

Expanding Audience and Capacity of Electronic Networks for Sustainable Development (Spinning the Web Phase I)

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Final Report

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Project undertaken by
International Institute for Sustainable Development (IISD)
in collaboration with
Development Alternatives (DA)
Environnrmnt et Développement de Tiers-Monde (ENDA-TM)
Fundación Ambiente y Recursos Naturales (FARN)
Regional Environment Center for Central and Eastern Europe (REC)
and
Earth Council (EC)
International Development Research Centre (IDRC)
Stockholm Environment Institute (SEI)

Project Team:

Heather Creech (IISD)	Rossen Roussev (REC)
Terri Willard (IISD/IDRC)	Francisco Mata (EC)
Scott Anderson (IISD)	Kevin Hudgins (EC)
Neal Thomas (IISD)	Carole Joling (IDRC)
Richard Stokes (IISD)	Alison Ball (IDRC)
Rod Araneda (IISD)	Arno Rosemarin (SEI)
George Varughese (DA)	Miles Goldstick (SEI)
John Borgoyary (DA)	
Taoufik Ben Abdallah (ENDA-TM)	Andrei Henry (Intern – ENDA-TM)
Muthoni Muriu (ENDA-TM)	Fred Kunzle (Intern – FARN)
Awa Dione (ENDA-TM)	Rochelle Lawson (Intern – SEI Tallinn)
Moussa Fall (ENDA-TM)	Chad Nelson (Intern – IISD)
Steven Humphries (ENDA-TM)	Natalie Pauwels (Intern – SEI)
Dominique Revet (ENDA-TM)	Rachel Thompson (Intern – EC)
Daniel Ryan (FARN)	Zoltan Toth (Intern – REC)
Patricia Aizersztein (FARN)	Frank Tulus (Intern – DA)
Popi Kleinman (FARN)	
Julia Otamendi (FARN)	

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Synthesis

The goal of the Spinning the Web project was to foster the creation of an Internet-based distributed electronic network of sustainable development knowledge brokers. A Network Coordination Unit (NCU) based at IISD provided advice and assistance to eight partners in designing and implementing the project. Four of these partners located in developing regions also received grants to assist them in project implementation. Partners drew on each other's expertise and that of the NCU to expand and enhance the information they provided on their own Web sites. As part of Spinning the Web, the NCU created a graphical interface and database engine to link together the research and tools of the partners in the network. While each partner maintained its own Internet site, this interface - the SD Gateway - was designed to help put the knowledge bases of the partners into a broader context. Through this project, decision-makers in all parts of the world gained better access to the tools for sustainable development planning and were able to share experiences globally about what actually works. By June 1998, seven participating organisations had signed the Spinning the Web Network Agreement, which provides the framework for continued collaboration on communicating sustainable development knowledge and the structures and tools to do so effectively.

Research problem

The interrelated nature of social, economic and environmental challenges has created a significant need for cooperation between people within and outside of regions, as well as between governments, local communities, NGOs, businesses and other stakeholders at all levels. The importance of access to high quality, timely information on these issues is critical to stakeholders and can mean the difference between the success and failure of many initiatives. When the Spinning the Web (STW) project was conceived in March 1996, it was clear that the Internet could become a significant force for promoting sustainable development policies and practices at all levels. Organisations from around the world were rapidly developing their own Web sites and attempting to engage decision-makers in the tasks at hand.

However, most of these organisations faced significant challenges as they attempted to create and promote online sustainable development tools and services:

- The rapid explosion of Internet content, and lack of corresponding progress on search engine technology, made their content extremely difficult to find. Web content was generally becoming more commercial in nature and established Northern sites were growing exponentially as they entered their 3rd or 4th phases of development. What sustainable development content was freely available was therefore dominated by a handful of Northern and United Nations agencies.
- Senior decision-makers from around the world in business, government, and civil society are among the key target audiences for sustainable development information. It was difficult to reach them directly through the Internet since they often lacked access to the new technologies or had been frustrated by earlier attempts to locate reliable, timely information on the Web. They continued to rely more heavily on traditional forms of communication and information gathering.
- Other decision-makers were unfamiliar with or hostile to the concepts of sustainable development. These individuals were unlikely to invest time seeking information about the topic.

