



The Society of Cost Estimating and Analysis

The Dayton Coster Greater Dayton Chapter

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2007 - 2008 DAYTON CHAPTER

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President's Message: Ed Weeks

The SCEA Greater Dayton chapter has continued the quest to improve our services to our local members. We have hosted several events over the last several months, to include a joint session with ASMC, where I presented the Air Force's Business Case Analysis process; Mr. Tom O'Hara, from the local Air Force Cost Analysis Agency (AFCAA), on his organization's roles and responsibilities; and, last but not least, Mr. Jay Jordan, the Technical Director of AFCAA, presented an insightful look at the cost estimating profession. In addition to those events, we sponsored several fundraisers, including a Krispy Kreme donut fundraiser, with proceeds going to the Fisher House, and Bowling for Kids' Sake, where over \$1,000 dollars was donated to needy children. We have also had a great turnout at our Member's Mixers. The Mixers are a fun way to give back to our members while providing an opportunity to network and discuss current cost topics. And best of all, it's free! There will be another Mixer this month, so stay tuned!

As you all know, our annual conference is upon us. I would encourage every one to attend if possible. This year's event will be held in conjunction with ISPA at the Pacific Palms Conference Resort in Southern California. It will be jam-packed with valuable training and presentations that will benefit you in your daily work environment. So again, please plan on attending!

As summer draws near, it signals election time for our SCEA Board of Officers. We are looking to fill several positions for next year, to include, Vice President and Secretary. If you are looking for a rewarding

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Upcoming Chapter Events

Membership Mixer May 2008
 SCEA/ASMC Annual Golf Outing June 2008
 Luncheon TBD

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President's Message (continued)

and challenging position in a professional organization, now's the time. Please contact Charlie Kapaku at Charles.Kapaku@wpafb.af.mil if you are interested in running. I guarantee it will be a rewarding experience.

In closing, I would like to thank all of you that participated in our charity events and made them such a success. I would also like to encourage all SCEA members to take a more active roll in our chapter. While your support has been fantastic, the larger the membership that attend our events, the better our chapter will become in supporting what you need in your professional endeavors.

COMMITTEE UPDATES

Upcoming SCEA Elections

By

Charlie Kapaku

Elections for the SCEA Greater Dayton Chapter Vice President/President Elect and Secretary for the 2008-2009 term will be held in May 2008. Nominations are now open. Self nominations are allowed. Nominations need only include the name of the nominee and the position the person is nominated for. Nominations can be submitted to Charlie Kapaku via e-mail at charles.kapaku@wpafb.af.mil or ckapaku@mcri.com. Nominations will close on 16 May 2008.

2008 SCEA Annual Conference

By

Amy Smith

This year's SCEA annual conference is a joint conference with ISPA. The conference will be held June 24—27, 2008 at the Pacific Palms Conference Resort in Industry Hills, California. The theme of this year's conference is "Reliable Cost Estimates—Cornerstone of Management Decisions". For more information, please visit <https://sceaonline.net/events/conference/conferences.cfm?>.

SAF/FMC Cost Chief Conference

By

Scott Boyd

SAF/FMC hosted a Cost Chief conference 6-7 February with representatives from HQ AFMC, AFSPC, AFMC Product Centers, Ogden Air Logistics Center, the AF Center of Expertise (COE), AFIT, and the AFCAA. There was significant discussion on how well AFCAA operating location staff is interfacing with Product Center and Wing cost staff. On-going problems with AFPC and getting timely vacancy fills have slowed implementation of AFCAA operating location work. Much discussion centered on the AFCAA Cost Risk and Uncertainty Analysis handbook and how the AF cost community should move forward in incorporating risk analysis in program cost estimates. SAF/FMC is asking each of the centers to nominate a risk point of contact to work with AFCAA to develop a way forward. HQ AFMC is working with AFIT to develop a training class built around the handbook as well. Other discussion included SAF/FMC's efforts to work with DAU to revamp cost curriculum/certification, the status of AFPD 65-5 and accompanying AFIs, reenergizing data collection/databases, and reestablishing EVM capability across the AF. Great discussion, but it was generally agreed that the community needs to meet more regularly (potentially quarterly VTCs) to enable a coordinated approach to tackling the bigger issues confronting the cost community.

