between the experts, it will most likely only be reached before they have each declared a position on the issue. For this process to operate effectively, it is imperative that the experts meet in person without the presence of the parties or the tribunal.

Experts may come to different conclusions and have different opinions on any given topic. Where these differences are attributable to differing factual assumptions adopted by each expert, the tribunal

must ensure that each expert conducts an analysis of their counter-expert's methodology and analysis. That is, the experts should consider what their outcome would be if they adopted all of the same factual assumptions as their counter-expert, and if the outcome were to be different, what the differences would be.

This approach is necessary because the value of the experts' evidence is often contingent on the tribunal's findings on certain issues. The approach therefore prevents a situation where, if the members of the tribunal decide a particular factual issue, or principle, one way, they are left with the assistance of only the expert who relied on that assumption. The process proposed here ensures that experts from both sides consider all the possible factual assumptions and methodologies that may be adopted by the tribunal. As a result, their final expert reports will be of maximum utility regardless of the position eventually taken by the tribunal.

BESPOKE SUMMARY PROCEDURES

There may be circumstances in which infrastructure disputes require out of the ordinary procedures to maintain the cost effectiveness, indeed the proportionate utility of the process. There are many instances in which the cost of deciding a claim may far exceed the amount in dispute. Large infrastructure projects, which are completed over the period of several years, may give rise to hundreds of such claims, comprised of variation disputes and allegations of defects. While the value of a dispute is low, this does not necessarily mean that its resolution will be simple. Indeed, a low value claim may require technical expertise and quantum assessments, or raise complex legal issues. Presenting and defending such claims may require written submissions, witness evidence, expert testimony, and cross-examination time, the cost of which may well exceed even the claimed amount.

Managing the unmanageable

What is then needed is a bespoke summary procedure designed to keep the cost of resolution of such claims in proportion to the amount claimed. In such circumstances it is incumbent on the tribunal to take initiative and establish with the parties and their lawyers a process to address the situation. An appropriate forum for this may be a CMC at an interim stage of the proceedings, with all involved including experts.²⁵ This process is important in any event for getting to the real issues of a dispute and minimising costs and time in the proceedings.²⁶ It is especially important to identify whether the cost of determining particular issues is likely to exceed their value.

²⁵ Doug Jones, 'Innovating Evidence Procedure in Construction Arbitration' [2019] *Journal of the Canadian College of Construction Lawyers* 167.

²⁶ See ICC Rules Appendix IV (b), which proscribes the identification of issues that can be resolved by agreement particularly in instances of low value claims of low complexity.

Three examples of such a procedure that has been effectively implemented will be outlined. The first, and perhaps most obvious procedure is to restrict some claims to only be decided on the basis of written submissions.²⁷ In one case, the claims were segregated into a high-value group of claims, and a low-value group of claims. Low-value claims were to be decided using papers only, without witness evidence, and on the basis of a strictly limited schedule of expert evidence.²⁸

(a) Proportional recovery

There may be instances in which even this approach is not economical, particularly where there are a high number of low value claims. In these circumstances different approach may be required from the tribunal. One approach, which has proven successful has been the use of proportional recovery. This methodology relies firstly on the separating of claims into two categories: those of low value ('Excluded Claims') and those of high value ('Main Claims'). The amount distinguishing these categories can be a question first left to the parties. For the claims classed in the low value category, the parties may not rely on any lay or expert evidence in support of their claim. In its Award, the tribunal will make a determination in relation to each of the Main Claims as to how much of the disputed amount the Claimant is entitled to recover, resulting in an overall total amount recoverable for the Main Claim. Following this, the tribunal will apply the same percentage recovered in respect of the Main Claims to the amount in dispute for the lower value Excluded Claims. For example, if Claimant recovers 50% of the disputed amount in respect of the Main Claims, then it will similarly recover 50% of the disputed value of the Excluded Claims.

However, for this procedure to be implemented successfully it cannot be foreshadowed until after all claims have been crystallised lest with knowledge that this proportional value system will be used, parties may be incentivised to make a high number of unmeritorious claims.

This emphasises the importance for arbitrators to have a range of tools in their toolkit and to use the method which best fits the dispute at hand. Additionally, as has already been discussed, the bringing of unmeritorious claims should be dealt with at an early stage through proactive case management (such as through early CMCs and consultation with the experts) and there should of course be cost consequences where these unmeritorious claims have been brought (see below the section on Costs).

