What does a court or tribunal want (and not want) from a party-appointed delay expert witness: perspectives from a practising arbitrator

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Much has been written about what form of delay analysis is best suited for determining extensions of time or delay-related compensation claims in formal dispute resolution. Perhaps just as much ink has been spilled reporting upon court judgments where delay expert witnesses[1] have been found to have fallen below required standards or have provided evidence that was of little or no use in determining the issues.

This article does not offer views on what form or forms of analysis are appropriate, but instead explores points that a delay expert witness may wish to consider in determining how best to approach his or her task, with a view to providing the court or tribunal with the best possible expert assistance.

This follows my recent article 'What does a court or tribunal want (and not want) from a party-appointed quantum expert witness: perspectives from a practising expert and arbitrator'[2].

I shall explore the subject under the following headings, before drawing the threads together:

1. The duties of an expert witness.
2. Independence and compliance with 'the rules'.
3. An appreciation of the underlying contractual and legal framework.
4. Understanding differences of approach required in analysing excusable and compensable delay.
5. Distinction between the facts and expert opinion evidence.
6. Addressing the parties' factual cases.
7. Matching the form of analysis to the dispute.
8. Prospective or retrospective analysis.
9. Identification of the critical path.
10. Early agreement on key aspects of any delay analysis.
11. Joint statements.
12. The art of explaining a complex factual matrix in simple terms.

The duties of an expert witness

Most readers will already be familiar, no doubt, with the concept of an expert witness' primary duty being to the court or tribunal. In the oft-cited judgment *The Ikarian Reefer*[3], Mr. Justice Cresswell identified the following requirements:

1. Expert evidence should be and should be seen to be the independent product of the expert uninfluenced by the exigencies of litigation.

[1] Experts who give opinion evidence in relation to matters of delay may be variously described as delay, delay analyst, programming, or scheduling experts. For simplicity, I collectively refer to them in this paper as delay experts.
[2] Dixon, M. (2021). *What does a court or tribunal want (and not want) from a party-appointed quantum expert witness: perspectives from a practising expert and arbitrator?* Construction Law Journal (2021) 37 Const. L.J., Issue 4
[3] *National Justice Compania Naviera SA v Prudential Assurance Company Ltd ('The Ikarian Reefer')* [1993] (No.1) 2 Lloyd's Rep 68 at [81]

2. An expert witness should provide independent assistance to the Court by way of objective unbiased opinion in relation to matters within his expertise and should never assume the role of advocate.
3. An expert witness should state the facts or assumptions on which his opinion is based. He should not omit to consider material facts which detract from his concluded opinion.
4. An expert witness should make it clear when a particular question or issue falls outside his expertise.
5. If an expert's opinion is not properly researched because he considers that insufficient data is available, then this must be stated with an indication that the opinion is no more than a provisional one.
6. If, after exchange of reports, an expert witness changes his view on a material matter, such change of view should be communicated to the other side without delay and when appropriate to the court.
7. Where expert evidence refers to documents these must be provided to the opposite party at the same time as the exchange of reports.

These requirements have stood the test of time and remain valid. As Mr. Justice Fraser said in *ICI*[4]:

> *'No expert should allow the necessary adherence to the principles in The Ikarian Reefer to be loosened."*

In England and Wales, the Civil Procedure Rules ("CPR") Part 35 confirms[5] that it is the duty of experts to help the court on matters within their expertise and this duty overrides any obligation to the person from whom experts have received instructions or by whom they are paid. It also confirms that an expert's report must comply with the requirements set out in Practice Direction 35, which broadly reflect the principles set out in *The Ikarian Reefer.*

Many (but not all) jurisdictions have similar standards.

Independence and compliance with 'the rules'
The primary requirement of a court or tribunal must be for the expert to comply with the particular rules of the jurisdiction and, crucially, provide independent opinion evidence. In the Civil Justice Council's 'Guidance for the instruction of experts in civil claims' in England and Wales, it states that[6]:

> *'A useful test of 'independence' is that the expert would express the same opinion if given the same instructions by another party. Experts should not take it upon themselves to promote the point of view of the party instructing them or engage in the role of advocates or mediators."*

Expert evidence falling below the required standard is of no assistance to a judge or arbitrator, and ultimately is of no assistance to the appointing party.

In *Castle Trustee*[7], the parties had previously attempted to resolve their dispute by adjudication. In the adjudication, Castle Trustee relied on a report from a delay expert. That expert subsequently moved firms, and, in the event, Castle Trustee appointed a replacement delay expert from the firm for the purposes of the subsequent litigation. Mrs. Justice Jefford said this in relation to his evidence:

[4] *Imperial Chemical Industries Limited v Merit Merrell Technology Limited (No. 2 Quantum)* [2018] EWHC 1577 (TCC) at [37]
[5] Part 35.3
[6] At [11]
[7] *Castle Trustee Limited and Others v Bombay Palace Restaurant Limited* [2018] EWHC 1602 (TCC) at [69 *et seq.*]

'What [the expert] … did was reproduce [the original expert's] report in its entirety and without any material amendment. He in no way attempted to disguise what he had done.

