

# “Taking the Opportunity”

## 2013 Presidential Address

by Kim Warren

July 21, 2013 – Cambridge, Massachusetts

Friends and colleagues - thank you for the opportunity to serve as President of your Society and to speak with you today. Can I start by thanking my colleagues - the team of recent and forthcoming Presidents, the Vice Presidents who lead new efforts, the energetic Policy Council who help drive things forward, and Roberta and the Home office team who provide the guidance and foundations to keep things on track.

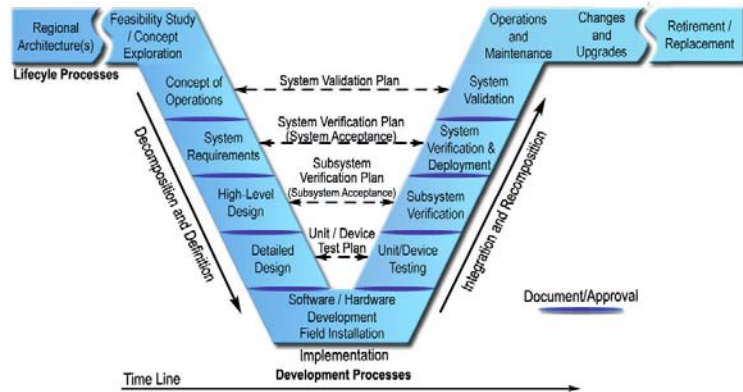
I want to talk with you about the opportunity that we all know exists for system dynamics to build its influence and impact. In February, the PC lent support to this Vision for the field ...

*System dynamics will transform society by making improvements to decision-making in government, commerce and other organizations, globally. Powerful examples of its impact will be publicized and widely known amongst the general public, and people with authority will be aware of how system dynamics can raise the effectiveness of what their organizations seek to do. Organizations will employ or seek support from large numbers of experienced professionals with deep skills that are defined, recognized and valued. Those professionals will emerge from Universities and other institutions which provide high quality training, drawing on an extensive resource of accessible and rigorous teaching materials. The topic will be understood and respected throughout the academic community. System dynamics will feature in all parts of the education system, leading to widespread public understanding and demand for better policymaking throughout society.*

Many may be sceptical that this is over-reaching and unrealistic. I want to show you two reasons why it may be possible, then ask you to do three things to bring it about.

The first reason to believe this Vision is achievable is simply that others have done the same in other domains. The following examples are mostly business-related because that is where I happen to come from, but you may know of other examples.

I understand Systems engineering originated at Bell Labs in the 1940s. Their professional society - the International Council - started in 1990, and continues to grow steadily. Although the Council has just 8,300 members, over half a million job advertisements are placed for systems engineers each year – that’s not half a million jobs of course, but is certainly indicative of a large and ubiquitous profession.



Like us, the field takes a holistic view of problems, tackles complexity, uses graphical representations and models (including ours!), and follows well-established professional procedures.

Today, pretty much every manufacturing firm, and many others, employ qualified Systems Engineers. The Council has built a large and evolving Body of Knowledge, a strong and continually extended technical resource centre, a demanding 3-level professional certification process, and a 100-strong Corporate Advisory Board made up almost entirely of big names like Boeing, Deloitte, IBM, PA Consulting, NASA and Siemens.

Now Systems Engineering looks to be a pretty complex and demanding discipline covering many technicalities – amenable to this kind of rigorous management, huge impact and recognition.

... but let’s take a different example. The Balanced Scorecard approach to managing business performance lacks a rigorous underlying theory, and its method, training and dissemination might best be described as craft-based. Nothing wrong with that, so long as it works, and in spite of those characteristics,



the Balanced scorecard is used today by nearly half of N American organizations, and at least a quarter of firms in Europe and Japan.

In the first 20 years after its emergence in 1992 it infected the whole corporate landscape. Its Institute has no public membership, but It too offers a Certification program, and thousands of Balanced Scorecard courses are run around the world each year. So this profession – like Systems Engineering - provides hundreds of thousands of jobs.

