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How to Write – Promulgate Domain-Specific Guidelines for Analyses Supporting Risk Management? Seven Big Questions

Applied Risk Management Specialty Group

SRA Webinar, September 13, 2017

- We are embarking on a project to write – promulgate domain-specific guidelines for analyses supporting risk management. => **Daunting Issues.**
- This webinar is actually going to be a workshop. We've framed "Seven Big Questions," and we'll simply step through each question, commenting a little then asking for ideas **FROM YOU.**
- We'll process the results of this webinar/workshop, then come back in December at our Roundtable (Tuesday 3:30) for another pass at the project.
- Let's be as thoughtful as possible about how we press forward. Let's frame our work in terms of what we want to accomplish:

Mission Statement

**To push the world as far as possible toward a world
where all analyses supporting risk management
are of at least adequate quality.**

Qualifiers:

- 1) “as far as possible” given the tools and authority
(or lack of same) available to us. (But we can create tools!)
- 2) “adequate quality” is a key concept to define, and we will.

The Mechanics:

Our Mission is absurdly grand.

We operationalize our first steps, in this webinar,

by asking and seeking answers to Seven Questions:

The Seven Questions (pursued over the next several slides)

- Q1. How do we push the world as far as possible toward a world where all analyses supporting risk management are of at least adequate quality?
What tools? What strategies? Leads to six further questions:**
- Q2. How do we define “adequate quality”?
Careful, there – any definition has strategic implications.**
- Q3. What should our guidelines specify about decision criteria coming out of analyses supporting risk management? Examples:
- “Bright Line” (do this don’t do that) versus “General Guidance” (apply as you see fit)
- “Checklist-like” versus not.**
- Q4. We want a “Culture of Analysis Quality,” in each application domain, where practitioners, clients and users all care about and insist on analysis quality.
How do we nurture that culture, bring that culture into reality?**
- Q5. Do we even want to use the word “enforce”?
More generally and more to the point: How do we best get any guidelines complied with?**
- Q6. How should any guidelines be promulgated? Posted?
Sent to ... where? Journals? SRA website? Agencies?**
- Q7. What is the best way to get these guidelines written?**

Five Points Before Addressing the Questions

- **Looking at those Seven Questions, it is clear that we can't get through them all, with adequate discussion, in the course of this one-hour webinar. But we will attempt to get enough of a start on each Question to get everyone's thoughts churning, and in the hope that you will follow up with us with follow-on thoughts in the next week or so, at jlathrop@innovatedecisions.com.**
- **We define "domain-specific" as specific to a field of application such as terrorism risk management (RM), health RM, or financial RM.**
- **We propose that the development of the guidelines be a joint effort of the SRA's Applied Risk Management Specialty Group and the Foundational Issues in Risk Analysis Specialty Group, in collaboration with all the other SRA Specialty Groups.**
- **None of our thoughts on any of this are gelled at all yet.**
- **We need all the help we can get.**

Q1. How do we push the world Page 1 of 2

as far as possible toward a world

where all analyses supporting risk management are of at least adequate quality?

What tools? What strategies?

- **Too many standards/guidelines simply sit on shelves. What are non-shelf-sitting strategies?**
- **<<The rest of this slide left blank for discussion.>>**

Q1. How do we push the world Page 2 of 2

... as far as possible toward a world

where all analyses supporting risk management are of at least adequate quality?

Ideas:

- **Published guidelines, arranged (somehow) such that any analysis reports can be readily evaluated against those guidelines(?)**
- **Rules for journal referees, with journals strongly encouraged to insist that referees specifically and mechanistically test submitted articles against those rules? Then those journals “authorized”(?) by SRA to include a statement something like “This journal complies with SRA risk management analysis guidelines.”**
- **Specific SRA processes to review, and enforce the reviewing of, in Third Party Review form, as many major risk management analyses as possible? Perhaps as “Stellar Examples”?**
- **Publicize examples of good and the bad analyses?**
- **Seek out ways to publish directives like DOD Instruction 5000.61, specifying that any analysis advising any significant decision be reviewed in a particular way. That applies to DOD, but similar documents could apply to other government agencies.**
- **A “Baldrige-like Award” (much more tightly focused) for risk management analyses? OK, so that may be over the top, A Bridge Too Far, but let’s think big. But realistically.**

➤ **What ideas are we missing, here?**

Q2. How do we define “adequate quality”?

Careful, there – any definition has strategic implications.

