

A Protocol of Systems Evaluation

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May 30, 2006

Paper appears in:

Cabrera, D. (Ed.). (2006). *Systems evaluation and evaluation systems whitepaper series*. Ithaca, NY: Cornell University Dspace Open Access Repository. National Science Foundation Systems Evaluation Grant No. EREC-0535492.

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1 Introduction

Boundary critique and the development of the evaluation ecology were described in the Theory of Systems Evaluation paper (Cabrera & Trochim 2006) These are the first two steps of the protocol of systems evaluation (PSE):

1. Boundary critique of the evaluand
2. Form an evaluation ecology

Before we explain the next steps, we will review how the theory of systems evaluation (TSE), PSE and systems evaluation (SE) “habits of mind” relate.

2 Linking Theory, Protocol, and Practice

The link between theory and practice requires a progression of learning. The first thing evaluators need is a list of simple things they can do “today” to incorporate systems thinking and systems approaches into their practice. The next step is a more formalized “systems evaluation protocol” that they can use (like the models described above, or in conjunction with them) as a framework for developing systems evaluation. Finally, this protocol must be tied to a theory of systems evaluation. Theory provides two uses. First, it can be tested and incrementally altered over time for validity and reliability. Second, it provides an advanced recombinant framework from which new practices can be derived. That is, while the protocol is a generalized “example” of the theory, the theory is a framework from which many more derivations can emerge. Figure 1 illustrates that while simple rules may be practical and useful to practitioners, protocol and theory, while more conceptual, are also more adaptive. The first step (the entry point of the inverted triangle) is to provide people with a list of simple things that they can do to change their practice from evaluating to systems evaluation.

Four things evaluators can do to become systems evaluators:

1. Change your mind
 - When in doubt, think of all evaluation as a form of feedback and as synonymous with learning and evolution.
 - Try to shift from external evaluator who evaluates to internal evaluand that evaluates itself (i.e., the system is doing the evaluating).
 - Consider an “evaluation ecology” a system of feedback based not on a single evaluation methodology, but multiple methods working in synthesis.
 - The value of evaluation lies both in judging and reporting and also in learning and adapting.
 - Evaluate how the system learns as well as what it learns (i.e., influence the culture to become a learning organization).
 - Think of evaluation as both discrete and continuous. Set up informal rapid feedback processes in association with more formal evaluation processes.
2. Understand the evaluand
 - Spend more time on the front-end establishing the identity of the evaluand.
 - Consider multiple levels of scale, time-cycles and perspectives in your evaluation and try to “couple” or relate the different evaluation needs at each of these levels of scale, time-cycles and perspectives.