Other disciplines, like 6 Sigma, Value-Based Management and Business Process Design, also swept through the domains to which they are relevant in 20 years or less. These professions all serve a large and stable User base, in big organizations that recognise the important contribution they make to sustained, strong performance.

Their professionals can be qualified and certified – not in the compulsory way required in Law or Medicine, say, but certification sends a strong message that these are serious professions, with demanding and well-defined skills, that are highly valued. All have large libraries of technical and popular books and cases, and all are well-known outside of the profession itself. Ask any mid- to upper-level manager in any firm about these topics, and they will have some idea what they are, what they do, and why they are important.

So I rest my case - the kind of adoption and impact that our Vision calls for can be reached, and need not take half a century to achieve.

My 2<sup>nd</sup> argument for saying we can take the opportunity is that the door is open for us – and has been for a long time ...take

Economics. A young PhD used a model of a newly oil-rich country, built on the macroeconomic model developed at MIT and an oil price model to propose policies for managing future oil revenues. With the director of the national Bank he argued for a petroleum fund with strict rules for using revenues, which parliament endorsed. Two leading economists argued against the proposal, but the



government - having seen the dangers highlighted by his work, established the fund, which has since become the backbone of the country's economic strength.

That young PhD was Erling Moxnes, the country is Norway, and the work was done in 1982 ... but let's have a show of hands on how many people here knew that? More importantly, you might wonder – how many *economists* know that?

Take Defence. OSCAM is The Operating and Support Cost Analysis Model

[www.oscamtools.com](http://www.oscamtools.com) - an SD-based program, developed by Steve Curram and colleagues in the UK for the US and UK Defence Departments to manage costs of operating, maintaining and provisioning the fleet. System dynamics is the core of the system, because it is the only approach that could capture the accumulations, aging chains, interdependencies and thresholds that arise between the elements of the program.

**OSCAM** Operating and Support Cost Analysis Model

Home  
Products  
Downloads  
Training  
Help  
Feedback  
Learn More  
Contact Us

Ship Sys Air JSF EFV

**What is OSCAM?**  
The Operating and Support Cost Analysis Model (OSCAM) began as a joint program, in 1996, between the US/UK aimed at developing a model that estimated the O&S

**OSCAM Air Training**  
May 2013  
M T W T F S S  
1 2 3 4 5  
6 7 8 9 10 11 12  
13 14 15 16 17 18 19  
20 21 22 23 24 25 26  
27 28 29 30 31 1 2  
3 4 5 6 7 8 9

TBC, please contact US Help Desk for further information on future OSCAM Air Training courses  
[More information](#)

**OSCAM Ship Training**  
May 2013  
M T W T F S S  
1 2 3 4 5  
6 7 8 9 10 11 12  
13 14 15 16 17 18 19  
20 21 22 23 24 25 26  
27 28 29 30 31 1 2  
3 4 5 6 7 8 9

This is a great success for system dynamics and has now been in use for over 15 years! It is continually adapted and extended – and now deals with air and land-based assets too ... but once again, let me ask how many people here knew of OSCAM?

There are many similar cases in our other domains – environment, business, public policy, and so on – highly valued by the few people closely involved, but not widely known in the wider professional community, and completely invisible to the wider world.

What these cases tell us, though is that the door is open – so why don't we walk through it? Well, some have ...

Take Healthcare. Building on work done with colleagues at Harvard University School of Public Health, Kimberly Thompson and Radboud Tebbens who now lead Kid Risk published this in the world-leading medical journal, The Lancet “We developed a dynamic model ... to show the importance of maintaining and increasing immunisation intensity to complete the eradication (of polio) and to show how policies based on perception of high short-term costs or cost-effectiveness ratios without consideration of long-term benefits could undermine eradication efforts.” (A polite way of saying that the economists got it wrong, again!)

) Polio eradication ...