(b) Categorising claims

Another approach is to group the claims into categories. These categories can be formed on common legal and factual issues. The Claimant is then tasked with selecting a number of claims which it contends

²⁷ Similarly, this is a proscribed best practice approach under ICC Rules Appendix IV (c).

²⁸ Doug Jones, 'Innovating Evidence Procedure in Construction Arbitration' [2019] *Journal of the Canadian College of Construction Lawyers* 167.

are representative of the other claims in that category. The Claimant and Respondent, and their experts, can then meet to discuss the appropriateness of the claims selected, and the issues of liability and quantum which arise for determination on the selected claims. If this sampling approach is adopted it can allow for the determination of issues in dispute, which would have been otherwise been uneconomic to resolve.

Two elements are common to successful bespoke summary procedures: first, the tribunal must be proactive; and second, the parties, and their legal counsel, need to be willing to participate in the procedure in good faith. In the absence of either of these elements a workable framework is difficult to devise and implement. The role of the skilled legal adviser or arbitrator is to help craft the procedure to fit the needs of the disputes. Arbitrators should not be unduly fearful of due process concerns, which have been identified as a substantial barrier to efficiency in arbitration,²⁹ with this type of summary procedure. Rather, tribunals should think laterally and seek out these kinds of opportunities where the time savings of summary procedures are the most appropriate to reach a commercial resolution of the dispute.

COSTS

So far the discussion of the importance of efficient dispute resolution has only been in relation to the tribunal utilising the right tools at the right time to ensure efficient dispute resolution. However, employing the right procedural technique at the right time requires the cooperation of the parties. In this section, the role of costs in ensuring parties' adhere to the procedural timetable and conduct proceedings in an efficient manner is discussed.

In the QMUL Survey 2019, respondents were asked 'what makes or can make international construction arbitration inefficient?'³⁰ The most common answer chosen by a majority of interviewees was 'party tactics' (53%). These 'party tactics' often involve a litigious party unilaterally drawing out proceedings. Moving, then, away from the importance of timeliness and instead turning to ways in which the tribunal can control party tactics, this paper contends that effective cost allocation can be used to disincentivise such conduct.³¹

Reasonableness

Reasonableness as a factor in cost allocation can be used to compel counsel to conduct their case in a manner conducive to expeditious and cost-effective dispute resolution. As a criterion, 'reasonableness'

²⁹ QMUL Survey 2019, 24.

³⁰ QMUL Survey 2019, 24.

³¹ QMUL Survey 2019, 24.

appears in many arbitration rules, guidelines, and statutes, however, often without any clear indication of what factors constitute reasonableness or how it is to be applied. For instance, the ICC Rules provide:³²

The costs of the arbitration shall include the fees and expenses of the arbitrators and the ICC administrative expenses fixed by the Court, in accordance with the scale in force at the time of the commencement of the arbitration, as well as the fees and expenses of any experts appointed by the arbitral tribunal and the reasonable legal and other costs incurred by the parties for the arbitration.

Beyond the stipulation that costs should be ‘for the arbitration’, the discretion of the tribunal is broad. Therefore, the question of what costs are considered ‘reasonable’ is vague. The answer depends on the point of reference from which the assessment is made. There are two key factors to consider in this context; proportionality, and what can be described as necessity. One considers the scope/amount of the costs while the other considers whether the costs themselves are substantively appropriate. While proportionality is a widely used term of art, it is a broad concept which can take on many meanings. The natural question arising from the term ‘proportionality’ is to what must costs be proportional. Proportionality may be in relation to the total amount in dispute, the complexity of the legal issues raised, the quantity of factual evidence provided or the costs incurred by the other side in the arbitration. Determining the appropriate proportion for the facts at hand remains a question for the tribunal to decide on the facts of the proceedings.

Moving to the second aspect, there is the question of reasonableness in all the circumstances of the dispute. In other words, whether the costs are necessary and can be justified by the circumstances. This second principle has previously been observed in national courts, with the Supreme Court of Singapore, in particular, going to great lengths to emphasise its importance next to the proportionality principle.³³

No consideration of reasonableness can be had without the onus being on counsel to identify the circumstances which necessitated their particular choices, actions and conduct.

Employing such an approach further accords with that articulated in Article 38(5) of the ICC Rules:³⁴

In making decisions as to costs, the arbitral Tribunal may take into account such circumstances as it considers relevant, including the extent to which each party has conducted the arbitration in an expeditious and cost-effective manner.

³² ICC Rules, Article 38(1).

³³ *VV v VW* [2008] 2 SGHC 11.

³⁴ ICC Rules, Article 38(5).