Spinning the Web was initiated in April 1996 to figure out how to create a sophisticated, yet accessible distributed Internet network which would balance the voices and perspectives of developing and industrialised regions to draw in a broader range of people to sustainable development issues. The project sought not only to inform, but also to use the new technology in innovative ways that engage the attention and commitment of decision-makers in their work for global and local change. We wanted to take many more people from all sectors beyond their current awareness of sustainable development to an ownership of these concepts and an understanding of how to put them into practice. Our goals were to give decision-makers in all parts of the world better access to the tools for sustainable development planning, to globally share experience about what actually works, and to compound the current international knowledge base by new forms of electronically facilitated dialogue.

The International Institute for Sustainable Development (IISD) was particularly interested in playing a leadership role within Spinning the Web. IISD's mandate is to promote sustainable development in decision-making internationally and within Canada. Spinning the Web has provided us with the partnerships needed to promote the sustainable development knowledge and experience from the South and from emerging economies to decision makers around the world. We believe that knowledge networking is a new approach to advance sustainable development more rapidly, by bringing together groups of leading institutions to aggregate and create new knowledge. Spinning the Web has become our collective testing ground for understanding how to put the knowledge and the "work" into a knowledge network.

Research findings

Findings resulting from Spinning the Web have been wide-ranging. They have included insights into the ways in which key audiences use the Internet, the work entailed in creating thematic gateways which lead decision-makers to distributed information resources, the importance of well-structured member Web sites, and the role and operations of knowledge networks.

If Canadians are to play a role as international information brokers and creators as per the recommendations of the 1997 "Connecting with the World: Priorities for Canadian Internationalism in the 21st Century," these lessons are as valuable for Canadian organisations as they are for organisations in developing countries and elsewhere. While we have provided training on knowledge networking for over fifty young Canadian interns, the real beneficiaries of this knowledge have been the intern's host organisations overseas (e.g. WBCSD, UNEP, IUCN, FLACSO, SDPI, Panos). While this has led substantial international interest in the network and what it has learned about the institutional requirements of effective knowledge systems, inquiries from Canadian based organisations have been limited. In Phase II of Spinning the Web, we must expand our outreach activities in Canada beyond such internationally-focused organisations as the Canadian International Development Agency (CIDA) and the Commission for Environmental Cooperation (CEC) to encompass a broader range of Canadian sustainable development organisations.

The Internet and sustainable development audiences

The rapid growth of the Internet around the world means that at least 50% of Internet users at any given time are new to the technology. All systems must be designed with these new users in mind. Access to the Internet is accelerating faster in developing countries than anywhere else. The number of Internet users will almost quadruple in Africa, Latin America and the Caribbean, and Central and Eastern Europe by the year 2001.¹ However, due to government policies and fiscal constraints, the telecommunications infrastructure in places such as India, Central and Eastern Europe, and West Africa is still incomplete. Predictions indicate that while there will be 827

¹ Panos London. The Internet and poverty: Real help or real hype? Panos Briefing No. 28 (April 1998).

million email users by 2001, only 436 million users will have access to the World Wide Web and be able to post their own Web pages.²

In the next two to three years, there will continue to be a need for organisations and technologies that can create a seamless link between the high tech world of the World Wide Web and traditional communications channels. In order to facilitate these processes, World Wide Web content must be designed for maximum compatibility with low end and text based interfaces. Any sophisticated databases and programming must be “hidden” on the server and used to generate very simple and fast HTML outputs. In addition, there will continue to be a strong demand for individuals who can translate knowledge to and from the Internet.

The development and packaging of appropriate content is a key concern of all partners in Spinning the Web. The Internet is best used for delivering timely, reliable, and user friendly information to decision-makers around the world. Raw data is not enough; it has to have an added value and be packaged in the right way for the users. Feedback received by partner organizations indicates that these users include a substantial number of junior level and mid-level decision-makers. They are often individuals who have attended university and been exposed to Web products and services through free university access. They are fairly comfortable seeking information on the Web and will often use it as a research source when preparing oral and written briefings for senior decision-makers. They serve as important links between online and traditional communication methods.

