

DRAFT
Plan for the Improvement of the Professional Practice
of System Dynamics

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Background

The Society has concluded that it is important to improve the professional practice of system dynamics. To that end, several ideas have been offered in recent years. As a long-practicing professional, I was asked to become Vice President, Professional Practice, and to assemble a plan of action. Discussions at the 2014 winter Policy Council brought out several ideas, as did ad hoc discussions that occurred thereafter.

In that winter Policy Council meeting, I outlined what I saw as key *challenges to improvement of professional practice*. In summary, they are:

- Too few visible examples--in the form of individuals, organizations, and cases--that serve as role models to inspire entering and excelling in the commercial practice of system dynamics
- Too few mentoring opportunities to guide novices in the excellent art, science, and business of system dynamics modeling
- Too few opportunities to work on big, important, commercially valuable problem cases (hence low fees, low pay, low professional satisfaction, low attractiveness...)
- Too few paths available for a long-term rewarding professional career in system dynamics (hence stagnant skills development opportunities)
- Too little clear incentive for existing commercial organizations to participate in changing the situation

I know—I lived and fought these challenges every day for over three decades, leading Pugh-Roberts and, later, my firm.

The plan presented here is largely derived from ideas of other people, ideas that have been around a while...and ideas that are fundamentally

good. What they need is a fertile field, some nurturing, and follow-through. There will be more ideas and actions that can build on what we start here, but I am convinced that this modest collection of actions addresses all the challenges cited above, and is the key to getting started on a positive self-reinforcing path of improvement.

As it happens, the ideas are strongly supported, and further inspired, by some recent brilliant work by George Richardson, David Andersen, and Roberta Spencer, with the input of many. George writes of them in a paper (unpublished to date, I believe), “Drawing Insights from a Small Model of the Growth of a Management Science Field.” I recommend it highly.

The Initial Plan

There are three basic elements, and they are intertwined with one another in this plan:

- Expansion of the *success stories* of system dynamics.
- Establishment of a de facto *academic-commercial alliance*
- Development of “*top-gun schools*”—a previously rare level of mentoring at commercial firms practicing system dynamics

The three elements must and can work together.

The *success stories* part should be easy, but it has been like pulling teeth to get this rolling. We need distribution and publicizing venues, of course—but what we really need is incentive. I can personally write a few dozen amazing cases (I’m pretty old)... but I haven’t. What I (and other practitioners of my mindset) need is a commercial reason to do so. I don't publish to survive and advance. I bring valuable results to clients, many of whom do not want their stories told. Fine, but we now have the benefit of decades of SD modeling experience, and most stories several years old can be told without jeopardizing client competitive advantage or intellectual property. So we have a reservoir to tap. How do we do so, when I, as a commercial practitioner, have a hundred things seemingly more important to do than write up cases?

The single hardest asset to acquire in system dynamics commercial practice is not a client, not investment...but top-grade talent. In my experience, it must be found through careful screening, and then nurtured over years of training and apprenticeship. A commercial SD practice cannot work with a conventional consulting mentality of a revolving door of staff—the staff need to be committed to the work, become part of a diversely talented team, and learn from masters. So, in running a commercial SD practice, I will go a great distance to get great talent.

Of course, most talent originates in academia. We in commercial practice must seduce the degreed students over to the, umm, practical side of the force. And in my experience, nothing wins over the right kind of person like stories of great impact achieved, working with a tight-knit team to solve an intractable problem against all odds...and the chance to go out and do it themselves. It's what drives people into Special Forces, and it can inspire to greatness.

Academicians love the stories as well—I am routinely asked to supply the stories of “real cases” for academicians to use in awing their students. So there is reason to have an *academic-commercial alliance*. Not in any dark sense, simply in the way that other professions intern and mentor advanced students (Jay likens it to medical internship). We can organize a few schools to provide students, ideally as a part of their required curriculum, to be mentored in “*top-gun schools*” at several businesses practicing SD. Endogenous mentoring is the most effective for the student. Firms get a “free” chance to evaluate talent (which presumably will be among the top talent available) over a sustained period of time. The student mentees are treated and trained as “top gun” candidates, and receive rarely available exposure to impressive commercial work. Universities get better-trained students, and more great stories to tell classes, because...

It will be a *requirement of the Top Gun program that each mentee prepare at least one written case study* for the Society (and usable by the firms of course) of a recent or distant past great success story in the use of SD.

Win-win-win

First Steps

2014

- Plan basic content before winter meetings
- Line up the schools willing to participate... Albany, Rochester, WPI, MIT, Erasmus...?
- Line up the firms...PA, Greenwood/Ventana, Sandia, Los Alamos, Boeing, MITRE, Cooper... (a firm should have at least 5 experienced modelers to take on a candidate mentee)
- Promote the program and find the first Top Gun candidates—they should feel that they are among the chosen elite

2015

- Pilot with up to 10 candidates in 6-10 firms
- George visits or teleconnects to talk, teach, & cross pollenate as a “Visiting Professor Emeritus”

2016

- Refine, grow to 15-20 candidates, expand the ranks of “Visiting Professors Emeritus”

Next Steps, Practical Goals

We will learn more as we go. We will change and refine this near-term program, and add elements over the years. We have a structure in place now to do so, with active SIGs (particularly in Business), and several pertinent functional roles in the leadership of the Society. The immediate next steps will arise from the experience we have in the initial stage of implementing the plan described here. We have only to receive the feedback and act upon it, toward the clear goal of more and better Professional practitioners. But...how will we get that feedback, and how will we know what is happening? The *fourth element of the plan* here is that we should *make the Professional Practice survey a standard element of our yearly cycle* (managed by the Business SIG?), and report results at the annual Conference. Numbers of practitioners, size of practices, fees commanded, job satisfaction reported, ideas for improvement logged and then acted upon by the appropriate SIG.

I know that it is possible to grow a high-quality practice by 10-15% annually. After the program is established, we should *target a 10% annual growth in professional practitioners of system dynamics*—not from simply hiring more, but from taking action on these and future quality improvement initiatives. The growth will come from increased demand—the demand of paying clients and of eager, inspired new and maturing practitioners.