



President's Message by Ellen Coopersmith



Hi Folks,

As I begin this next year as your SDP president, I reflect on how we got here, who we are now and who we want to be. I am one of the original "Decision Analysis Affinity Group", or DAAG, members and as such, believe I have a unique perspective. I am happy and proud of SDP and what has evolved from our first DAAG meeting hosted by Eli Lilly almost 25 years ago. It makes me smile at what has grown from an informal gathering of likeminded individuals passionate about Decision Quality. We have grown into an expanding society of lifelong friends and colleagues, who together want to impact not only their own organizations and lives, but affect a broader swath globally. We come together with a shared belief and passion for DQ and amazingly, as a predominantly volunteer and virtual society, continue to grow and impact, in small important ways, the rest of the world.

Heartfelt Thanks

So, where are we and how will this term's SDP board and councils work with you to continue to spread Decision Quality across the globe? First, we will thank those who got us here. Six SDP presidents and a cadre of SDP council leaders and council members, along with Hilda Cherekdjian, SDP Executive Director, set up the organization and laid the foundation for what we are now able to do. Our president legacy includes Carl Spetzler, who guided us through the formation of SDP; Frank Koch and Jim Felli, who worked hard to merge "the old DAAG", with the new SDP; Bill Klimack and Jack Kloeber, who ensured we have policies, procedures and transparency to manage the society, and Larry Neal, my direct predecessor, who launched our strategic plan.

Our gratitude is incomplete without a heartfelt thank you to our council leaders, past and present, and the council members who truly are the underbelly of the organization. All we do and touch as a society is a result of our councils. We cannot thank you enough! If you are not on a council, I urge you to join one whose mission moves you. To that end, you can learn more about the councils at <http://www.decisionprofessionals.com/about/governance>.

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Chapters

A few years ago, SDP was instrumental in getting DQ minded folks to start meeting regularly in both Houston and London to share knowledge and support each other as they implement aspects of Decision Quality, work on local projects of interest and build awareness. Last year, the Houston group became SDP's first chapter. They've grown and accomplished some impressive things, which I hope you will read about in another article in this newsletter.

I see local chapters as key to SDP achieving sustainable growth. They are the mechanism to develop local communities of practice and impact local organizations. Why? They meet regularly, not just annually, they tackle local concerns and eventually they will be able to coordinate and host local DQ events. The board and I feel so strongly about developing SDP chapters that we have named a liaison this year, Laura Keating, to work with the BD council and local contacts around the globe to develop a strategy and procedures to start more chapters, and ensure that there are clear benefits to being an SDP chapter. Calgary is on the horizon for this year, so watch this space...In the meantime, we hope that you will contact Laura with an interest for your region.

Strategic plan

As I mentioned, our past president Larry Neal worked with a core group of individuals from SDP to develop our first strategic plan, which was presented to the board at the end of his term in June. At a high level, that plan will guide us toward the next phase of SDP's future as an organization. Is the plan fully baked with all the details yet? No. However, the plan for this year is for the board to build out the next level of detail working with the councils. In the meantime, Larry and I plan to roll out the strategic plan to all of you in the SDP organization via our first Town Hall as a Society. We will get back to you with the exact date and details, but are hopeful you will join us and share your thoughts.

Warm regards!

Your colleague, Ellen M. Coopersmith



**SOCIETY OF DECISION
PROFESSIONALS**
Clarity & Insight for Decisive Action

- DAAG 2018 – SAVE THE DATE
Coast Coal Harbour Hotel
Vancouver Canada
April 11 - 13, 2018
- **Upcoming Events**
 - [Webinar: Multi-Criteria Decision Analysis \(MCDA\) in Healthcare: Current Applications and Ongoing Challenges](#) Thursday, August 24, 2017, 8 am PT | 11 am ET
 - Houston Chapter – [DIKW Pyramid](#) September 7, 2017 3:00-5:00 PM Central
 - Houston Chapter – [Operations Decisions](#) October 5, 2017 3:00-5:00 PM Central