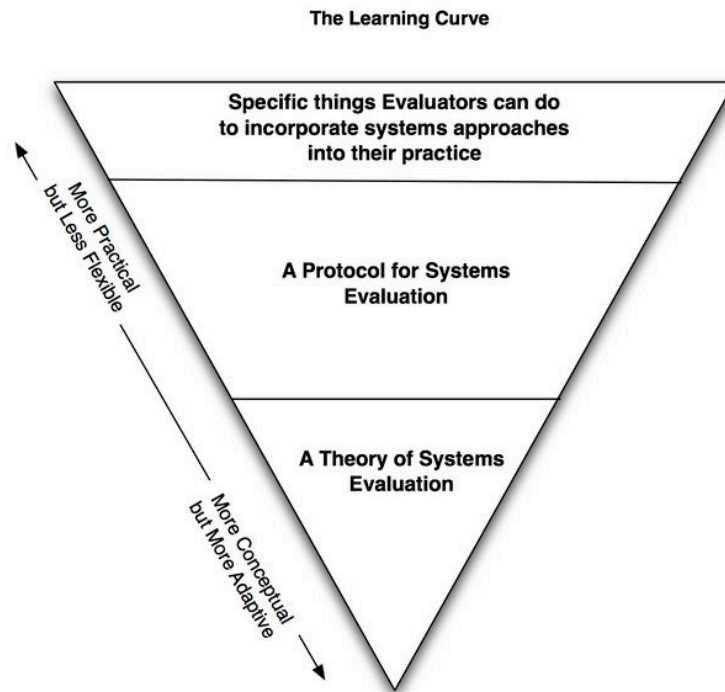


Figure 1: *A learning curve*

- Identify the “evaluation maturity” of the evaluand: Is it new or old? Has a great deal of baseline data already been collected? Is it a learning organization?
 - Identify what type of animal the evaluation is: Is it simple or complex? Changing over time? Continuous or discrete? Post hoc or ad hoc? Planned or adaptive?
3. Incent right, get more participation
- When collecting data from people, incentivize them by giving them something immediate and useful (based on that data) in exchange for that data.
 - Reduce the amount of time between or, alternatively, increase the perceived relationship between, the evaluation and changes that occurs as a result of the evaluation.
 - In systems with many hierarchical levels, incorporate evaluations that are immediately useful at the global and local scale.
4. “You are here:” Situating in terms of outcomes
- Use the transcontinental railroad “golden spike;” start from both ends in linking direct short-term outcomes, and indirect long-term outcomes and remember that long-term outcomes may often be based on available research (this allows for local-global networking).
 - Think about the many “pathways” that may lead to the same indirect mid-term or long-term outcomes. Link these pathways by learning where their shared “markers” are.

3 Netway Software: An Innovative, Network-based, Local-Global, Evaluation Management Platform

The next step in the “inverted triangle” is to engage evaluators in a step-wise process (a “protocol”) that helps them to become systems evaluators. Netway is one step in this protocol. Netway is innovative software that bridges both theory and practice and local program management with global meta-surveillance. The Netway motto and the reason it works is that: the **local-incentive and global-effectiveness is a function of local-to-global and peer-to-peer feedback.**

This platform is network-based and allows users (program leaders/evaluators) to use a web-based interface to simultaneously generate useful logic maps or network diagrams (there are multiple output styles depending on user preference) at the same time that their program’s information is entered into a larger global network. “Activity matching” and “outcome matching” between local-global and peer-to-peer in the network is accomplished by pre- or post-creation of categories. Inputs, activities, environments, STO, MTO, and LTO are all matched to categories (this categorization process can be done before through methods such as concept mapping with global agents, or after the input of local agents using similar methods and retro-coding the local input).