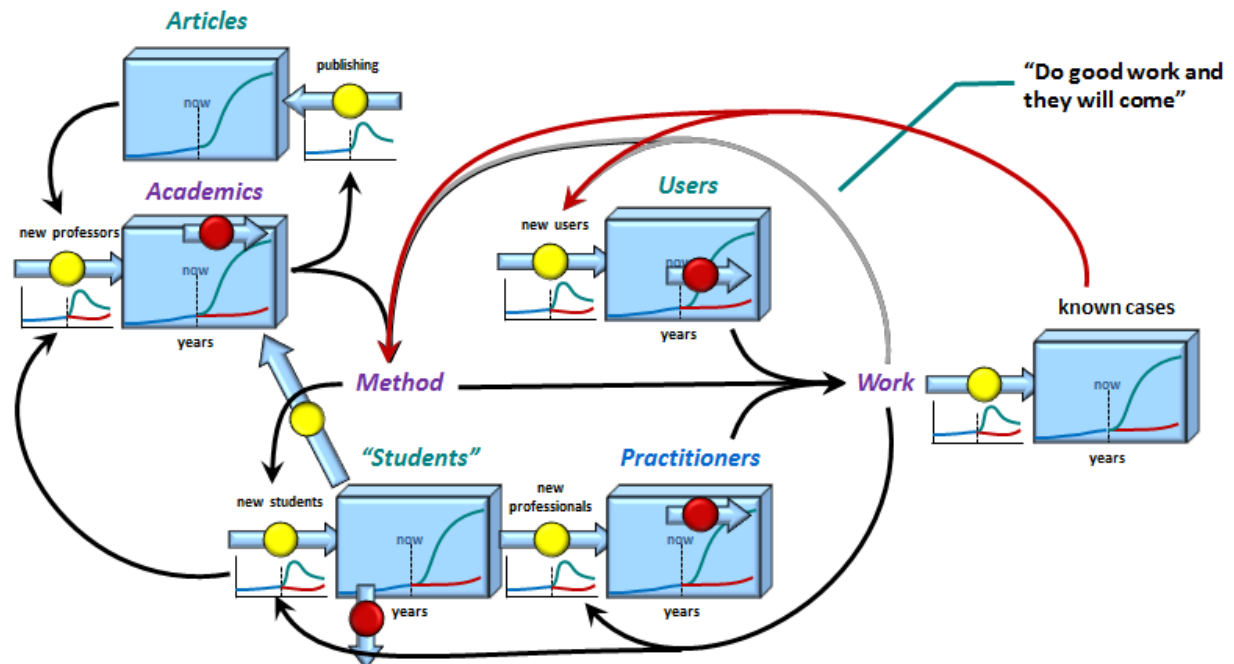
This work informed the World Health Organization’s current policy, to commit billions of dollars to eradication, and likely save hundreds of thousands from the suffering that would result from periodic flare-ups of the disease in otherwise under-vaccinated populations. Those in the fight against polio and other diseases know of this work and of its importance.

Healthcare is arguably the single domain in which system dynamics has advanced the furthest towards its potential, with Jack Homer and colleagues encouraging awareness and policy change through the Centers for Disease Control and other channels, and consulting groups in the UK and other countries impacting Health Service policy on a wide range of issues. Similar recognition and acceptance may also have grown in some other specific topics, like supply-chain and project management.

Similar visibility may be starting to grow in other domains too. After climate-change, the availability and use of water is another massive challenge facing mankind, and an issue that has long benefited from System Dynamics. So it is good to know that those in that field know about that.

These examples of visibility for system dynamics in major policy domains are not unique, but are certainly rare – why is that?

Let's first step back and consider what "a profession" actually is.



At the core of a profession are the Users who want work done and the Practitioners who do it – good work attracts new Users, who then ask for more such work, which pulls in more practitioners.

The work deploys methods developed by academics (and by practitioners), building on what is learned from doing the work, and the academics instil the method in students and other learners who then become practitioners or more academics.

The academics and students publish articles that build the intellectual reputation of the field, enabling growth and stature of more academics.