[39th Annual North American Meeting](#)
October 22-25, 2017
Pittsburgh, PA

Do you know of upcoming professional events that might be of interest to other SDP members? If so, please email the SDP newsletter at newsletter@decisionprofessionals.com



SDP Council in Focus: Knowledge Sharing Council

by Jim Weller

The Knowledge Sharing Council's (KSC) mission is to enable and promote knowledge sharing, not to own all aspects of knowledge sharing. In 2017, the KSC focus is to:

- Promote the culture of sharing and attribution
- Create actual and virtual forums to facilitate sharing
- Make the SDP content easier to find, while assisting in growing the content

With the 2017 focus, the KSC has enhanced the value of your SDP membership by delivering:

- **Decisionpedia** - all SDP knowledge content at your fingertips, accessible via a simple point-and-click drill-down by topic to find or discover the content you need. To benefit DA professionals of any skill level, each topic includes a definition and links to subtopics, library resources, applications in different settings (e.g. energy, health care, government), and training courses.
(<http://www.decisionprofessionals.com/library/DecisionPedia>)
- **DAAG talks by year** - DAAG presentations from 1998 – 2017 for which SDP has permission to share with its members have been loaded and can be found by year.
(<http://www.decisionprofessionals.com/library/DAAG-Talks>)
- **Fellows Blog** – wisdom shared from the minds of our esteemed SDP Fellows, with a quarterly thought-provoking DA-related article, a survey compiled SDP Fellows favorite books for own use and favorite books to give a client.
(<http://www.decisionprofessionals.com/?scrollTo=library#blog-news>)
- **Search Library** – an enhanced search with pull-down by topic, industry, or source (e.g. webinar recordings, publications, etc.), in addition to keyword search.
(<http://www.decisionprofessionals.com/?scrollTo=library#library>)
- **Interest Groups** – The KSC encourages forming new interest groups for SDP members around a topic to actively share and learn from other members. The first such interest group for Scenario Analysis was recently formed and has started off well. More interest groups are anticipated to form.
(<http://www.decisionprofessionals.com/library/Scenario-Analysis>)

The KSC volunteer members are Tim Nieman, Eric Johnson, Hilda Cherekdjan, Amy Stranieri, Robert Hammond, and Jim Weller (council chair). To join the KSC, contact Jim Weller.





Spotlight on SDP Member Frank Koch

In every issue of this newsletter, we turn the spotlight on a randomly-selected member of the SDP to learn more about that member's life as a decision professional.

The editors



Frank Koch is a founding member and past-president of SDP. He started his career as a development geologist at Chevron, where he had to learn to be comfortable working with huge uncertainties regarding conditions deep within the earth – conditions about which you could never know for sure if you're right or wrong. Four years into his career, he was moved into the position of economic evaluation geologist where he had to run cash flow analyses to determine whether or not it made economic sense to drill exploration wells in the search for new oil and gas fields. Despite working with what now seems primitive technology (programming in FORTRAN using punch cards), Frank discovered that he enjoyed doing the economic analysis more than straight geology. But when he delved into the method that Chevron used at that time to handle uncertainties in the economic analysis, he encountered something that made no sense to him. He was analyzing a field with multiple targets having different levels of risk. His analysis of the primary targets resulted in a certain dollar value for the field. But when he added an optional marginal target within the field, the analysis, which used a weighted-average of the risks per the existing Chevron practice, indicated a lower value, not higher as he expected. Frank devised a probability-tree approach which produced results that made sense to him and, with some effort, got Chevron to adopt that approach as the official way to evaluate multiple risks.

Later, Frank moved into a position in the corporate analytic staff that involved providing analytic evaluations of proposed major investments for executives at the very top of the corporation. Here again, he discovered that the analytic methods used by Chevron to handle uncertainties in these evaluations were flawed. At about this time (1989), Dave Macway and Bruce Judd from SDG taught the first decision analysis class at Chevron. This was the start of a major transformation in the way important decisions were made within Chevron and Frank was a central participant in that transformation, ultimately serving as the leader of Chevron's Decision Analysis Practice for many years. The success of that transformation has been attested by Chevron winning the first Raiffa-Howard Award for Organizational Decision Quality in 2014.

