Community Development and the Interagency Fuels Treatment Decision Support System

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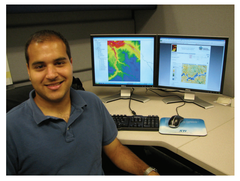
ABSTRACT

The Software Tools and Systems Study was initiated by the Joint Fire Science Program and National Interagency Fuels Coordination Group in March 2007 to address the proliferation of software systems in the fire and fuels treatment domain. In 2008, the Interagency Fuels Treatment Decision Support System (IFT-DSS) software framework was designed to organize and manage the many software systems and data used for fuels treatment planning and make these tools available to fuels treatment planners through a single user-friendly, web-based system. Technology transition experience shows that in order to ensure acceptance and institutionalization of software systems, a network of stakeholders is essential. Technology development teams allied with the early adopter end-users rarely have the resources or staying power to move a new software technology from innovation to institutionalization. That is, large, multi-faceted software products such as the IFT-DSS can only be used effectively if a well-organized community of interested stakeholders exists to provide ongoing support for the system. Early in the design stages of the IFT-DSS, six IFT-DSS stakeholder groups were identified: 1) fire and fuels management community, 2) scientific model development community, 3) database developer community, 4) senior management and governance community, 5) information technology and system maintenance community, and 6) IFT-DSS coordination team. Collectively, this group of stakeholders will eventually provide the support infrastructure to ensure that IFT-DSS is adopted and supported on a long-term basis. This poster will present the various user groups, their roles and significance in the IFT-DSS program, and the communication strategy that will be employed to engage each of these groups throughout the IFT-DSS

INTRODUCTION

The IFT-DSS Community



Stakeholders

Who are they?

1. The fire and fuels management community
2. The scientific model development community
3. The database developer community
4. The senior management and governance community
5. The information technology and system maintenance community
6. The IFT-DSS coordination team

Stakeholder Categories*

Innovators
Brave, educated, adventuresome people; looking for change; very important communicators and disseminators of new information.

Early Adopters
Social leaders, popular, educated; willing to try out new ideas but in a careful way.

Early Majority
Deliberate, thoughtful people; careful but accepting of change more quickly than the average individual.

Late Majority
Skeptical, traditional people who will adopt new ideas but only after the majority.

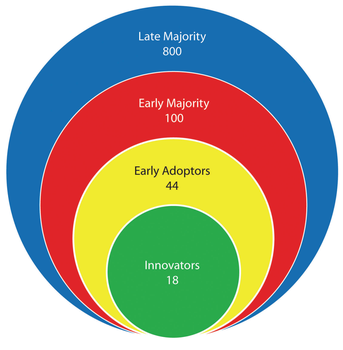
Laggards
Traditional people who prefer the old ways; critical toward new ideas; will only accept a new idea once it has become mainstream or tradition.

COMMUNICATION STRATEGY

Community Development Approach

General approach for increasing IFT-DSS awareness in each community:

1. Start with a small group of innovators.
   - Develop understanding of user needs and relationships
   - Assign IFT-DSS team member as a guide to work with innovators throughout the project from trail use to adoption
   - Innovators guide IFT-DSS development through feedback to IFT-DSS team member
   - Innovators help identify potential early adopters and develop proper communication strategies for reaching early adopters
2. Innovator and early adopter groups are small enough to be reached individually by phone, email, or in person.
   - Early and late majority groups are too large for individual contact—mass communication methods such as webinars, online training courses, and *JFSP Digest* will be most successful
3. Key concept is to advance the awareness of the groups evenly within communities to avoid negative disconnects among groups.



Motivation for Community Development

Why is it necessary to consider the interaction of stakeholder communities in order to facilitate the successful adoption and usage of the IFT-DSS?

1. It is rarely sufficient to engage only the end-user community because technology development teams allied with the early adopter end-users rarely have the staying power to move a new software technology from innovation to institutionalization.
2. To produce a successful product, it must be a whole product; that is, the technology introduced in addition to all other necessary tools for the technology to be accepted and used.
3. To deliver the IFT-DSS as a whole product, we need the help and support of the six stakeholder groups identified.

Stakeholder Benefits

Every stakeholder group must receive benefits for participating in the IFT-DSS.

User Benefits

- Universal access and version control through the Internet
- Easy access to the necessary data (as available)
- Choice of software tools from a common interface
- Easy setups for the most common analyses
- Custom solutions for advanced users in unique situations
- A single Graphical User Interface to master

Advantages for Service Providers and Model Developers

- Provides developers with software to software communication standards
- Allows developers to improve functionality behind the scenes
- Provides model developers instant access to a large user community
- Reduces the cost of developing and fielding software tools
- Automatically sends model use reports to developers on a periodic basis

Advantages for IT and Software Managers

- Ensures that security requirements are met
- Ensures that agency IT policy has been followed

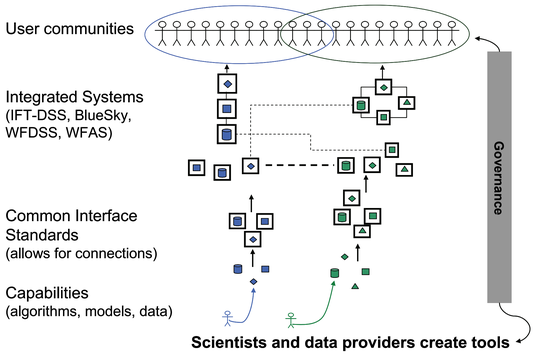
Advantages for the Governance Community

- Organizes all fuels management software services into a single service-oriented architecture (SOA) system, making supervision manageable
- Allows informed management decisions on funding, expansion of functions, and prioritization of effort
- Enhances the ability to provide guidance on processes and quality control
- Increases agency operating capabilities by focusing scarce resources on high priority functions
- Provides a proof of concept test case to determine whether a few SOA systems can organize all or most fire-related software tools

DISCUSSION

One of the strategic goals of the Software Tools and Systems Study is to create a streamlined approach for developing and organizing fire and fuels software applications and making them more readily available to the user community.

The vision is that a small number of broad-scope collaborative SOA systems (e.g., WFDSS, BlueSky, IFT-DSS) can organize and make available all or most of the software tools used in the fire and fuels domain. Beginning with BlueSky for smoke modeling, WFDSS for real-time fire response planning, and IFT-DSS for fuels treatment analysis and planning, the same software architecture can be used to address other focus areas within the fire and fuels arena.



ACCESS TO THE IFT-DSS

IFT-DSS Proof of Concept System

Access to the IFT-DSS proof of concept system is available at:

http://iftdss.sonomatech.com

The Software Systems and Tools Study Website

Access to the IFT-DSS graphical user interface mock-ups is available at:

http://frames.nbii.gov/jfsp/sts_study

KEY RESULTS

1. Innovators and early adopters are engaged, enthusiastic, and have awareness of new information much earlier than anticipated.
2. Webinars, presentations, and word-of-mouth communication strategies have proven an effective means of advancing the awareness of IFT-DSS project goals.
3. Through community development efforts to date, we have achieved acceptance of the IFT-DSS concept before the software is available.

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*Adapted from Rogers, E. M. 2003. *Diffusion of Innovations* (5th ed.) New York: Free press.

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