The 2015 ICC Commission Report, *Controlling Time and Costs in Arbitration*,³⁵ ('ICC Commission's Report') provides a non-exhaustive list of issues for tribunals to consider in light of the necessity principle. This rather extensive list includes: the complexity of the matter, the existence of any unnecessary claims or counterclaims, the withdrawal of unmeritorious claims in a timely manner, the scope of evidence submitted by the parties, the accuracy and method in which evidence was submitted, and the length and relevance of any oral or written testimonies of witnesses and experts. The question underlying these factors is whether the chosen course of action is justified in the circumstances.

tribunals should use reasonableness as a means for deciding whether costs incurred should be recoverable, not simply whether they are too high. The reason is obvious, i.e. the efficient and fair management of proceedings calls for tribunals to condemn disproportionate and unnecessary spending by denying the recoverability of that spending should it occur.

Improper conduct/bad faith

Moving to improper or bad faith conduct, arbitration has long been susceptible to guerrilla tactics. The reason for this is no mystery. Arbitral tribunals, as creatures of contract, are not imbued with the immunities and prerogative powers of sovereign courts. Specifically, the inability to hold representatives in contempt, or to impose professional disciplinary sanctions, leaves much to the integrity of arbitration counsel.

The ICC Commission's Report³⁶ lists a variety of instances where improper conduct or bad faith may arise. Many of these are intuitive, such as excessive document disclosure and requests for the same, falsifying witness or expert evidence, falsifying submissions to the tribunal, and even acting aggressively and without professional courtesy. Interestingly, the report also identifies pre-arbitral conduct as an area for tribunals to consider when allocating costs, including whether arbitration could reasonably have been avoided, threatening litigious behaviour, parallel court proceedings in breach of an arbitration agreement, interfering with the counterparty's business interests, and prejudicial press campaigns.

Of particular importance, as noted in the ICC Commission's Report, are any post-formation conflicts that parties instigate with the aim of destabilising the tribunal and the arbitration. For example, the late

³⁵ ICC, *Techniques for Controlling Time and Costs in Arbitration: Report of the ICC Commission on Arbitration and ADR Task Force on Reducing Time and Costs in Arbitration*, available at <http://www.iccwbo.org/Advocacy-Codes-and-Rules/Document-centre/2012/ICC-Arbitration-Commission-Report-on-Techniques-for-Controlling-Time-and-Costs-in-Arbitration/> ('ICC, *Techniques for Controlling Time and Costs in Arbitration*'). The ICC Rules expressly provide for consideration of this report see ICC Rules, Appendix IV.

³⁶ ICC, *Techniques for Controlling Time and Costs in Arbitration*.

appointment of counsel once an arbitrator has been appointed may create a conflict of interest issue for the arbitrator, forcing them to resign or else threaten the enforceability of the award. Indeed, some institutional rules have developed specifically to prohibit and actively sanction doing so.³⁷ Such egregious forms of misconduct can and should be taken into account by arbitrators when allocating costs, with the two main objects being compensation for any party that has incurred unnecessary costs as a result thereof, as well as deterrence.

Best practice directions in cost allocation

The making of preliminary decisions on costs during the interim stages of an arbitration is a technique which has been valuable in a number of instances. The rationale for doing so is to address poor cost management in the instance that it arises, affording relief to the prejudiced party and seeking to deter further inefficiencies on the part of the impugned party.³⁸ These objects are not equally served where all determinations on costs are reserved by the tribunal for a final award at the end of the proceedings. This is an approach which found favour with respondents in the QMUL Survey 2019, in which the most widely supported approach to contain costs was for the tribunal to inform parties early on that costs would be used to encourage efficient behaviour (46%), followed by the use of interim costs orders before the conclusion of arbitration (41%).³⁹ It is noteworthy that only 7% of respondents answered that cost orders should not be used to improve efficiency.⁴⁰

A common hurdle tribunals face in making such determinations is establishing the jurisdictional basis for the tribunal's authority to do so. An alternative mechanism, in circumstances where the tribunal does not have clear authority to determine and order immediate payments of costs, is to fix the costs to be taken into account in the final award of costs, without ordering immediate payment. The benefits of this technique are similar to those mentioned earlier, although perhaps not as definitive as an order for the immediate payment for costs. This may be appropriate in certain jurisdictions to avoid breaching national arbitration statutes.

Cost allocation at interim stages avoids leaving costs out of the armoury of a tribunal for influencing behaviour during a case by simply discussing cost allocation at the commencement of the arbitration, and not again until the final award.