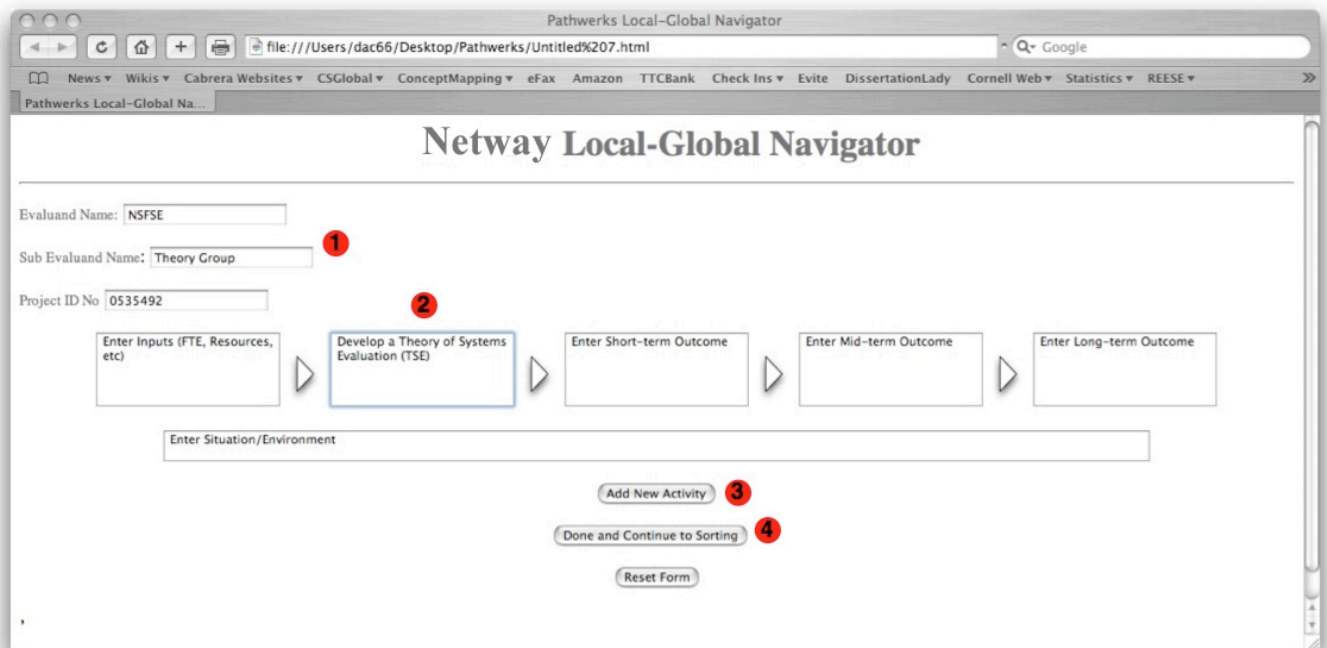


Figure 2: *First window of the Netway Local-Global Navigator*

Figure 2 is a screenshot of the first window of the Netway Local-Global Navigator. This process occurs after the user has used Netway Boundary Critique to develop their evaluation ecology (not shown here). Item 1 in Figure 2 shows that the local user enters the name of the evaluand or project, the sub-evaluand name, and the evaluand ID number (in this example, this number is given by our NSF grant so we are local agents and NSF administrators are the global-agents). In item 2, local agents enter text for what is essentially a logic model (inputs, activities, STO, MTO, LTO, and environment). Local users can enter any text they want and can add new activities (item 3), or complete this task and move on to the sorting