Frank is now retired from Chevron and finds great joy in teaching teenagers how to make better personal decisions through a Decision Education Foundation program.

The greatest satisfactions that Frank experienced as a decision professional came from being able to affect really important decisions within a large corporation. He recalled many times sitting in meetings with top executives, all of whom greatly out-ranked him, and having the CEO turn to him and ask, "What do you think, Frank?"

Among the biggest challenges that he faced as a decision professional were two – one early in his career and one toward the end. The first was how to "get a foot in the door" to get people to pay attention to a better way of making decisions. The second was how to institutionalize the successful implementation of the decision quality approach within Chevron so that it would not die when its champions retired. He is happy to know that, thanks to the efforts of Larry Neal, Brian Putt, and others, a full career path has been established within Chevron for decision professionals.

Frank believes that membership in SDP provides the ability to network with other decision professionals, learning and sharing with them. He would like to see SDP promote new ways to do things with a wider range of analytic tools.



Dear SDP Fellows: We need to develop a 5 year strategy for a client in an external context of high uncertainty and hence the importance of using scenarios. Also, an influence diagram is key because of the multiple drivers of value that need to be modeled. My question: When developing an influence diagram and using scenarios, how should I determine which uncertainties to treat within the influence diagram and which to consider as candidates for the axes of the scenario framework?

The idea of scenario analysis is that "the world looks different" depending on which scenario you are in, i.e., broad global impact. There are two ways you could identify an uncertainty around which to build the scenario:

- If an uncertainty in the Influence Diagram is the predecessor of many other uncertainties, you could use it.
- If the evaluation logic has a lot of conditioning on a variable ("If variable X is ___ then ___ else ___"), you could use it.

Ellen Coopersmith addresses the requirement of broad global impact by distinguishing "internal" variables from "external" ones, where internal variables are "part of the system" and external variables are "outside the system". If these definitions make sense in your context, you should build your scenario around one or more external variables. She recommends picking the two most influential external variables, dichotomizing them, and then you have four scenarios that fit in a nice consultant's 2x2 box.

The situation is described as having multiple drivers of value in a context of high uncertainty. A Tornado Diagram can help narrow the focus to a few key uncertainties as the candidate parameters to use in a classic 2x2 scenario exercise. But, using the uncertainties as they are defined in the influence diagram may not lead to the potential of a scenario development exercise.

In an influence diagram, an uncertainty is usually defined within the context of the business, e.g. price uncertainty. For scenario development, it may be better to explore the macro influencers on future prices, e.g. forces behind supply and demand, which leads to a discussion of macro trends and potential events. These broader, external forces behind a key uncertainty may be more productive for scenario development.

An alternative approach to scenario development can leverage the objectives hierarchy tool. In defining and structuring the interplay of objectives, the participants are already 5-10 years into the future thinking about the outcomes that will be measures of success or failure for their business.

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If you have a question for the SDP Fellows about good practice among decision professionals, please send it to us at [SDP Newsletter: Ask The Fellows](#).



Ask the Fellows, continued from page 5

Exploring the possible extreme outcomes for objectives and the materiality for the business can help a team understand which of them may be fruitful to use in Scenario Development. Decision analysis tends to focus on the top of the Objectives Hierarchy, i.e. quantifying NPV or Shareholder Value for strategies. However, it can be the items at the bottom of the Objectives Hierarchy that are critical to the future of the business. By definition, the higher level objectives depend on the contributing objectives at the bottom of the hierarchy.

For example, in a capital project the community acceptance of a new facility may be necessary for timely permitting. Getting the permit will drive the timing of construction, etc., etc. up to achieving your operational metrics, revenue and return on investment. This sequence moves up the Objectives Hierarchy from the external factor to the business results. Exploring scenarios with community receptivity versus community resistance as a key parameter would be suggested by this approach.

The other factor in the 2x2 scenario tool should be quite independent of the first parameter to get the full benefit of exploring possible futures. If it is subject to the same external macro influences, then you really do not have two dimensions in your scenario space. In the capital project example, an independent parameter might be a competitive action in the market, or the future state of a constraint in the ecosystem, etc. The key is to explore two independent external macro influences on the future world(s) for your business. Decision analysis has a couple of good tools that can help you find them.