Bowl for Kids' Sake By Eric Nardi

The SCEA Greater Dayton Chapter once again made it out for the annual Big Brothers/Big Sisters Bowl for Kids' Sake event, which took place on April 5, 2008. The date was rescheduled due to inclement weather on the originally scheduled date, March 8. We had five teams turn out to bowl. In total, we raised \$990 for Big Brothers/Big Sisters of the Greater Miami Valley! Many thanks to those who participated, and also to those who were not able to participate, yet still donated. We are looking forward to next year for another great round of bowling.

2008 Participants/Donors:

John Allen, Monica Anders, Shirley Ark, Megan Cherry, Damian Gainer, Theresa Grissom, Chris Hensley, Janet Marshall, Kayla Marshall, Laticia McCurdy, Jeremy Mitchell, Eric Nardi, Teresa Oliss, Kevin Schaeffer, Paul Schaeffer, Jason Scott, James Shaw, Donald Sorrells, Doug Taylor, Linda Turner, Jessica Turner, Steven Turner, Ron Vorhis, Rich Williams, and Dave Wirth



Jeremy Mitchell and Damian Gainer



Steven Turner, Laticia McCurdy, Ernestine (Ernie) McCurdy, Monica Anders, Linda Turner, and Jessica Turner



Jason Scott, Chris Hensley, and Donald Sorrells

Upcoming SCEA CCE/A Certification Changes Information Provided By Donna Gravely, CCE/A

Change in Motion...

In the Fall 2007, the *National Estimator* explained that the CCEA Program would be changing to enhance the value of the cost profession. Below are the specifics of those changes:

- ***Maintain work experience requirements*** at 2 years to recognize the value of on-the-job experience.
- ***Revise test questions*** to test more directly against the new Cost Estimating Body of Knowledge (CEBoK) and assure test questions are relevant, accurate, and consistent with current training and reference materials.
- ***Improve the testing instrument*** to include a case study or practicum segment wherein applicants will be rewarded for their ability to synthesize responses from multiple learning sources and reduce the amount of rote knowledge responses.
- ***Realign renewal (recertification) standards*** to better motivate, reward and balance active participation in hands-on cost estimating work, professional development, and cost community service activities.
- ***Grandfather all current CCEA's*** to assure no one's professional designation or standing in the community is diminished as a result of SCEA's actions.

In addition to improving the current certification exam, SCEA is pursuing the development of ***optional specialization examinations***, which will recognize subject matter expertise in a particular functional area and allow for reciprocity with other sister organizations.

Currently, SCEA is focused on generating and validating the new exam instrument and getting the word out about all of the upcoming changes, which are tentatively targeted to take effect in December 2008 to be in alignment with the CEBoK roll-out.

LESSONS LEARNED/BEST PRACTICES

Systems Thinking Overview

By

Mike Seibel, MCR Federal, LLC

What is Systems Thinking?

- Systems Thinking is a disciplined approach to analyzing and understanding the dynamic interactions among the parts of a system. It focuses on the functioning whole, or how the parts work together to achieve some common purpose.

Why Systems Thinking?

- We live in an ever shrinking system-of-systems world, where almost everything is connected in some manner. Every solution has a ripple effect that must be considered.
- The majority of problems in organizations are with systems, not people.¹
- "...an organization's survival is based on sensing, analysis, and interaction with its environment."²