… it is right that the Court should adopt a healthy scepticism in a case such as this where one programming expert adopts wholesale the views of another. … In fact, in this case, it seemed to me that [he] had formed no independent view at all. I am frankly at a loss to understand on what basis he could possibly have formed such a view. Quite extraordinarily, [he] had not even seen, and had apparently not thought it relevant to see, the parties' pleaded cases or any disclosure.

… I place no reliance on [his] evidence as such. It was not expert evidence; it did not comply with the Court's Order; [he] had not acted in accordance with CPR Part 35 …"

Similarly, in *Great Eastern*[8], His Honour Judge Wilcox rejected the evidence of Laing's contract management and programming expert for a lack of independence:

'I reject the expert evidence of [Laing's expert] as to the performance of Laing as contract manager in relation to periods one and two. He has demonstrated himself to be lacking in thoroughness in his research and unreliable by reason of his uncritical acceptance of the favourable accounts put forward by Laing …

[He] ultimately, in cross-examination, as he had to, revised his opinion … His failure to consider the contemporary documentary evidence … and his preference to accept uncritically Laing's untested accounts has led me to the conclusion that little weight can be attached to his evidence save where it coincides with that of [Great Eastern's expert]. I sadly conclude that he has no concept of his duty to the court as an independent expert …" (my emphasis)

Contrast that with what Wilcox HHJ said about Great Eastern's two experts covering the same ground as that of Laing's expert[9]:

'… I am satisfied that he was a witness of intellectual vigour and independence who did his best to assist the court in an objective and dispassionate way. His research and analyses were impressive and comprehensive. They were based upon the contemporary primary documentation which included computer records and timed site photographs depicting the actual progress of the demolition preparation and construction on site and the inter-relation of these activities. This data was objectively evaluated and reflected in his expressed opinion. …

'I prefer the evidence of [Great Eastern's expert] who was an impressive and conscientious witness who showed that he approached his role as an expert in an independent way and was prepared to make concessions when his independent view of the evidence warranted it."

Walter Lilly[10] is another example, where Mr Justice Akenhead said:

'As for the delay experts … I preferred [Walter Lilly's expert] in almost every respect. He, broadly, logically and conventionally, adopted the approach of establishing critical delay by reference to the 'logical sequence(s) of events which marked the longest path through the project'; [Mr. Mackay's expert] accepted that this was generally the way to calculate delay …"

[8] *Great Eastern Hotel (Great Eastern Hotel Company Ltd v John Laing Construction Company Ltd* [2005] EWHC 181 (TCC) at [111, 128]
[9] At [65, 111]
[10] *Walter Lilly & Company Limited v Giles Patrick Cyril Mackay and Another* [2012] EWHC 1773 (TCC) at [98]

In rejecting the evidence of Mr. Mackay's delay expert, Akenhead J said[11]:

> *'[He] proceeded on a much more subjective approach … [His] report also in some respects almost reads simply as a suggestion to the Court that the Claimant has not proved its case; an example is the opening words: 'Walter Lilly's case does not stack up'; his report is littered with this type of remark that WLC has failed to prove or demonstrate this or that or to make out its case; it is not for an expert to suggest this type of thing. … He frequently descended into the arena of disputed facts and liabilities in which he was not the relevant expert … He produced … a 'Weighted Significance Matrix' which was worthless and self-fulfilling when he on a largely subjective basis awarded weightings to the various possible causes of delay; this … unsurprisingly gave much higher weightings to the subjectively accepted factors (such as plastering defects) selected by him or his client as 'significant'."*

An appreciation of the underlying contractual and legal framework
A determination of the relevant legal principles, or the intended meaning and effect of the contractual terms, concerning the awarding of extensions of time or the basis for assessing delay-related compensation are not, of course, matters for expert opinion. Where such matters are in issue, it is for the tribunal to hold the law or construe the contract after hearing the legal submissions of the parties.

However, where such issues do arise, the delay expert witness still needs to have an appreciation of the parties' respective positions, to ensure that his or her evidence remains valid, depending upon how the court or tribunal construes the contract or holds the law. This may necessitate alternative analyses being required.

Even where there is no apparent dispute between the parties in relation to the relevant legal principles or contract construction, the expert would still be advised to have an appreciation of how the relevant terms or principles are intended to operate insofar as they may relate to the disputed delay-related claims. Particular care should be taken where the contractual terms are bespoke or standard form contracts have been heavily amended.