I find influence diagrams particularly useful for scenario work. It is then not intended in the classic sense, i.e. to build a quantitative model with the diagram as a basis. One can use the influence diagram to map out a mix of quantifiable and non-quantifiable (or: external, or: exogenous) uncertainties. It is then used to understand and communicate 'how things hang together' (rather than build a model from it).

Modeling will of course be restricted to the quantifiable variables and uncertainties in play.

For the key driving forces that are important for the scenarios, outcomes must be articulated. Somehow (and this is the scenario thinking work) these outcomes of the different driving forces or uncertainties must be grouped together in a way that 'makes sense'. This can be done in the 2x2 fashion (the deductive approach), but also a more random approach can be considered (the inductive method). It is not necessary to have four scenarios, anything between say 2 and 4, perhaps 5, goes, provided the range of uncertainty is adequately spanned.

Within the context of each scenario, you then take a look at the quantifiable variables and consider if these would assume a particular range of values. If in that way distinctions can be made across scenarios, it is possible to generate different NPV ranges under different scenarios. Of course such quantifications are only indicative, but do make the implications of each scenario a bit more clear.

SDP Fellows Eric Johnson and Gerald Bush contributed to answering this month's question. In addition, Henk Krijnen, leader of the SDP Scenario Analysis Interest Group, also contributed.

SDP's Houston Chapter Celebrates Its First Anniversary

by Ahren Lacy (Outgoing SDP Houston Chapter President)
and Matthias Stein (Incoming SDP Houston Chapter President)

"What value do you get out of a local Chapter?" Ellen Coopersmith posed this question at the last Executive Committee meeting of our Houston Chapter of the Society of Decision Professionals (SDP).

The foundation of a profession is people: people who share common principles, who can apply these principles to practice, and who can discern the quality of their application. It is a resource then to have a group of decision professionals not only globally but locally as well, enhancing the Decision Quality (DQ) / Decision Analysis profession specifically in the Houston area.

For several years, like-minded decision professionals from the oil and gas industry had been meeting as the Decision Quality Houston (DQH) group. We shared best-practices and experiences with other practitioners and networked on a regular basis, and we soon recognized the need to establish some formality on how to apply DQ in our industry. In response to that need, a small working team led primarily by Chris Fellows (ExxonMobil) and Pat Burdett (Chevron) developed the technical report titled "Guidance for Decision Quality for Multi-company Upstream Projects", published jointly by SDP and SPE (Society of Petroleum Engineers).

By publishing this report and promoting it through engagements at SPE's Annual Technical Conference and Exhibition (ATCE) and elsewhere, we sought to publicly promote and "bring Decision Quality to important and complex decisions", both within our own organizations and others in our field. The recognition of this common mission with SDP led us to become a chapter.

This month we celebrate our first anniversary as SDP's first chapter. For the last year, we have continued what started as "Decision Quality Houston": we held a general meeting every month that featured a topical presentation given by recognized leaders, distinguished decision quality scholars, and experienced practitioners who apply DQ to their projects. We continued to grow our network, as several new members have joined our executive committee this year. And we kept exploring avenues to grow awareness for DQ as a value-adding discipline, for example by having initiated the Wikipedia article on DQ. Thank you to all of those who brought "Decision Quality Houston" to life and to those who will continue to carry this Houston Chapter forward.

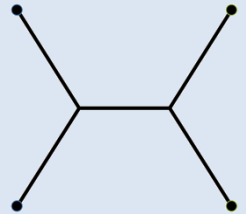
We encourage anyone interested in joining the Houston Chapter or in starting a new chapter to visit <http://houston.decisionprofessionals.com> and to contact one of its leaders. We welcome participants in any industry or area of practice.



Brain Teaser

Congratulations to Simon Stromberg

The correct answer to the brain teaser posed in the June issue is that the minimum mileage road network connecting the four towns could be designed by bumblebees and is 27.3 miles long. A full explanation of the answer can be found by [clicking here](#). Congratulations go to Simon Stromberg for being the first reader to submit the correct answer.