What Kind of Situation Are You Dealing With? Systems Thinking Archetypes³

- **Limits to Growth** – Greater and greater effort must be expended to achieve results that were easily achieved before. "Pedaling faster doesn't seem to be the answer anymore." One way to attack this problem is to identify the finite resources that are putting the brakes on the effort.
- **Shifting the Burden** – One organization's solution becomes another organization's problem. In order to preclude this situation, include all affected stakeholders in analyzing and solving the problem. Avoid stovepipes.
- **Moving the Goal Posts/Drifting Goals** – A habituation to previously unacceptable performance. Standards are lowered because of a large gap between desired and actual performance. Dealing with this situation requires more than just trying harder. Take a rigorous look at why the performance is lacking. It may be due to other competing goals within the organization that need to be brought back into alignment.
- **Fixes that Fail** – A solution shows immediate success, but launches a set of unintended consequences in motion that results in exacerbating the original problem. An example of this archetype would be the development of more resistant strains of bacteria due to overuse of antibiotics. Taking a long term look at the ripple effects of potential solutions would do much to preclude the appearance of this archetype.
- **Success to the Successful** – Competition for a limited resource becomes skewed as the earlier winner has an easier time attracting the resource (e.g., winning sports teams tend to attract the best recruits). If nothing is done, the organization will eventually stagnate. A successful turnaround to this situation can be achieved by finding an overarching goal that would benefit all parties in the organization (e.g., a sports league adopts the rule that the teams with the worst records get the earliest picks in the annual player draft. The increased competitiveness between all the teams drives up spectator attendance across the league.)
- **Tragedy of the Commons** – Everyone acting in their own best interest destroys or damages a resource that belongs to all. A good example is a program office with many customers. Each customer acting independently from the others imposes their own requirements upon the hardware managed by the program office. The results are: late deliveries, poor performing hardware, cost overruns, and unhappy customers and program office personnel. As you cannot impose unlimited requirements upon a limited resource, all the stakeholders need to

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Systems Thinking Overview (Cont'd)

come together, develop a shared vision for the hardware, and decide upon a fair way to arbitrate the requirements imposed upon the program.

- **Escalation** – Occurs when two parties see their welfare as being dependent upon maintaining a relative advantage over the other. Each side may view their increasingly aggressive behavior as a defensive response to the other's aggression. The arms race is a classic example. Prescriptive action against this archetype could consist of finding a way to reframe the situation that leads to a win-win solution. "This arms race is lowering the standard of living of our two nations. Maybe we could sign a treaty limiting arms production/deployment."
- **Additions** – The solution becomes part of the problem (e.g., hiring more and more civilian contractors to augment manpower starved armed forces—eventually a conflict cannot be fought without them). As a means of resolution, go back and treat the real cause of the problem, not just its symptoms.
- **Balancing Process with Delay** – Many times decision makers will overcorrect when there is a significant lag time between the implementation of a policy and when its impact begins to be felt. When they do not see results, they push harder. An overcorrection is the result. Patience is the virtue to demonstrate in this situation. Allow time for things to run their natural course. "There will be no wine before its time."
- **Growth and Underinvestment** – Occurs when the demand for a product or services grows faster than the capacity to provide or produce it. As a result, demand begins to drop. This happens because the necessary investments in additional capacity or capability are not made early enough in anticipation of the increased demand.
- **Accidental Adversaries** – Results when two parties in the same organization have goals at cross purposes. Each in doing their job well thwarts the progress of the other. Communication and compromise can go a long way toward rectifying this situation. Find an overarching goal that both parties can live with.

Systems Thinking Lessons Learned/Best Practices

- Do not trust your first impressions. Things are seldom as simple as they first seem. "So many important problems that plague us today are complex, involve multiple actors, and are at least partly the result of past actions that were taken to alleviate them."⁴
- Along the same vein as above, failure is seldom due to a single cause. "Most major failings result from complex systems interacting in multiple ways."⁵
- Are you taking the 5,000 foot view of your situation and noting not only how the parts of your system interrelate, but how your system interrelates with others? How similar are the goals and motivations?⁶ If the goals and motivations are at odds, your planning must take resistance/push-back into account.
- Play close attention to the seams, or the areas where systems come together. These are the places where the ball gets dropped, or the message gets garbled.⁷
- Searching for scapegoats seldom solves the problem. "There is no blame."⁸ In response to the Bay of Pigs, President Kennedy observed that, "Success has a thousand fathers, and failure is an orphan." Placing the entire burden of blame on one person or organization requires a direct causal/linear relationship, which is undetermined with a systems approach. There are normally many players in a system, with no one having total responsibility for the adverse event. Do not simply respond to the event. Respond to the behind-the-scenes structure of patterns and relationships that drove it. Knee-jerk, band-aid solutions simply create tomorrow's problems. Treat the root causes, not just the symptoms.