Similarly, where a delay-related financial claim is advanced as damages arising out of a breach of contract or negligence, the expert ought to be aware of the correct basis for assessing damages in the particular jurisdiction, as this may impact upon how his/her task should be approached.

Instructing lawyers will sometimes frame the questions for expert opinion taking account of the relevant contractual or legal framework, however this is not always the case. If in any doubt, the expert should seek further instructions or directions.

Failure by a delay expert (or his/her instructions) to take account of the contractual or legal framework applicable to the case—or the parties' competing arguments in this regard—may ultimately result in the expert's analysis and evidence being of no assistance to the judge or arbitrator in deciding the issues. For example, in *Fluor*[12], Mr. Justice Edward-Stuart rejected the analyses carried out by both delay experts appearing before him, because they failed to account for the circumstances that applied in the case:

> *'The court has been provided with detailed and careful reports by the two delay experts, for which it is grateful … However, I am not persuaded that the approach adopted by either expert is appropriate given the unusual circumstances of this case …"*

[11] At [99]
[12] *Fluor v Shanghai Zhenhua Heavy Industry Co. Ltd* [2018] EWHC 1 (TCC) at [275]

Also, in *The Royal Brompton Hospital*[13]—a case concerning a professional negligence damages claim against the design team on a development at the Royal Brompton and National Heart and Lung Hospitals in Chelsea, London—His Honour Judge Seymour said this about the evidence of Royal Brompton's delay expert:

> *'While I do not reject …[his]… evidence …, I found that it was of no assistance to me in relation to the important issues which I have to decide. [His] evidence was directed to the question what were the real causes of the delay to the completion of the Works. That evidence was always going to be of limited relevance. It just does not impact at all on any issue of liability."*

Understanding the differences in approach required for analysing excusable and compensable delay

Many standard forms of contract include separate provisions for the awarding of extensions of time and the assessment of delay-related compensation. Claims might also be made under common law (or under codified law in civil law jurisdictions) for delay-related damages arising out of a breach of contract or negligence. A delay expert should have an appreciation of how the legal and contractual tests might differ in assessing extensions of time and financial compensation under a particular contract or in a particular jurisdiction, and how such differences may require different, or modified, analyses. As I said above in respect of the general contractual or legal framework, if an expert is unsure, it may be appropriate to seek instructions or directions.

For example, in *Costain*[14], Fernyhough QC (sitting as a Deputy High Court Judge in England) confirmed that:

> *'…it is necessary to draw a distinction between a claim for damages for delay and a claim for an extension of time of the completion date on account of delay. When an extension of time of the project completion date is claimed, the contractor needs to establish that a delay to an activity on the critical path has occurred of a certain number of days or weeks and that that delay has in fact pushed out the completion date at the end of the project by a given number of days or weeks, after taking account of any mitigation or acceleration measures. If the contractor establishes those facts, he is entitled to an extension of time for completion of the whole project including, of course, all those activities which were not in fact delayed by the delaying events at all, i.e. they were not on the critical path.*
>
> *But a claim for damages on account of delays to construction work is rather different. There, in order to recover substantial damages, the contractor needs to show what losses he has incurred as a result of the prolongation of the activity in question. Those losses will include the increased and additional costs of carrying out the delayed activity itself as well as the additional costs caused to other site activities as a result of the delaying event. But the contractor will not recover the general site overheads of carrying out all the activities on site as a matter of course unless he can establish that the delaying event to one activity in fact impacted on all the other site activities. Simply because the delaying event itself is on the critical path does not mean that in point of fact it impacted on any other site activity save for those immediately following and dependent upon the activities in question.*
>
> *It seems to me that Costain's claim in respect of its prolongation costs has fallen between the two stools described above. The claim is put on the basis that the delays to the foundation works caused critical delay to the whole project of over twelve weeks and the whole project's general site costs are claimed on that basis. Those costs are evaluated as at October 2002-January 2003 and not at the end of the project which occurred well over two years later*

[13] *The Royal Brompton Hospital NHS Trust v Frederick Alexander Hammond and Others* [2000] EWHC Technology 39 at [27]
[14] *Costain Limited v Charles Haswell and Partners Limited* [2009] EWHC 3140 (TCC) at [183 *et seq.*]

in May 2005. But no evidence has been called to establish that the delaying events in question in fact caused delay to any activities on site apart from the RGF and IW buildings. That being so, it follows, in my judgment, that the prolongation claim advanced by Costain based on recovery of the whole of the site costs of the Lostock site, fails for want of proof."

By way of a further example, how an extension of time is assessed in circumstances where a critical delay is concurrently caused by excusable and culpable events might also be different depending upon the jurisdiction. On this point, the English and Scottish courts have reached different conclusions[15].