THE AUGUST BRAIN TEASER

Instructions: You can win “bragging rights” by being the first to submit the correct answer of this brain teaser to the newsletter editors ([SDP Newsletter: Brain Teaser](#)). We will announce the winner in the next issue.

Splash-Out

Three contestants A, B, and C are competing in a TV game show called Splash-Out. The three are standing at the corners of a triangle exactly 25 feet from each other. The show’s MC will hand to each contestant in turn a water balloon, which that contestant may throw at one of the others. A contestant is knocked out of the game when hit by a water balloon. The game continues until only one contestant remains; that contestant wins a valuable prize.

The three contestants have vastly different levels of throwing skill. Contestant A is by far the worst - on any given throw, there is only a one-third chance that A will hit his target. Contestant B is much better - on any given throw, there is a two-thirds chance that B will hit his target. And Contestant C is a major league baseball pitcher - C is certain to hit his target on every throw.

The MC has declared that the contestants will be given water balloons in the following order: A,B,C (repeating the sequence as necessary).

Assuming that each contestant acts to maximize his own chance of winning the prize and that they all agree with the probabilities stated above, what is the probability that each contestant will win the prize?

A Word From an SDP Sponsor

In every issue of this newsletter, we include a message from one of the SDP sponsors, whose support contributes significantly to the on-going success of the Society.

Center for Disease Analysis



The Center for Disease Analysis (<http://centerforda.com>) is a public health firm specializing in applying decision analysis techniques/tools to global public health problems. Since 2012, we have focused on hepatitis B & C. Every 20 seconds, someone dies of liver complications associated with hepatitis - more than HIV, tuberculosis or malaria. These deaths are unnecessary because the diagnostic & treatment tools exist today to eliminate hepatitis; yet hepatitis receives a fraction of the global funding. We developed a parametric disease burden model to help countries assess the impact of their national strategies. We have used the model in over 85 countries to support national strategies to eliminate hepatitis. The model coupled with an economic impact analysis shows the cost of doing nothing versus an elimination strategy. Our work has resulted in expansion of treatment from 500,000 in 2013 to 1.6 million in 2016, with over 2 million deaths averted. We have been able to show that there is significant cost associated with inaction and that an elimination strategy will cost less over a 15-20 year period. The Bayesian approach allows us to focus on decisions rather than collecting more data and this has led to action in a number of countries including Egypt, Mongolia, Australia, Spain, and Portugal.

Input data and assumptions were major barriers to decision making. In 2015, we created the Polaris Observatory (<http://polarisobservatory.org>) where data is collected and reported (free of charge) for over 100 countries. The data is updated quarterly and provided through our website. Polaris has become the gold standard for hepatitis epidemiology data and is used by international organizations to report the most up to date global burden estimates.

Finally, the price of the hepatitis drugs was used as a rationale for not providing access. In 2016, we created the CDA Foundation (<http://www.thecdafoundation.org>), followed in 2017 by the launch of the Global Procurement Fund (<http://gprofund.org>). The latter uses pooled procurement to negotiate prices on behalf of its member countries. It has already negotiated prices at a 90% discount over the current prices in high-income countries.

Our goal is simple: use quality decision-making to make the elimination of hepatitis a reality by 2030.

Paul Wicker Certified as SDP Fellow

Congratulations go to Paul Wicker upon his recent certification as a Fellow of the Society of Decision Professionals. Paul works as a Senior Consultant at Decision Frameworks.



Useful Links

The SDP Board has posted the Society's Bylaws and Policy and Procedure Manual, which can be found at: <http://www.decisionprofessionals.com/about/governance>

The SDP Knowledge Sharing Council maintains a Fellows Blog at:
<http://www.decisionprofessionals.com/?scrollTo=blog-news#blog-news>

A listing of courses in decision analysis available to SDP members is at:
<http://www.decisionprofessionals.com/courses/training-program>

Note From the Editors

We hope that you enjoy this fourth issue of the SDP Newsletter. Please do not hesitate to send us constructive feedback. [Click here](#) to email the editors.

Matt Gorman and Steve Tani
SDP Newsletter Editors