A field doesn't have to have all this of course – astrologers and some alternative therapists get along just fine without any academics or method, and some academics get along fine writing articles for each other in journals they promote with no interest in bothering anyone else on the right (our academics of course are not at all like that – nearly all being practitioners too!)

The system maxes out when the opportunity is largely exploited – not necessarily at 100% penetration, but a substantial fraction.

So this is the system the Society seeks to drive forward. The left side of the system is in good shape – but the right side is not. So the fact I am focusing on Practice is not to down-play the Academic side at all – effort in any system works by changing the flow-rates, and it is the flow-rates on the right that need attention – so how is that doing?

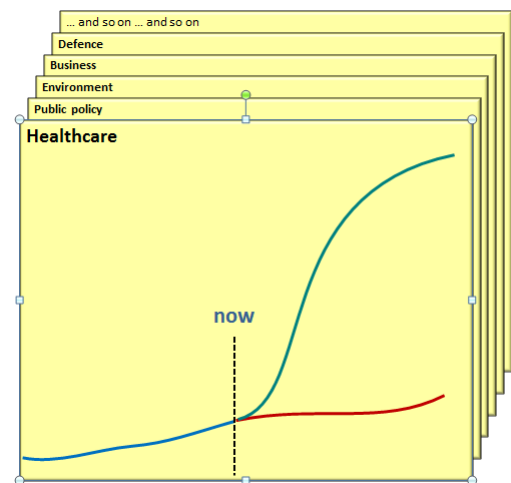
The loop at right shown in grey is known as “Do good work and they will come” – unfortunately – it isn’t true. “They will come” only if the work is known about – and that means writing about it, presenting it, recording it and promoting it. If that doesn’t happen, the outflows take over and the system stalls, as shown in the red time-chart lines.

... and that is where both the challenge and the opportunity for us all are to be found. This part of our system – unlike just about any other profession, is replicated across numerous domains of policy.

This figure in fact badly understates that diversity, because each domain includes many sub-domains of its own – business includes project folk, marketers, Finance VPs, human resource types and so on. Public policy covers justice, housing, social services and many other topics– and so on, and so on.

So – as I say – our potential is vast, but so is the task to achieve it. But I hope I have shown you that this is possible – which is where you come in.

I said I was going to ask you to do 3 things, so here they are ...



### First - Go find the practitioners

There are thousands of them out there, doing great things with system dynamics and making a big difference – we know that because when we go looking, we can find them. But if we don’t go looking, we don’t know who they are, what they are doing, or for whom they are doing it.

There are many lonely folk there are out there – plugging away as best they can – with little knowledge that the system dynamics community could be supporting them, so go hunt them down and offer that support.

As a Society, we need to raise the incentive for practitioners to get involved, so the Policy Council recently created a new position of Vice President for Professional Practice, to develop that support and encouragement. We really need a strong person for that post, so if you know who that might be – or might be that person – please get in touch!

**Second - Write about the work, present it, report, and promote it ...** not just to us – but to the people who need more of it! How might we achieve that?

Well, if you met someone who you thought might find system dynamics useful – where would you send them to show them its value? *“The System Dynamics Review”* maybe?

... but just think – what do you want them to find ... some real-world cases featuring people like themselves dealing with challenges just like their own, and talking about the value system dynamics gave them, described in short, persuasive language.

The Review fulfils a quite separate – and critical – purpose, building our credibility in other academics domains. It is not, and is not meant to be, a publicity machine for users and practitioners, or for the wider public. Articles in other academic journals – say in healthcare, environment or economics – tick the “relevance” box for your hypothetical friend, but those are not accessible, either in content or style, to time-pressed professionals.

And – to complete a loop I missed from the model of a profession I showed earlier – tell the public too, because if they know that much better policy is possible, they might just start to demand it. What a shame, for example, that the Norwegian people don’t know they have Erling and system dynamics to thank for their current high standard of living, and that people in sub-Saharan Africa and Bangladesh don’t know that they have Kimberly and her colleagues, and system dynamics, to thank for their kids escaping the ravages of Polio.