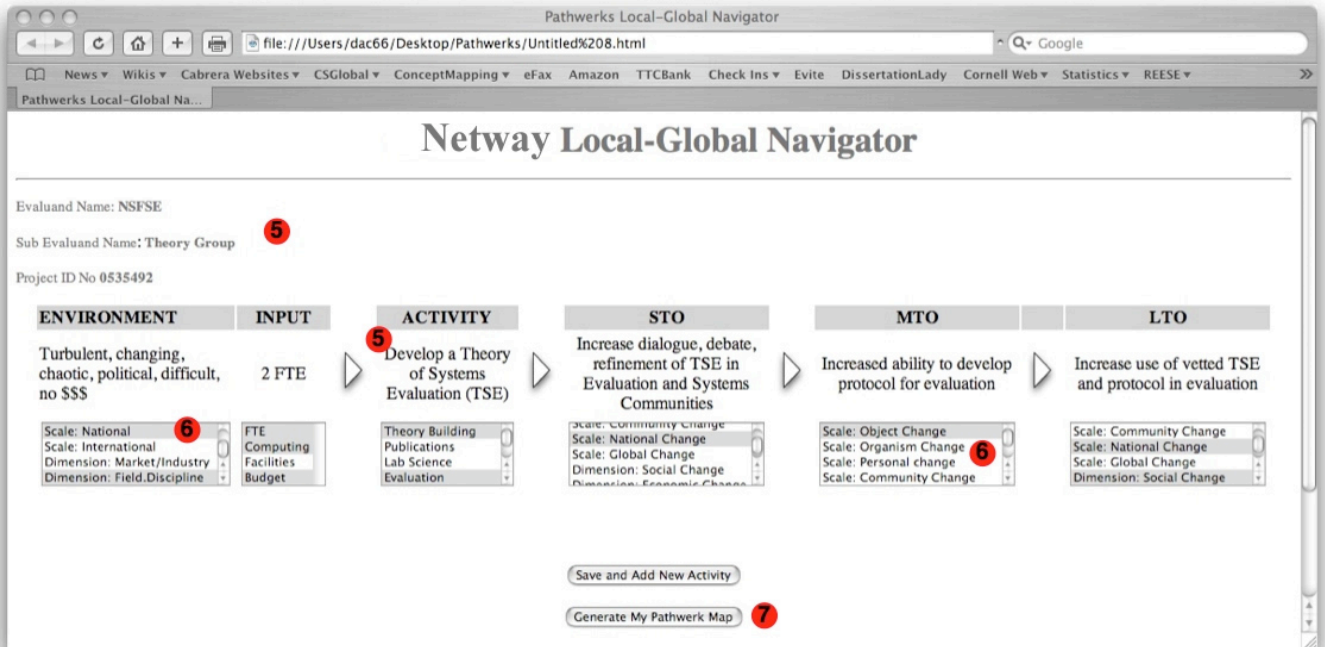


Figure 3: *Sorting phase window of the Netway Local-Global Navigator*

phase in Figure 3. Each time the local user enters text into the text fields, they are adding a node and edge to the network. These nodes actually contain the data that the user submits and can contain various other data as well (such as sorting data used to relate nodes across projects or data that allows people to “hang” research, PDFs, and other documents onto the node).

Item **5** in Figure 3 shows that the inputs from Figure 2 are dynamically generated for the local user. At this point, the user selects from pre-existing global categories for each input. The way that these categories are generated is flexible (e.g., pre-/global; post derived from local input; and/or a combination of the two in feedback, can be used. In addition, “other” fields with user defined categories in real-time could be added; there are also numerous methods, such as concept mapping, that could be used to generate these categories from local data or from scratch at the global level). Figure 3, item **6** shows some sample categories and shows that the local user can select one or several of these categories.

Here again, the local user can save this Netway and create a new activity or project or they can “generate a Netway map” (item **7**). This step—generating the Netway map and report—is a **critical** part of the Netway process because it provides the **incentive** for local agents to participate in global networks. Rather than a simple reporting tool in which local users send off data and rarely see results or benefit, Netway uses incentive-based strategies to provide the local user with something immediately useful to them. For example:

- A Netway mapping of their activities and outcomes auto generated in various formats according to local user preferences (e.g., logic model, network map).
- A network analysis of where the local user is situated within a larger global network (e.g., other programs that sorted similarly).
- Key indicators and markers that are “near” or part of the local user’s Netway.

- Examples of other “pathways” that other local users are taking to get to same or similar outcomes.
- A network analysis of outcomes, indicators, pathways and markers that similar local users have in their pathways that the user does not have in its (akin to Amazon.com’s “people who bought this book also bought” feature).
- Links to existing research (actual PDF’s of publications) that local agents can use to link direct outcomes of their interventions to indirect outcomes such as national or global socio-economic factors.
- A qualitative analysis (performed by global-level experts) of how the local agent can increase the dynamics of their program model or link to more relevant outcomes, existing or future research or existing or future funding lines.
- Numerous other data analytics.

This report is automatically generated in visual and data formats and is easy to read and use. At the same time, and in exchange for the local user’s effort, the global agent is receiving data about the local-global network that can be used to better manage the network (influence decisions, future RFPs, etc.) This use of agent incentive is a very important aspect of the Netway software and idea.

4 References

Cabrera, D. & Trochim, W.M.K. (2006). A theory of systems evaluation. In D. Cabrera (Ed.), Systems evaluation and evaluation systems whitepaper series. Ithaca, NY: Cornell University National Science Foundation Systems Evaluation Grant No. EREC-0535492. Dspace Open Access Repository.