

**QSRA: Introduction for risk/planning professional
and decision-makers webinar
Question and Answers
Thursday 14 March 2019**

Questions	Answers
Do we need a detailed cost loaded programme for QSRA or cost elements are not reviewed in detail ?	Only when considering an integrated cost and schedule QRA. A QSRA can be run on without the cost elements to demonstrate schedule impacts only.
Is QSRA only of value if you can provide the time and resource to do it as described in detail or is a light touch / rough cut ever of value?	A detailed QSRA does take time and effort. However, light touch or rough cut can provide value in terms of assessing schedule quality, potential risks and uncertainties (can help with optioneering and what-ifs). I would stress that it is caveated in that sense.
It would be better to describe uncertainty as a risk with 100% probability, rather than "no probability"	I can agree with that point as this is how cost uncertainty is typically modelled in QCRA's. The presentation with respect to activity uncertainty implies that 'probability' is not required. That is in so much as a probability input value is not required. This is because the activity and the possible business as usual uncertainty (or quasi randomness) will occur. That is the probability is effectively 100%.
How many activities should you put a risk on within Analysis?	Discretionary/Rule of Thumb. The key question to ask when mapping risks is to challenge "Could this activity potentially be impacted by all these considered risks or just one or two?"
How often should a project run QS/CRA? Industry standard?	Typically quarterly once the process has been established. Would tie it into Investment decision timelines and work back from there, to provide confidence and assurance leading up to this decision.
Being new to project risk, any simple reading can you recommend?	Ref. books noted by James in his slides.
Is it better to use absolute or relative impacts for QSRA?	Depends on the risk scenario. Uncertainty often works best with relative and risk with absolute.
What about QSRA in EPCM projects? What are the main risks that we need to define?	Don't see it any differently in my opinion. There are still significant design, procurement, construction and commissioning risks to be considered in terms of schedule impact and uncertainty.
When modelling a 10k line schedule down to 500 lines for QSRA, does this introduce risk in its self, in terms of minimising such a large data set to in essence simple parts?	It does present additional risk in terms of quality base data. Critical that any schedule that has been reduced in content, is agreed and signed-off with PM, Planner and Risk Professional to agree that it suitably reflects the project position prior to commencing the modelling.

<p>Are there different levels of undertaking a QSRA - especially in a small organisation where the PM, scheduler and risk manager are all and the same person?</p>	<p>In addition to response to Q2 and as mentioned on the webinar, it is key to outline roles/responsibilities and challenge bias throughout if this is the case. QSRA's provide great value if they are done by someone independent from the schedule/scope and who are able to challenge and ask the awkward questions to tease out risk scenarios.</p>
<p>What do you consider to be the most appropriate means of dealing with low probability, high impact (LPHI) risks for QRA. I've seen it argued previously that these should be considered for exclusion due to the skew/effect they can have on model tails (e.g P90).</p>	<p>Simplistically, model the QSRA with and without them to see the difference/impact on the tail. Often Pnumbers lower than P90 will be discussed with mgt, so would include them so they are at least considered.</p>
<p>Knowing that 90% of management do not understand what you are talking about but "don't know what they don't know" and will not admit they don't know, How are you going to get this knowledge into them? You talk around CPM rules but do not actually state that CPM rules must be followed even though scheduling software allows and promotes getting around these rules with shortcuts? When you are risking the schedule have you time phased the schedule with your timelines, or are you not running timelines through commissioning?</p>	<p>Answer only in ref to point 1...as mentioned in the Webinar, it is key to present mgt with the necessary scene setting. "Here's your schedule you're used to seeing, we've modelled risk and uncertainty and this is the potential impact/drivers..."</p>
<p>How are you risking "soft" issues into the schedule or QSRA? (by soft issues I mean Leadership, Capabilities, mindsets, attitudes and behaviours)</p>	<p>Model as What-ifs scenarios and Challenge bias.</p>
<p>How do you make the challenge/review process more objective to reduce bias, i.e. using data?</p>	<p>Simplistically, ask the 5 whys and never take the first answer as the right answer. Gain input from different parties to challenge throughout.</p>
<p>Are there examples of how AI is being applied to QSRA?</p>	<p>We have used QSRA to inform BIM and 3D models to challenge build methodologies.</p>

<p>Any guidance on creating a high level networks and which activities to select to be included? Would using the critical path and near critical path activities be good practice?</p>	<p>All activities should be considered...would start with the typical project lifecycle stages and break out from there the right level of detail. Using Critical path or near CP, could help but presents risks with not appreciating that a risk impacts significantly off CP and makes something critical...</p>
<p>How do you recommend incorporating uncertainties (as against risks)?</p>	<p>By assessing uncertainty of activities in the schedule, prior to mapping risks against those activities.</p>
<p>Isn't QSRA one-dimensional - what about risk of costs, specifications, etc?</p>	<p>As part of an Integrated QRA or separate QCRA.</p>
<p>For small projects with no risk manager, how would the PM apply this?</p>	<p>By following the outlined process in James' slides that are fit for purpose. Involve Planning, SMEs etc to challenge uncertainties and risks.</p>
<p>How does the QSRA model work when one project impacts another? For example, a software platform upgrade that has to occur before the development can be implemented? We can develop in a sandbox as a mitigating factor but if the development and production platform are not ready in time, it is all for naught and there is a delay - which we can anticipate but that is all.</p>	<p>You would model the impact of this project as a risk and map it against the relevant activities it may delay or impact.</p>
<p>Which P numbers we chose for TRA to allow in schedule?</p>	<p>Depends on the client/project. General rule of thumb is to use a higher Pnumber (P80/P90) in Concept and reduce down through DD and Procurement as scope becomes more certain leading to a Pnumber of around P50 at Construction phase.</p>
<p>How do you mitigate uncertainty with expected value risk analysis?</p>	<p>You'll struggle unless you have expressed the uncertainty as a risk.</p>
<p>In terms of risk distribution, is there a preference/ guideline?</p>	<p>Depends on the risk scenario. Start with min and max impacts first, and if a most likely can be applied then use 3 pt, if not use 2 pt. As mentioned on the webinar, confidence in this distributions will determine whether to use Triang (less confident), Pert (increased confidence around ML number) or Trigen (reducing potential bias or doomsday Min/max estimates)</p>