Distinction between the facts and expert opinion evidence
Any delay expert would be wise to keep in mind the trial judge's summary in *Castle Trustee*[16] of the distinction between the facts and delay expert opinion evidence:

'Coulson J.'s [case management] directions had explicitly limited … [delay expert] evidence to evidence that truly involved the exercise of expertise in programming. On one view the cause of delay is entirely a matter of fact but expert evidence may be admissible and may assist the court in a number of ways. For example, there may be a complex programme for the works produced using programming software. There may be issues as to the validity of a baseline programme which involves expertise either in programming as such or in the construction process. Assessment of the impact of a factual event on the programme may involve running or manipulating or adjusting the programme which itself involves an expertise (not to mention software) which the court does not possess. The programme may have been adjusted on numerous occasions over the course of a lengthy project and that itself may be the subject of expert opinion. The programme and impacts of events on the programme may involve analysis of logic links and dependencies which again may involve expertise in programming and/or the construction process.

… I infer from Coulson J's direction that he regarded this case as one in which there were unlikely to be any particularly complex programming issues and any issues relating to delay were likely to be questions of fact, a view with which I wholeheartedly agree. Secondly, I infer that he recognised that, as a matter of case management, it was appropriate to express in the directions the need to ensure that the expert evidence was not diffuse and was properly focussed on matters of expertise rather than recitation of the facts."

In *Mirant*[17], Toulmin HHJ confirmed that causation is primarily a question of fact:

'The question of whether or not … [a matter] … caused delay to commencement … and if so what delay is a question of fact. The evidence of Programming Experts may be of persuasive assistance …"

Because the task of deciding what caused delay—and by how much—involves the finding of facts, a court or tribunal is not bound to rely on the expert evidence before it, irrespective of whether or not that evidence is specifically rejected. In this regard, Toulmin HHJ concluded as follows in *Mirant*[18]:

'I conclude that the Reports of the Programming Experts take me no further than the findings which I have already made."

[15] Compare the opinion of the Scottish Inner House Court of Session in *City Inn Limited v Shepherd Construction Limited* [2010] CSIH 68 to the English judgments in *Henry Boot Construction (UK) Limited v Malmaisson Hotel (Manchester) Limited* [2000] EWCA Civ 175, R*oyal Brompton Hospital NHS Trust v. Frederick A Hammond & Ors* [2000] EWHC Technology 39, *Adyard Abu Dhabi v SD Marine Services* [2011] EWHC 848 (Comm) and *Walter Lilly & Company Limited v Giles Partick Cyril MacKay and Another* [2012] EWHC 1773 (TCC)
[16] *Castle Trustee Limited and Others v Bombay Palace Restaurant Limited* [2018] EWHC 1602 (TCC) at [64, 66]
[17] *Mirant Asia-Pacific Construction (Hong Kong) Ltd v Ove Arup & Partners International Ltd* [2007] EWHC 918 (TCC) at [575]
[18] At [595]

Similarly, in the Australian case of *Kane*[19], the judge decided that:

> *'Insofar as the evidence is relevant for the purposes of the finding of fact with respect to the time delays and EOT claims, I conclude that the evidence [of Kane's delay expert] was useful, but ultimately, of limited assistance because of the fact that there was ample evidence on both the side of the plaintiff and the defendants as to the circumstances that surrounded each of the EOT claims."*

Addressing the parties' factual cases
In order to discharge his or her duties, an expert must account for each party's factual case.

Inevitably, some facts will be agreed, and some will be disputed. A delay expert's role is not to decide what facts are preferred. That is the job of the court or the tribunal. Rather, the expert should seek to identify what relevant facts are agreed and what are in issue from the pleadings and factual witness evidence. Having identified both the agreed and disputed facts, the expert should provide analyses and opinions that take account of the possible factual findings of the court or tribunal. Similarly, if the expert identifies conflicting factual evidence in his investigations which might impact on how an issue might be decided, alternative analyses should be presented reflecting the competing evidence.

As the judge said in *Great Eastern*[20] Laing's expert's opinion was:

> *'... unreliable by reason of his uncritical acceptance of the favourable accounts put forward by Laing ..."*

Matching an Appropriate Form of Delay Analysis to the Dispute
As I said at the beginning, this article does not offer views as to what form or forms of delay analysis should be preferred. It is, however, worth exploring some decided cases that give an insight into the trial judges' thoughts on the topic, and which give some indication as to what forms of analysis might be acceptable and those that might not.