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Systems Thinking Overview (Cont'd)

- If you are dealing with a recurring problem, look for the feedback loop that is generating it.
- Guard against unintended consequences. When planning, run a comprehensive set of scenarios in order to limit unintended consequences. Pay attention to the ripple effects. We cannot always predict the consequences of large actions. We can only look at the possibilities. Gather a diverse team that brings many frames of reference to the table. There is strength in diversity.
- Faster is not necessarily better. Be aware of how much pressure the system can take. If you try to implement a change faster than the system can bear, it will push back or maybe even break down.⁹
- Cause and effect are not necessarily closely related in time and space; neither are the impacts always linear. Hansen indicated that systems produce both equifinality and multifinality of results. Equifinality indicates that the same result can be produced from various causes (e.g., different roads lead to the same location), and multifinality indicates that different results can be produced from the same causes (e.g., you can take the same road to different locations).¹⁰ Take lag and ripple effects into account in your planning. Do not overreact or react too soon. Try not to be like the person who is steering a boat for the first time.
- Be efficient and search for the high leverage solution. Where is the point in the system pattern where a small amount of effort yields a big impact? Remember the Butterfly Effect.
- Do not be fooled into overconfidence by your understanding of phenomena. One's understanding of something is not the same thing as the thing, in and of itself. As Korzybski explained, "The map is not the territory."¹¹ A specific model of reality is incapable of capturing all the facets of what is being modeled.

¹Demming, W.E., Out of Crises, Cambridge: MIT Press, 1982, pages 66-67.

²National Defense University, "Strategic Leadership and Decision Making: Systems Thinking and Learning Organizations", undated, <http://www.au.af.mil/au/awc/awcgate/ndu/strat-ldr-dm/pt1ch4.html>, page 1.

³Sources consulted for this section include: Once upon a Complex Time: Using Stories to Understand Systems, by Richard Brynteson; The Art of Systems Thinking: Essential Skills for Creativity and Problem Solving, by Joseph O'Connor and Ian McDermott; The Fifth Discipline: The Art & Practice of the Learning Organization, by Peter Senge; "The Systems Archetypes", by William Braun, 2002, http://wwwu.uni-klu.ac.at/gossimit/pap/sd/wb_sysarch.pdf; and "The Systems Thinker Glossary", <http://www.thesystemsthinker.com/tstglossary.html>.

⁴Aronson, Daniel, "Overview of Systems Thinking", Copyright 1996-8, http://www.thinking.net/Systems_Thinking/OverviewSTarticle.pdf, page 3.

⁵Brynteson, Richard, Once upon a Complex Time: Using Stories to Understand Systems, Sparrow Media Group, 2006, page 20.

⁶Foley, Gertrude, SC, "The Need to Reflect on the 'Big Questions': Overview of Systems Thinking", undated, <http://www.lcwr.org/lcwrprogramsresources/Systems%20Thinking%20Handbook.pdf>, page 14.

⁷Fischer, Merja, "Systems Intelligence in Business Organisations", In: RAIMO P. HÄMÄLÄINEN AND ESA SAARINEN (EDS.), 2004, *Systems Intelligence – Discovering a Hidden Competence in Human Action and Organizational Life*, Helsinki University of Technology: Systems Analysis Laboratory Research Reports, A88, October 2004, page 90.

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Systems Thinking Overview (Cont'd)

⁸Senge, Peter, The Fifth Discipline: The Art & Practice of the Learning Organization, New York, Doubleday, 1990, page 67.

⁹Senge, Peter, The Fifth Discipline: The Art & Practice of the Learning Organization, New York, Doubleday, 1990, page 62.

¹⁰Hansen, B.G., General Systems Theory Beginning with Wholes: An Introduction to General Systems Theory, Taylor and Francis Publishers, Washington, D.C., 1995.

¹¹Korzybski, A., Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics (5th Edition), Institute of General Semantics, Brooklyn, N.Y., 2000.



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If you have comments, ideas, or are interested in contributing an article to “The Dayton Coster”, please direct them to Amy Smith at Amy.Smith4@wpafb.af.mil.