

NASA Applied Earth Science Solutions Networks Workshop (April 12-13, 2007))

Breakout Session #2: Identification of End User and their Needs

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The goal of a Solutions Network is to identify candidate solutions, where research results have the potential to enhance decision support. Its role is to serve as a creative, discovery process that is an entry path for a research-to-solution systems engineering framework, with an end result to ultimately improve decision support. The candidate solution(s) are documented in Candidate Solutions Reports, which are principally decision need focused; once the need is documented, then relevant research results are "discovered", and a process for evaluating, benchmarking, and implementing the candidate solution is recommended. This process is applicable for a wide range of decision needs, including partner government agencies, non-governmental organizations, international, and private sector needs. This report will focus on the identification of end users and their needs.

An end user is technically defined as the ultimate consumer of a finished product. A solutions network end-user may be a decision or policy maker or organization, a researcher, a research program or an individual in the public or private sector. Although most decisions are made at the local level, decision makers at the state, regional, national and even international levels must also be engaged. To this end it would be most beneficial if each National Priority Area point of contact included definitions of its target end-user communities.

Establishing Solution Network collaborations should be intentional and planned. They may be formal or informal. It is vital that the first step in securing a partnership with the end user is a thorough understanding of what they do and what is important to them (rather than asking them for a set of requirements or decision inputs). Once a point of contact is established, continued contact is necessary to nurture trust among the participants of the partnership. Furthermore, much iteration may be required to identify a research result and implementation process that will be beneficial, as it may take the combined creativity of the researcher and the user to fully understand the solution need and available research relevance. A strong feedback mechanism is important and people-oriented connections are always essential when establishing a viable, long-lasting collaboration between end users and researchers. This illustrates the importance of networking.

Dr. Barron Orr (University of Arizona) and Dr. Phil Rasmussen's (Utah State) presentation on Geospatial Extension highlighted why some technological innovations failed, while others succeeded. They introduced the term coined by Geoffrey Moore, "Crossing the Chasm." Everett Rogers in a 1962 book Diffusion of Innovations which visualized the incorporation of innovation into society as a "bell-shaped" curve, in which the early innovators were "early adopters." The early adopters were willing to take a risk to try new technology (or new technological approaches). The decision by "early adopters" to experiment with a new innovation depends upon the risk of purchase, ease of product use, and immediacy of benefits.

Ranchers who were “early adopters” might not even have had a laptop, when they walked into a meeting for the first time. However, by the end of a “hands-on” training session, all had laptops and could see how a new technology could be utilized to download NASA assets for projects such as precision agriculture or vital information on water availability for livestock needs.

It is important to target and advertise early adopters to blaze new pathways. If the technological innovation makes it across the chasm and is adopted by the early majority, it is likely to succeed.

Functional websites and high-tech approaches are critical resources in this endeavor, yet we must also realize that for many, low-tech human interaction is still essential. Solutions networks must therefore develop a “high-tech, high-touch” philosophy to succeed.

A point is reached where the number of people with whom one can have actual contact is limited: “virtual communities” start at that point. The alternative is a situation with a “knowledge broker” (i.e., an agricultural extension agent having contact with many, many farmers, increasing the number of people with whom they are in contact). An additional advantage of the virtual community, such as the portal approach, is that early adopters can train others. Educational materials may be made available within both the portal and training sessions, to empower officials in partner agencies and end-users to learn how to tap and deploy research assets.

Finally, part of the solution network process is built upon sharing information, research results, technology and procedures among members of other Solution Network projects, MRC/MSU, and NASA centers; such as Stennis, GSFC, MSFC, and LaRC. This is part of the discovery process. Assets can then be identified within the candidate solutions report or later utilized within an Integrated System Solution (ISS).