In *The Royal Brompton Hospital*[21], Seymour HHJ said this:

> *'... it was plain from the evidence called at the sub-trial on behalf of the Claimant, in particular ... [Royal Brompton's] ... programming expert, that there are a number of established ways in which a person who wishes to assess whether a particular event has or has not affected the progress of construction work can seek to do that ... [Royal Brompton's expert] frankly accepted that the various different methods of making an assessment of the impact of unforeseen occurrences upon the progress of construction works are likely to produce different results, perhaps dramatically different results. He also accepted that the accuracy of any of the methods in common use critically depends upon the quality of the information upon which the assessment exercise was based."*

In *Mirant*[22], His Honour Judge Toulmin said:

> *'... I accept, that the critical path analysis is a tool or technique to assist in the management of construction Projects and not an end in itself.*

[19] *Kane Constructions Pty Limited v Cole Sopov and Others* [2005] VSC 237 at [602]
[20] See footnote 8 *supra*
[21] *The Royal Brompton Hospital NHS Trust v Frederick Alexander Hammond and Others* [2000] EWHC Technology 39 at [32]
[22] *Mirant Asia-Pacific Construction (Hong Kong) Ltd v Ove Arup & Partners International Ltd* [2007] EWHC 918 (TCC) at [125, 130, 131, 136]

… It is also used as a tool for analysing, as at the given date, what has caused any delay that has occurred and what is the extent of that delay.

Windows analysis is the most accepted method of critical path analysis.
…
In this case forms of the windows or, perhaps more accurately described, watershed analysis are used by the experts …"

With two forms of the 'windows' critical path method of analysis before him, the Toulmin HHJ preferred one over the other for the following reason[23]:

'When they came to give evidence it was apparent that [Arup's expert] was far better prepared than [Mirant's expert] on the details of the events with which I was concerned and was therefore able to be of much greater assistance."

In the Hong Kong case *Leighton Contractors*[24], the judge accepted that a 'windows' form of delay analysis may be appropriate, but emphasised the importance of grounding any form of analysis on the facts:

'… Although timeslice may be appropriate, a theoretical or artificial result which had no regard to the as-built situation will be rejected …"

In the Australian judgment of the Supreme Court of New South Wales in *White*[25], which concerned a claim for damages arising out of the design of a sewerage system on a building project undertaken by the second defendant, Illawarra Water & Sewer Design Pty Ltd ("IWS"), Mr Justice Hammerschlag was highly critical of the delay analyses performed by both experts before him:

"[IWS's expert] used the so-called 'collapsed as-built (or 'but-for') analysis", which involves extracting delay events from the as-built programme to provide a hypothesis of what might have happened had the delay events not occurred. This method requires the selection of 'logic links" which link various components of the works to assume relationships of dependency to determine a critical path.

[White's expert] used the so-called 'as-planned versus as-built windows analysis", under which the duration of the works is broken down into windows which are framed by revised contemporaneous programmes, contemporaneously updated programmes, milestones or significant events. Key measuring points are identified on the path taken by the analyst to be critical. Changes to the critical path, critical path delays and the causes of those delays within and between each of the windows are examined to determine slippages and causes of delays.

… neither method is appropriate to be adopted in this case.
… close consideration and examination of the actual evidence of what was happening on the ground will reveal if the delay in approving the sewerage design actually played a role in delaying the project and, if so, how and by how much … the Court should apply the common law common sense approach to causation.

The Court is concerned with common law notions of causation. The only appropriate method is to determine the matter by paying close attention to the facts, and assessing whether White has proved, on the probabilities, that delay in the underboring solution delayed the project as a whole and, if so, by how much."

[23] At [71]
[24] *Leighton Contractors (Asia) Ltd v Stelux Holdings Ltd* [2004] HCHK HCCT/29
[25] White Constructions Pty Ltd v PBS Holdings Pty Ltd (and Another) [2019] NSWSC 1166 at [19 *et seq.*] and [197 *et seq.*]

At first glance, some might find it surprising that the judge rejected the 'as-planned versus as-built windows' form of analysis in the light of what was said in *Mirant* and because, when properly performed, this methodology ought to be capable of providing the answers that the judge was looking for. However, closer scrutiny reveals that he found both expert reports to be complex and impenetrable.

In the event, the judge obtained assistance from a court-appointed engineer pursuant to the Uniform Civil Procedure Rules 2005 of New South Wales to help him on the delay issues that he was required to decide. The judge said this about his assistance:

> *'I record that [his] assistance was invaluable to the Court. His advice demonstrated that the complexity that has been introduced is a distraction."*

The judge proceeded to decide the issues by carefully considering the factual evidence and applying a common-sense approach to causation. He did not rely on either of the experts' opinions and so all the costs incurred by the parties on their experts were wasted.