³⁷ LCIA Rules 2014, Article 18(4); IBA Guidelines on Party Representations, Sections 4 - 6.

³⁸ Doug Jones, 'Using Costs Orders to Control the Expense of International Commercial Arbitration' (2016) 82(3) CI Arb Journal 291.

³⁹ QMUL Survey 2019, 38.

⁴⁰ QMUL Survey 2019, 38.

VIRTUAL HEARINGS

The success of arbitration as a dispute resolution mechanism can be attributed to its flexibility and capacity for innovation to meet the needs of commercial parties by efficiently reaching a fair resolution of disputes. The COVID-19 crisis has challenged this by removing, or at least limiting, one of the most effective tools in an arbitrator's toolkit: in-person hearings.

The necessary public health policies of social distancing and travel restrictions has led to the mass postponement of proceedings worldwide. However, indefinite delay in cross-border disputes, in today's integrated global economy, is simply impossible. Any discussion of innovation in dispute resolution would be incomplete without considering the ways that the COVID-19 pandemic has forced change in the field to ensure disputes are resolved in a timely and effective manner.

The primary example of this is the effective utilisation of virtual hearings and CMCs in international arbitration. The starting point in this discussion is analysis of the problems traditionally associated with virtual hearings. Consideration will then be given to how virtual hearings are proving workable notwithstanding these issues. Finally, regard will be had to the consequences of this innovation for the field moving forward.

Challenges online: the virtual and the reality

Logistics and procedure are commonly identified as central issues in the use of virtual hearings. This includes concerns in relation to what is to be done where a video-link failure occurs, how to ensure all parties have the relevant documents in front of them during proceedings, including demonstrative presentations, and how to conduct ad-hoc private deliberations and discussions.

These issues, as well as many others commonly identified, flow from a lack of familiarity with virtual hearing technologies. It should be observed that many arbitrators have experience with some online procedural technologies, such as cloud-based document sharing and videoconferencing. Indeed, in the Queen Mary, University of London 2018 International Arbitration Survey ('**QMUL Survey 2018**'), 60% of respondents had used videoconferencing always or frequently.

However, the concept of a totally remote, or hybrid remote, hearing was unknown to many at the start of the pandemic in early 2020.⁴¹ As a result, and as with most new technologies, there were, and remain, perception issues with the adoption of virtual hearings into mainstream arbitral practice. Indeed, only

⁴¹ '2018 International Arbitration Survey: The Evolution of International Arbitration' (Research Survey, White & Case and Queen Mary University of London, 2018), 31 ('QMUL Survey 2018'). Only 8% of arbitrators stated in the Queen Mary Survey 2018 that they 'always' or 'frequently' used virtual hearing rooms.

66% of participants said they should be used more often, which was the lowest scoring of the technologies considered in the survey.⁴² Further, many in the arbitration community historically believed that video hearings would not be viable due to the upfront technological costs.⁴³

The perceptions and unfamiliarity of virtual hearings are not without reason. There exist a number of significant issues with virtual hearings, such as ensuring that witness testimony can be given in a fair manner, the security and confidentiality of proceedings, the verification of identity of parties present, language barriers to be overcome through simultaneous or consecutive interpretation, and due process for the parties.⁴⁴

Making the virtual workable

While none of these issues can be resolved overnight, effective innovation to accommodate them has been rapidly developed due to the COVID-19 pandemic. This innovation can primarily be seen in three spaces: first, innovations made by service providers; second, institutional guidelines and hearing centres; and third, proactive changes made by arbitrators.

(a) Service providers

Virtual hearing service providers are becoming increasingly sophisticated. Services provided by companies such as Epiq and Opus can effectively facilitate the evidence management, live transcription, online hearing books, and document viewing aspects of e-hearing rooms. These services include high quality, effective transcription and hyperlinking of transcripts, as well as advanced document management. In cases of technological breakdown, the remote operators will also be on hand to address technical issues as they arise.

In addition to these services, an audio-visual element must be provided through a videoconferencing platform. Zoom, Webex Microsoft Teams, and Bluejeans are four key operating platforms. These technologies provide for much more than just videoconferencing offering many services to complement the services of specialised providers. The services provided for include: document and content sharing, enabling documents to be called up on screen from the online hearing book, allowing many participants to be present, well in excess of that required for any arbitration (in the hundreds), and breakout rooms for each party or the tribunal to adjourn to during a break in the proceedings.

⁴² QMUL Survey 2018, 31.