As one basis for this discussion, here is one “Table of Contents” of a “Guidelines” we are toying with (1st of 2 slides, the same as the one-page handout):

Issues with data

Data sources. Completeness of sources. Consideration of multiple data sources.
Process by which assure that the best feasibly available data was used.
Data quality, including subject matter experts and their elicitations.
Data shortfalls. Implications of those shortfalls.

This is a
Boolean Union
of all of the
shortfalls
we've seen

Issues with technical assessment

Should a guideline list the specific analyses that are considered acceptable in the domain,
or would that be too restrictive?
List the specific shortfalls/challenges of the analyses of that field of application,
then explain how each of those shortfalls/challenges should be addressed.
List standards for how each of those shortfalls/challenges should be addressed.
Completeness and imagination, including addressing scenarios “not on the list.”
Resilience.

Issues with uncertainty (other than issues of completeness, imagination, resilience)

Clarity on what we don't know and/or can't know, and the implications of that.
The uncertainty that the model(s) assumed/used are incorrect, and how so and to what degree.
Then the implications of that uncertainty.
Handling and analysis of uncertainty.
Communication of the uncertainty and its implications.

Q2. How do we define “adequate quality”?

Careful, there – any definition has strategic implications.

As one basis for this discussion, here is one “Table of Contents” of a “Guidelines” we are toying with (2nd of 2 slides, the same as the one-page handout):

Issues with the process framing the technical assessment

Setting the scope and presenting the implications of that scope.

Selecting the assumptions and presenting their implications.

Verification.

Validation.

Third Party Review, at any of several possible levels.

Addressing scenarios “not on the list.”

Engagement with the risk management decision process and stakeholders

Alignment with the needs of the users and stakeholders.

Form of decision advice, ranging from “bright line” do/don’t, to general guidance.

Basis upon which that form of advice should be chosen.

Transparency / Full Disclosure.

Effective communication of results and caveats to the decision makers and stakeholders.

Effective communication, back and forth, between analysts and decision makers,

and between analysts and stakeholders,

re values, concerns, uncertainties, assumptions, data shortfalls and analysis shortfalls,

and the implications of all of those.

Issues of political effectiveness.

Issues of trust.

This is a
Boolean Union
of all of the
shortfalls
we’ve seen

Q2. How do we define “adequate quality”?

Careful, there – any definition has strategic implications.

Whoof! Two pages are too hard to review, so here’s a one-page summary
(and it’s on your handout):

Issues with data

Issues with technical assessment

Issues with uncertainty

Issues with the process framing the technical assessment

Engagement with the risk management decision process and stakeholders

- Is this the right level upon which to define “adequate quality”?
- What have we left out?
- Is this hopeless at this level,
since each application area will have such different attributes of adequate quality?
- Should we just punt this issue,
pitching it back to each application area, as known by each Specialty Group?
- **What ideas are we missing, here?**

Q3. What should our guidelines specify about decision criteria?

... coming out of analyses supporting risk management? Examples:

- “Bright Line” (do this don’t do that) versus “General Guidance” (apply as you see fit)
- “Checklist-like” versus not.

Scott Braley: You raised this issue, concerning implementation
– did we get it right?

- Note the subtle(?) shift, here, from guidelines for analyses supporting risk management to guidelines for deciding if a risk is acceptable or not (more narrowly than those grand discussions about “Acceptable Risk”).
- But that’s not an error. What we are addressing here is the fact that in many cases (all cases?) “analyses supporting risk management” are in fact analyses supporting decisions on what risk management actions to take and so, yes, involve at some level,
 - “Bright Line” distinctions between what needs to be done based directly (automatically, untouched by human hands) on analysis results,
 - VERSUS “General Guidance” recognizing that situations may differ in ways not capturable by direct analysis results, so calling for human judgment,
 - VERSUS a checklist system, which may come down on either of those two extremes.
- Are there general principles we can develop to guide us re which version of guideline to use?
- Or again, should we just punt this issue, pitching it back to each application area, as known by each Specialty Group?

➤ **What ideas are we missing, here?**

Q4. How to Promote a “Culture of Analysis Quality”?

- **“Culture of Analysis Quality” in each application domain, is a culture where practitioners, clients and users all care about and insist on analysis quality. Fine, but how do we nurture that culture, bring that culture into reality?**
- **From experience, it is often the case that clients, at least those in government agencies, may be indifferent to, or simply unaware of, issues of analysis quality, and may be unwilling to fund improvements in analysis quality.**

Ideas:

- **All of our responses to Question 1 apply here, though those are focused on analysis quality as opposed to a Culture of Analysis Quality.**
- **Though some of those measures, including active promotion of Third Party Reviews, and new versions of DOD Instruction 5000.61, would have the effect of promoting a Culture of Analysis Quality.**
- **Simply publish pithy and effective language in every edition of Risk Analysis and similar journals (e.g. Reliability Engineering and System Safety, and Safety Science), up front, promoting a Culture of Analysis Quality.**
- **What ideas are we missing, here?**

Q5. Dare we use the word “enforce”?