Skanska[26] is another example of where a judge preferred a common-sense analysis of the facts to a detailed programming exercise:

> *'Mr [S], a planning consultant originally employed by and later retained by SCL as a Consultant gave evidence at the Liability trial. He gave evidence in this trial as to the extensions of time that the claiming sub-contractors were entitled to as against SCL in consequence of Egger's breaches. He had the advantage in that his major role during the currency of the Contract was to endeavour to co-ordinate the activities of the process contractors on site. In filling the administrative vacuum left by Egger, he had direct hands on knowledge of the inter relation of the process contractors employed by Egger, the sub-contractors and of SCL. He impressed me as someone who was objective, meticulous as to detail, and not hide bound by theory as when demonstrable fact collided with computer programme logic."*

Contrast that with his conclusions about the evidence of Egger's delay expert[27]:

> *'[He] produced a report of some hundreds of pages supported by 240 charts. It was a work of great industry … There were times when the impression was created that [he] was not entirely familiar with the details of the report, which he signed and presented … There were pressures of time upon him. This and the extent of reliance upon the untested judgment of others in selecting and characterising the data for input into the computer programme, however impeccable the logic of that programme, adversely affects the authority of the opinion based upon such an exercise.*
> *… It is evident that the reliability of [his] sophisticated impact analysis is only as good as the data put in. The court cannot have confidence as to the completeness and quality of the input into this complex and rushed computer project. I preferred the evidence of Mr S as to programming and planning matters to that of [Egger's expert] …"*

Prospective or retrospective delay analysis

Some standard forms of contract allow, or require, the contract administrator to assess extensions of time on a prospective basis. The prospective assessment may be subject to an after-the-event review under some forms of contract, but this is not always the case.

[26] *Skanska Construction UK Ltd v Egger (Barony) Ltd* [2004] EWHC 1748 (TCC) at [413]
[27] At [415 *et seq.*]

Notwithstanding whether a contract administrator may be required to assess extensions of time on a prospective basis during the currency of the works, the authorities provide a clear indication that the courts generally prefer a retrospective approach in finally determining subsequent disputes. That is not to say there are no circumstances where a court or tribunal might find it appropriate to adopt a prospective basis, however it seems that it would require very clear contractual wording to persuade it that this was the correct approach when determining a dispute after the event and in formal proceedings.

For example, in *Henry Boot*[28] the judge said this in relation to an extension of time claimed on a JCT form of contract:

> *'It seems to me that it is a question of fact in any given case whether a Relevant Event has caused or is likely to cause delay to the Works beyond the Completion Date..."* (my emphasis)

Similarly, in relation to claims for delay-related compensation or damages, the courts will invariably require causation and quantum to be determined on the facts, rather than forecasted or prospective assessments, unless the contract contains very clear provisions requiring a different approach.

In the House of Lords judgment in *Bwllfa*[29], which concerned a claim against a water company for compensation arising from a delay in being able to mine for coal during a period when the commodity price had risen, Lord Macnaghten said:

> *'In order to enable the arbitrator to come to a just and true construction it is his duty I think to avail himself of all information at hand at the time of making his award which may be laid before him. Why should he listen to conjecture on a matter which has become an accomplished fact? Why should he guess when he can calculate? With the light before him why should he shut his eyes and grope in the dark?"*

More recently, in *Fluor*[30], Mr. Justice Edwards-Stuart said:

> *'There has been an extensive debate about the correct approach to delay analysis. ... I would accept, that a prospective analysis—in other words considering the critical path at any particular point in time as viewed by those on the ground at that time—does not necessarily produce the same answer as an analysis carried out retrospectively. The former is the correct approach when considering matters such as the award of an extension of time, but that is not the exercise with which the court is concerned in this case. I agree that some form of retrospective analysis is required."* (my emphasis)

Identification of the critical path

It is generally accepted that any form of delay analysis, whether used for the assessment of an extension of time or delay-related compensation, requires the critical path to be determined.

Although that may be the case, some parties still get into difficulty. For example, in *Balfour Beatty*[31] the judge concluded:

> *... In the context of a dispute about the time for completion a logical analysis includes the logic*

[28] *Henry Boot Construction (UK) Ltd v Malmaison Hotel (Manchester) Ltd* [1999] 70 Con LR 33
[29] *Bwllfa and Merthyr Dare Steam Collieries (1891) Ltd v Pontypridd Waterworks Co.* [1903] AC 426
[30] *Fluor v Shanghai Zhenhua Heavy Industry Co. Ltd* [2018] EWHC 1 (TCC) at [275]
[31] *Balfour Beatty Construction Limited v The Mayor and Burgess of the London Borough of Lambeth* [2002] BLR 288 at [21]

required for in the establishment of a CPN [critical path network] ...

.... From the material available to me it is clear that BB did little or nothing to present its case in a logical or methodical way. Despite the fact that the dispute concerned a multi-million pound refurbishment contract no attempt was made to provide any critical path. The work itself was no more complex than many other projects where a CPN is routinely established and maintained ...

... By now one would have thought that it was well understood that, on a contract of this kind, in order to attack, on the facts, a clause 24 certificate for non-completion (or an extension of time determined under clause 25), the foundation must be the original programme (if capable of justification and substantiation to shows its validity and reliability as a contractual starting point) and its success will similarly depend on the soundness of its revisions on the occurrence of every event, so as to be able to provide a satisfactory and convincing demonstration of cause and effect. A valid critical path (or paths) has to be established both initially and at every later material point since it (or they) they almost certainly change ..."