⁴³ Robots Redux, GAR Volume 14 Issue 5, p 22.

⁴⁴ ICC Guidance Note on the Possible Measures aimed at Mitigating the Effects of the COVID-19 Pandemic (2020) [28].

These technological solutions are not without their drawbacks. Zoom, in particular, has been the subject of criticism for its failure to ensure cyber-security, an issue which it has now apparently overcome.⁴⁵ Microsoft Teams has faced particular connectivity issues in the Middle East and North African region.⁴⁶ While these are challenges that the services themselves are seeking to solve, it provides a reminder that users of these technologies in specialised industries must work with providers to outline their needs and expectations.

(b) Arbitral institutions and hearing centres

Arbitral institutions and hearing centres have taken a proactive role in these developments. Maxwell Chambers in Singapore, the Hong Kong International Arbitration Centre, Arbitration Place in Toronto, and the International Dispute Resolution Centre and International Arbitration Centre in London have been working with Epiq and Opus to provide impressive service offerings. Arbitration centres including the Australian Disputes Centre in Sydney and Arbitration Place in Toronto have created their own arbitration software.⁴⁷ Institutions are revising their procedures to meet the even greater need for electronic processes.⁴⁸

One example of the role institutions are playing in making the virtual hearing space workable can be seen with regard to cyber-security. These include the ICCA-NYC Bar-CPR Protocol on Cybersecurity in International Arbitration, the IBA Presidential Task Force's Guidelines on Cyber Security and the ICC's Note on Information Technology in International Arbitration, which provide guidelines to allay some of the security concerns outlined above. They do so by creating a framework to determine the reasonable information security measures that may be necessary in a particular arbitration, highlighting effective risk mitigation strategies and a holistic approach to the management of confidential documents.

(c) Arbitrators

⁴⁵ FBI Statement regarding 'Zoom-bombing': <https://www.fbi.gov/contact-us/field-offices/boston/news/press-releases/fbi-warns-of-teleconferencing-and-online-classroom-hijacking-during-covid-19-pandemic>. Although it should be noted that in January 2020, Zoom updated their software. In their security update, the teleconference software provider added passwords by default for meetings and disabled the ability to randomly scan for meetings to join.

⁴⁶ See for instance <https://www.capacitymedia.com/articles/3825363/telecoms-report-notes-opportunity-for-regulatory-change-in-mena-region>; and <https://www.middleeasteye.net/news/coronavirus-oman-qatar-uae-rights-groups-internet-calls-whatsapp-covid19>.

⁴⁷ Arbitration Place <https://www.arbitrationplace.com/arbitration-place-virtual-hearings>; and Australian Disputes Centre <https://www.disputescentre.com.au/advc-virtual/>.

⁴⁸ See for instance SIAC's Enhanced Covid-19 Measures [https://www.siac.org.sg/images/stories/press_release/2020/\[ANNOUNCEMENT\]%20ENHANCED%20COVID-19%20MEASURES%20AT%20SIAC.pdf](https://www.siac.org.sg/images/stories/press_release/2020/[ANNOUNCEMENT]%20ENHANCED%20COVID-19%20MEASURES%20AT%20SIAC.pdf); and ICC Guidance Note on the Possible Measures Aimed at Mitigating the Effects of the COVID-19 Pandemic <https://iccwbo.org/content/uploads/sites/3/2020/04/guidance-note-possible-measures-mitigating-effects-covid-19-english.pdf>

Innovations at the institutional and technological level can only go so far. The implementation of a workable strategy ultimately turns on the ability of arbitrators to adapt. Successful virtual hearings share a common underlying element, a detailed agreed hearing protocol. While technological services offer many of the features of in-person hearings these can only be effectively implemented where they are fully understood. More importantly, the limitations of these technologies must be recognised. There will always be elements of in-person hearings that cannot be effectively replaced. In such circumstances innovation and compromise are essential.

The most significant logistical challenge is that of the facilities available to counsel, arbitrators and witnesses.⁴⁹ In this regard forethought is required to ensure that each has a suitable internet connection. Investigation may be required as to internet service provider options and the availability of optical fibre in the area. However even where the connection from the provider to the home cannot be improved the use of an ethernet cable can ensure that a stable connection is provided for within the home.