- **More generally and more to the point:
How do we best get any guidelines complied with?**
- **One could argue that many of the ideas listed here for Question 1,
that have the effect of simply bringing public attention to bear on analysis quality,
could have the effect of enforcement, as much enforcement as we could hope for.**
- **Reviewing the more applicable ideas re Question 1:**
 - **Published guidelines, arranged (somehow) such that any analysis reports
can be readily evaluated against those guidelines(?)**
 - **Rules for journal referees, with journals strongly encouraged to insist that referees
specifically and mechanistically test submitted articles against those rules?
Then those journals “authorized”(?) by SRA to include a statement something like
“This journal complies with SRA risk management analysis guidelines.”**
 - **Specific SRA processes to review, and enforce the reviewing of, in Third Party Review form,
as many major risk management analyses as possible? Perhaps as “Stellar Examples”?**
 - **Publicize examples of good and the bad analyses?**
 - **Seek out ways to publish directives like DOD Instruction 5000.61, specifying that
any analysis advising any significant decision be reviewed in a particular way.
That applies to DOD, but similar documents could apply to other government agencies.**
- **What ideas are we missing, here?**

Q6. How Should Any Guidelines be Promulgated?

- Most obviously, we should publish them every possible place on the SRA website and associated websites.
- We could also seek ways to have our guidelines texts found directly by Google (and other) search engines
- We anticipate that each Specialty Group will have, could have, its own guidelines, and in many cases different guidelines for different areas of application within some Specialty Groups.
That suggests places for guidelines within each Specialty Group's website.
- We could approach every appropriate journal (again e.g., Risk Analysis, RESS, Safety Science) and ask that our guideline texts be published in prominent positions in those journals' hardcopies and websites, and also published in their sections on:
 - "Guidance for Authors"
 - "Guidance for Referees"
- **What ideas are we missing, here?**

Q7. How Best Get These Guidelines Written?

- **Clearly, Guidelines must be written by specialists in each area of application. Those specialists reside within each SRA Specialty Group.**
- **So clearly, Guidelines must be written by each Specialty Group, of those SGs that agree to participate.**
- **But then, we want those Guidelines to all comply with a single particular scope, format, table of contents, etc., though of course we should say “meta-scope,” “meta-format” and “meta-TOC” since we are sure that Guidelines will differ substantially in scope, format and TOC across different areas of application.**
- **Those points suggest the following steps (just suggestions) on the next slide:**

Next Steps:

- As mentioned earlier, we are sure that participants will have follow-on thoughts, and will send them to us at jlathrop@innovatedecisions.com
- We (the Applied Risk Management Specialty Group), in consultation with the Foundational Issues in Risk Analysis Specialty Group, will process the results of this webinar into suggested first-draft “Guidelines for Writing Guidelines” (sorry) and send those to each Specialty Group Chair.
- We will also process the results of this webinar into the program for the Roundtable on this topic we have scheduled at the Annual Conference, Tuesday 3:30–5:00.
- Then we will run the Roundtable as a next step in planning for writing the Guidelines.
- In parallel with all of that: We will start a dialog with the Specialty Group Chairs, probing how each Chair will be willing to orchestrate efforts within his or her Specialty Group along the lines suggested in this webinar. That will be the opposite of a “top down” approach. It will be a “What do you think? How can you help?” approach.
- Some have suggested that we fund research into all of the many existing relevant standards. Would that be a good idea?

➤ **What ideas are we missing, here?**

- **As should be clear, this is a huge and daunting undertaking.**
- **Not to mention that it takes volunteer efforts, with all the calendar consumption that always, understandably, entails.**
- **Not to mention that this will be very much a Learn – As – Go project at two levels:**
 - **Learning the best ways to write the Guidelines**
 - **Learning (much more slowly) any relationships between our answers to The Seven Questions and the real-world effectiveness of any Guidelines.**
- **That all adds up to a multi-year effort, though with encouraging progress each year.**
- **So we will do our best to pursue a program that sets and accomplishes realistic milestones at a realistic pace. Not a bad idea to orient those milestones around each annual SRA conference, though with intermediate milestones during the year.**

Then to recap two key points from an earlier slide:

- **None of our thoughts on any of this are gelled at all yet.**
- **We need all the help we can get.**