How to do that? we know where people go looking for information these days – to Google, to Amazon and to YouTube!!! Search Amazon for Systems Engineering,



Balanced Scorecard or 6 Sigma and you will find thousands of titles. You will even find some for Dummies!

Great efforts are already going on in this popular direction – the teaching materials and initiatives in the K-12 community reach out not only to the children themselves, but indirectly to their other teachers and parents. The efforts of Gene Bellinger and Scott Fortmann-Roe with their interactive e-book “Beyond Connecting the Dots” promise to reach a much wider population than before. And as you heard yesterday, Erik Pruyt from Delft is releasing another open e-book, aimed at creating large numbers of skilful new practitioners.

But these and other efforts will need content – more cases, more successes, more evidence of impact. And at that point the diversity of our work could turn from a challenge to a huge asset.

There is a concept from my world of corporate strategy known as “relatedness” which simply means that an asset in one activity can be leveraged in others – Coca Cola can market Fanta, Sprite and Powerade as well as Coke because of its sales force and dispense machines. For us this means that success in one domain offers credibility to kick down doors in others *“So system dynamics has done that in health-care – and in defence – and in environment - and I can see how its powerful method can do that. Wow! – I guess it can help me too in policing, or foreign aid, or city management or whatever.”*

Like those other professions I mentioned earlier, system dynamics also needs tools – and our software providers work tirelessly to make what is genuinely a tricky method understandable to outsiders and accessible to new users. In addition, the open standards initiative being led by Karim Chichakly of ISEE, Steve Adler at IBM and others can help open up models and cases to wider audiences and allow other systems to integrate with ours.

As for presenting and recording great work – posting slide-decks isn’t enough – and be careful! Remember that no-one sees what we see when we show our diagrams. So they are very likely to be taken out of context and misrepresented! And in any case, it’s near-impossible to be persuasive with text or images alone, even if you can get busy people to take the time to read it.

So look around YouTube for how to present things well .... It doesn't have to be fancy video. Screen-capture is dead easy, and there's endless advice out there on how to give a strong presentation.

Finally, on this issue of communications – please jump on people who ask “*Why are we not getting anywhere?*” and tell them to stop – it isn't true, and every such remark makes it harder to get further, faster.

In summary – we have a Marketing challenge – the vast bulk of the system dynamics iceberg is under water. And the piece that is above the water is hidden in fog. So my challenge to you all is to lift that cloud and lift that iceberg out of the ocean so everyone can see it.

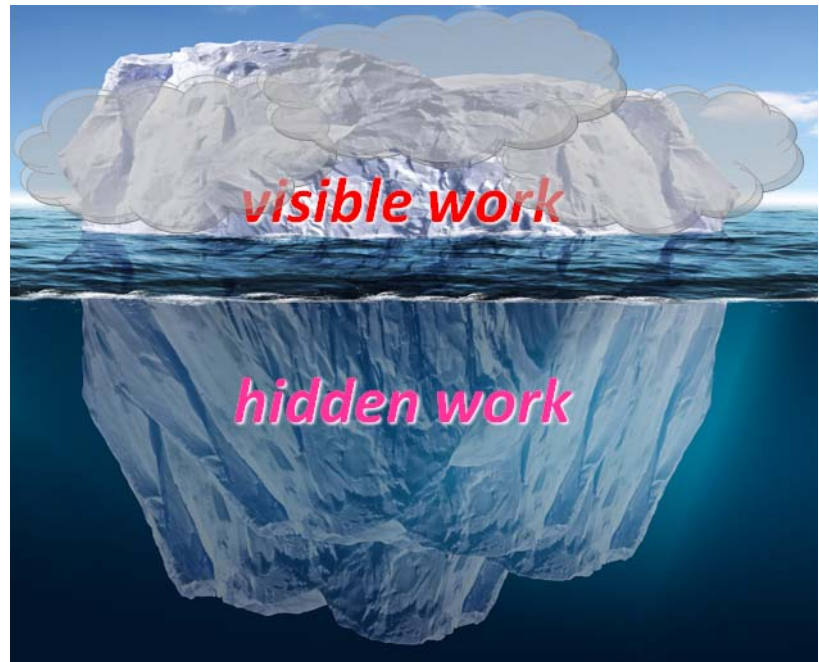
To help with that the Policy Council has approved a second new position of Vice President for Marketing & Communication. Once again, we need a strong candidate for that role.