This judgment provides a clear indication that an expert needs to take care to ensure that he takes account, in his analyses, of any shifts in the critical path during the course of the project.

Early agreement on key aspects of any delay analysis
There are significant benefits to be gained if opposing experts can agree, at an early stage, the form of analysis to be adopted, an appropriate baseline schedule and key schedule updates. Early agreement on other matters such as the baseline critical path, any changes to the critical path during the project, and the key source or sources of as-built data can also be of benefit.

Some arbitrators and judges require the experts to meet and seek to agree matters such as this in an initial meeting before report preparation begins. I am aware of some arbitrators who go further, requiring an initial meeting between the tribunal and the opposing experts to encourage debate and agreement on such matters.

Experts should take a pro-active approach in seeking to agree such matters as early as possible, not only due to the likely time and cost savings in the proceedings, but also because it will help focus all concerned on the relevant issues without the distraction of arguments about methodology or the like.

With that in mind, Toulmin HHJ said this in relation to the delay experts in *Mirant*[32]:

'The Programming Experts had a difficult task.
... The difficult task which they had to undertake was to give a retrospective analysis based on uncertain data. In the course of a number of interlocutory hearings I emphasized the need for the experts to meet to develop a common approach to the problem and then to engage with each other ... This procedure, which saves substantial time and frequently leads to a settlement, is developed to a higher degree in the Technology and Construction Court in this country than elsewhere in the jurisdiction. Unfortunately it did not happen sufficiently in this case."

Joint statements
In *ICI*[33], Fraser J said:

[32] *Mirant Asia-Pacific Construction (Hong Kong) Ltd v Ove Arup & Partners International Ltd* [2007] EWHC 918 (TCC) at [69 *et seq.*]
[33] *Imperial Chemical Industries Limited v Merit Merrell Technology Limited (No. 2 Quantum)* [2018] EWHC 1577 (TCC) at [237(4)]

'The process of experts meeting under CPR Part 35.12, discussing the case and producing an agreement (where possible) is an important one. It is meant to be a constructive and co-operative process…"

CPR Part 35.12 provides that:

'The court may, at any stage, direct a discussion between experts for the purpose of requiring the experts to—

(a) identify and discuss the expert issues in the proceedings; and
(b) where possible, reach an agreed opinion on those issues.

The court may specify the issues which the experts must discuss.
The court may direct that following a discussion between the experts they must prepare a statement for the court setting out those issues on which –

(a) they agree; and
(b) they disagree, with a summary of their reasons for disagreeing.

The content of the discussion between the experts shall not be referred to at the trial unless the parties agree.

Where experts reach agreement on an issue during their discussions, the agreement shall not bind the parties unless the parties expressly agree to be bound by the agreement."

I cannot emphasise enough how two impartial delay experts can be of great assistance to a court or tribunal in narrowing issues and summarising the basis of differences that remain. A constructive joint statement or statements is particularly important when it comes to analysing delay, because there is often a substantial amount of information to consider, and judges/arbitrators often do not have the time or resources available to undertake an in-depth analysis of such large volumes of data without the assistance of the experts.

In *Mayr*[34], Mr Justice Males said:

'Nobody involved in litigation in this court, whether as client, lawyer or expert, can be in any doubt that the court expects and requires the experts at the joint meeting to take a constructive approach, discussing the contents of their report and the issues on which they are required to express their opinions, reaching agreement where they can and setting out concisely where they cannot reach agreement and why they cannot.

It is the experts' responsibility to agree the content of the joint memorandum. This is part of their duty to the court as independent experts and is the basis on which the court gives permission for expert evidence."

Failure to engage properly in the process is likely to lead to adverse comments. In *Bank of Ireland*[35], Coulson J criticised of one of the experts for failing to do so:

'I consider that [his] approach was thoroughly unreasonable. The agreed note demonstrated that he made no concessions at the experts' 'without prejudice meetings', using them instead—quite deliberately—to raise entirely new matters with his opposite number … I observed at the outset of the trial that I had never seen a Joint Statement between experts that contained no agreement at all. I find that the main reason why the Joint Statement in this case contained no such agreement was due to [his] complete failure to make any concessions at all."