Additionally, consideration should be given to visual and audio equipment. A separate webcam, of higher quality than that built into a laptop is preferable to make the experience closer to that of an in-person hearing. Consideration should also be given to surroundings. While a virtual background may mask the home office setting, it should only be used where there is sufficient contrast between the background and foreground. This requires the use adequate artificial lighting. Artificial lighting may also assist in overcoming some of the strangeness created by differing time zones. Warm lighting is preferred to provide a comfortable setting for participants. Minimising outset audio distractions is also essential to create the virtual hearing room environment. This requires investment in a comfortable headset that can be used for a number of hours without losing charge.

For effective engagement in the proceedings a number of technologies may assist. An effective graphics card is essential so that the image of participants is clear. The use of a larger screen may also assist with the physical viewing of the virtual hearing, particularly where the videoconferencing software creates small icons for participants. The use of multiple monitors will assist with multi-tasking required during an arbitration. This allows arbitrators to maintain eye-contact while having demonstrative exhibits or written submissions open and available to them concurrently.

The notion that the upfront technological cost involved in virtual hearings is prohibitive is misconceived. An effective setup may be created at minimal expense, through tweaking the home office

⁴⁹ The active steps that must be taken to prepare arbitrators are outlined in Professor Janet Walker's article <https://globalarbitrationreview.com/article/1226827/lights-camera-action-a-checklist-for-virtual-hearing-participants>.

and making investments where necessary. Further, any investment in technology will be long-term, ensuring that the benefits outweigh upfront costs.

Ongoing compromise and awareness of the limitations of the digital environment is also required. For instance, anecdotal experience indicates that virtual hearings are more efficient where there are shorter breaks but also shorter daily hearings. This is just one example of the greater attention and awareness to the virtual experience is required for the efficient conduct of proceedings. However, trial and error, as well as the continued experience of virtual hearings during the pandemic, will undoubtedly inform the ad-hoc issues which may arise.

The future

Moving forward, more careful consideration must be placed on the potential dispute resolution mechanisms and options that have been adopted during the COVID-19 crisis. The uptake of virtual hearings over such a short timespan has been remarkable. As discussed above these technologies had been at the fringes of arbitration but became mainstream for many during the COVID-19 crisis.⁵⁰ Recognising the widespread familiarity in the arbitration community with videoconferencing, it is likely that in future virtual hearings will be seriously considered by parties. Virtual hearings are much more cost effective than the in-person alternative which requires flights from around the world to the hearing location. Additionally, service providers are likely to continue increasing the quality of their products and offerings making the options increasingly attractive.

Even where virtual hearings, hybrid or otherwise, themselves are not adopted the benefits flowing from advances in the technological offering will likely be more wide-reaching. For instance, the benefits of Case Management Conference performed by video link have been made clear by the COVID-19 crisis. The opportunity to conduct hybrid hearings—with some parties in person and others appearing via video link should be carefully considered. As with all things in arbitration the approach should not be overly prescriptive however these emerging low-cost tools must be utilised where they can better serve the interests of commercial parties.

The question that naturally follows however is ‘where to from here?’. Beyond the specific techniques adopted in handling the COVID-19 crisis, what can be said more generally about the use of technology in arbitration and how the relationship between these two fields will continue to evolve? The answer turns on three considerations: the cost of new technologies, changes to the field will only occur where it is commercial to do so; the willingness of service providers to adapt to the needs of the industry; and

⁵⁰ As above, only 8% of arbitrators stated in the Queen Mary Survey 2018 that they 'always' or 'frequently' used virtual hearing rooms Queen Mary, University of London 2018 International Arbitration Survey found, at pp. 31 and 32.

the ability for arbitrators to effectively understand and implement these technologies. These are pertinent and exciting ideas, however, further consideration of them is outside the scope of this paper.

One widely discussed future development has been the potential for Augmented Reality and Virtual Reality hearings creating a three-dimensional hearing context. The areas where this kind of technology is most apparent in construction arbitration is with respect to the presentation of evidence. These three-dimensional services assist the arbitral tribunal by allowing a virtual visit of the construction site, including its facilities, equipment, access points and dimensions. The usefulness of these technologies in any particular dispute will turn on how fact intensive a particular claim may be. However, where such visualisation is necessary the cost of a virtual visit is often far below that of the traditional site visits in construction arbitration.

CONCLUSION

Fair and economic dispute resolution can and should be achieved despite the relatively unique characteristics of construction arbitration. Knowledge, and exploration, of the available tools by all those involved – the parties, their counsel and arbitrators is vital to achieving this. Also critical is a process ensuring that these tools are deployed at the most effective time in the process. The future of arbitration will be greatly enhanced by informed collaboration between the stakeholders in deploying evolving best practices and never assuming that this concept is ever frozen.