If you think you can help with either of these tasks – representing and supporting practitioners, or marketing and communicating the field – but don't feel up to a Vice President job, do still let us know, because there is much you can help with short of taking one of those jobs.

**My 3<sup>rd</sup> request to you is to join in and reach out.** Grab those practitioners by the hand, and hound them for their work.

We have set up a simple system, which we will shortly make simpler still, for people to submit success stories. All it asks for is ...

- what was the problem
- whose problem was it (anonymous if necessary – “a construction firm” ... “a city council”)
- what was done



- and *critically* what value or other real benefit did it deliver
- and end up with links to more information and who to contact

This takes no time at all, and we can offer help to make the cases engaging. As soon as we have enough to look impressive, we will go bold with featuring and promoting the list. Where we need to get to is a point where anyone with any authority, in any function, in any organization – hearing about System Dynamics - can go to our site and immediately find short and powerful examples of how you or someone like you helped solve some challenge exactly like their own.

The Society's Interest Groups are critical to this – up to now, most have been just that ... communities who share an interest amongst themselves – but they are hugely important – why?

Because that is where you find the Users, the Work, and the Practitioners on the right side of our model of a profession. So join those SIGs, get those practitioners to join too (they don't even have to be members of the Society) and get talking and sharing. Then, when you have a good pile of useful content – take it out to the professionals from your domain who do not yet know about System Dynamics.

Our country Chapters fulfil a very complementary role in this – as the channels into national and regional communities, especially where language issues arise. So join your Chapters too, and chase down the SIGs for content to disseminate. The Society has set up a fund to support any promising efforts to get System Dynamics out into under-resourced Regions. I can announce, for example, that with David Andersen's initiative, we are making a strategic thrust to win back and re-build our visibility in Asia-Pacific. We are working on a plan for a conference this December in Japan, and the Strategy Committee recommends that is followed as soon as possible by annual winter conferences in the Region.

And it is not just Asia-Pacific - we will support any similar initiatives that we can, in any Region that promises to build the field.

At least as important is for us all to go join the User communities in our domain of interest – if not their Societies, then at least their Linked In or other Discussion groups. So when someone out there says "*Hey, I've got this problem*" you can jump in with "*System Dynamics can help you with that – go look at these examples ...*".

Even better - team up with enthusiastic adopters of system dynamics who come from those communities. You may be surprised to find that those groups positively *want* to hear from us – Balanced Scorecard discussions, for example, frequently ask about how system dynamics can help with their efforts.

Incidentally – I have a special request for our most experienced colleagues. I sometimes hear that taking part in Discussion groups is a waste of time, because they are dominated by dumb questions and comments from people who don't know what they are talking about. Whenever that happens, it poses a serious danger to us all, because that is the public face that newcomers will see.

But it doesn't have to happen – discussions will not be dominated by people who don't know what they are talking about if people who *do* know are constantly active – offering advice and guidance, and surely we want to encourage people into our community by answering exactly those dumb questions and fixing those dumb comments.

Lastly, in this final call to join in and reach out, see if you can reach out to the public. Respond to news stories, send in pieces to the papers – whatever. Just make sure the phrase “system dynamics” is in everything you do, so Google will spot it and start building that visibility.

I hope I have made the case that it is possible to drive system dynamics to the scale and impact that society needs, and that it can be done in a couple of decades. And I have shown the kind of things you can do to get us there, so why not write down right now 3 things that you will do to help in that endeavour.

Ladies and gentlemen – this is your Society, your profession, and your opportunity – go take it! Thank you.