[34] *Mayr & Others v CMS Cameron McKenna Nabarro Olswang LLP* [2018] EWHC 3669 (Comm)
[35] *The Governors and Company of the Bank of Ireland & Anor v Watts Group PLC* [2017] EWHC 1667 (TCC) at [67]

Similarly, in *Mirant*[36], Toulmin HHJ said:

> *'Under the sophisticated procedure developed by this Court …, the experts are required in advance of a trial to co-operate to the greatest possible extent in agreeing a methodology and in understanding and commenting on each others' reports so that they are able as far as possible to reach agreement or narrow issues so that only those matters in real dispute are put before the Court for decision. Although the experts made some attempt to have meaningful discussions, this did not happen to a sufficient extent. It was a considerable disadvantage to me that [Mirant's expert] refused to discuss [Arup's expert's] report in detail. Had he done so in advance of the hearing, he may well have continued to disagree fundamentally with the principles on which it was based, but I am confident that he would have been able to reach a measure of agreement on a number of important factual matters in the report which had to be investigated in oral evidence."*

Compare those cases to what Mr. Justice Ramsey said in *Bluewater*[37]:

> *'Through a series of Joint Statements the quantum experts were able to narrow many of the disputes which were apparent on the pleadings. Where they were unable to reach complete agreement that was often because of issues of principle which I have had to resolve and, in these cases, they were able to provide a range of agreed figures which applied depending on my findings. They have made my task immensely easier than it might otherwise have been and I am very grateful to them for their hard work and sensible approach."*

Although Ramsey J was referring to the quantum experts, the approach taken by them could equally apply to delay experts.

In an effort to improve the quality of joint statements, the Academy of Experts published its 'Form & Content Joint Statements Guidance for Experts' on 4 November 2021. This publication is approved by the Judicial Committee members, which include eminent past and present members of the judiciary from the UK, Singapore, and Hong Kong. All experts would be well advised to familiarise themselves with this guidance note.

The art of explaining a complex factual matrix in simple terms

In all but the simplest of cases, a delay expert will need to assimilate a large volume of information and produce analyses and opinions which are presented in a way that is intelligible and attractive to a judge or arbitrator who may be unfamiliar with delay analysis techniques. The art of drafting concise and clear conclusions from large and complex data sets is a skill in itself. Failure to do so puts an expert's opinions at risk of rejection.

In the Australian case of *White*[38], which I have already referred to, Hammerschlag J concluded as follows before proceeding to reject both experts' opinions:

> *'The expert reports are complex. To the unschooled, they are impenetrable."*

In another Australian case, *Allmore*[39], which was heard in the State of Victoria, the judge concluded that:

> *'Overall, I found the evidence of both programming experts to be highly technical and very difficult to understand."*

[36] *Mirant Asia-Pacific Construction (Hong Kong) Ltd v Ove Arup & Partners International Ltd* [2007] EWHC 918 (TCC) at [592]
[37] *Bluewater Energy Services BV v Mercon Steel Structures BV & Ors* [2014] EWHC 2132 (TCC) at [39]
[38] *White Constructions Pty Ltd v PBS Holdings Pty Ltd (and Another)* [2019] NSWSC 1166 at [22]
[39] *Allmore Constructions Pty Ltd v K7 Property Group Pty Ltd* [2016] VCAT 1770 at [144]

Compare those two cases to another Australian case, *Kane*[40], which was heard by the Supreme Court of Victoria, where Warren CJ concluded this in relation to Kane's delay expert evidence:

> *'Having had the opportunity to read and observe the evidence given by [Kane's delay expert], I conclude that it was appropriate expert evidence and that his methodology was sufficiently explained to enable the Court to assess and test it."*

Conclusions

Drawing the threads together, I submit that courts and tribunals want delay experts who:

1. Understand their role, comply with the rules, and guard their independence.
2. Provide objective, unbiased opinions on matters within their expertise, and do not stray outside of that expertise.
3. Are aware of the contractual and legal background of the case to ensure that analyses and concluded opinions are relevant to the issues.
4. Take account of both parties' cases, avoid taking a position on disputed fact or law and take account of any material facts that might detract from a concluded opinion.
5. Provide alternative opinions where issues exist in fact or law that may impact upon the causes and effects of delay.
6. Where necessary, clearly state any assumptions upon which an opinion is based and, if there is insufficient data to reach a firm conclusion, identify opinions as being provisional.
7. Seek to reach an early agreement on matters such as form of analysis, the baseline schedule and key updates, the critical path (or paths) and the sources of key data.
8. Do not become entrenched in their views if further legal argument or evidence requires opinions to be reflected upon.
9. Take the joint statement process seriously, by constructively seeking to narrow issues between the experts, explain why differences remain, and work together to summarise the various analyses and opinions that might apply depending upon the findings of the court or tribunal.
10. Generally make the job of the court or tribunal easier in determining the outcome of a case by producing clear, logical, sensible, and easily comprehendible analyses and opinions reflecting the relevant issues that require resolution.

If you require any further information, please contact Mark Dixon at markdixon@hka.com.

[40] *Kane Constructions Pty Limited v Cole Sopov and Others* [2005] VSC 237 at [602]