Internet gateways

Internet gateways are converging in their format and approach. This trend promises to continue over the next two years with the launch of large commercial gateways such as the Mining Co. (<http://home.miningco.com/>). To be effective, a gateway must combine the reach of a search engine with the selectivity of a directory in which a human editor highlights the most recent and relevant content for a user. Neither approach alone is sufficient. Search engines return too many results for a beginner and directories can never keep up with the pace of Internet growth. However, a good gateway can utilise a directory’s database structure and take advantage of automated search engines to answer out-of-the-ordinary questions and to help manage the large number of records. Contrary to the initial assumptions made in the project, technology has not evolved to the point where the creation of electronic flags and filters for content can be automated.

While a few large commercial ventures hope to reap profits from gateways to the entire Internet, the greatest competition and innovation is occurring at the level of thematic gateways. As communities of interest coalesce on the Web, they are finding it necessary and desirable to assist their members and other interested individuals through their content. These gateways often assume their own identities with unique names, logos, URLs and designs distinct from that of any site within the community. Such distinction allows them to be seen as independent and reliable. This is important since thematic

² Panos London. *Ibid.*

gateways gain their usefulness from providing thorough access to the most reliable content on the subject. Quality control of content is essential to maintaining the usability of the site.

In the case of the SD Gateway, we have chosen to restrict the majority of information to that emerging from the Spinning the Web network of organisations. In essence, we judge quality at the institutional level, rather than the document level. This has resulted in the SD Gateway giving a large profile to a small group of organisations, largely dealing with sustainable development issues from a southern perspective. We have also included links to a small number of the other best non-network resources on the Web. These non-network links provide in-depth focus on narrow concepts which sustainable development organisations may not provide. They also help to balance out regional and global perspectives.

Experience with the SD Gateway has shown us that no gateway site can be totally closed. The Internet has traditionally been an open forum and users expect that they will have the opportunity to promote their own information through any other site. We must provide avenues for non-network members to become involved or risk their frustration and non-return to the site. This participation has been accomplished through a variety of open directories including a job bank, calendar of events, list of electronic discussion forums, and the Sustainability Webring.

Establishing a gateway site requires a thorough understanding of the subject matter and the relationship between concepts. This is necessary in order to construct a useful information architecture with a clear classification hierarchy and keywords. This is difficult in the case of sustainable development with its vague definitions and amorphous knowledge base. Every organisation around the world has interpreted the concepts and their structure slightly differently. These differences often reflect deeply felt values. Recognising the problems inherent in attempting to create a definitive sustainable development metathesaurus (differences in interpretations, insufficient time to agree on terms and so forth), the Network Coordination Unit at IISD opted for organising the information resources of the partners according to six views that users have of the world of sustainable development:

- Dangers – the critical challenges to sustainability today
- Livelihoods – sectoral solutions and concerns
- Places – where sustainable development is being implemented around the world
- Resources – the key environmental, social, and economic resources which should be conserved and enhanced through sustainable development
- Roles – approaches and views of a wide variety of stakeholder groups ranging from business to government and civil society
- Strategies – actions which are being taken to achieve sustainability

While this approach has proven successful so far, the classification hierarchy under each of these main headings continues to be refined.

Individual Web sites

A good gateway requires that partners maintain high quality content on their own independent Web sites. At the minimum, each site must provide reliable information supported by clear writing and a simple and fast design. If possible, content should be made available in at least one or two major languages. Most Web users are adept at translating from a major language to other regional languages (e.g. French to Wolof, Spanish to Portuguese), so budgeting for the translation of content into a selection of major languages should suffice. To provide the greatest benefits to users entering from the gateway, the site must also possess good navigation that will lead users deeper into related content on the site. It must also provide meta-tag support for its content to fully support the network search engine. While these are generally characteristics of a good Web site, they become increasingly important as an increasing number of users enter a site through pages other than the designated home page.

The creation and maintenance of high quality, timely content requires a thoughtful process at each organisation. This process will be very different within each organisation and is dependent on its institutional structure and history. It is important to keep in mind that Web sites are increasingly seen as a high profile marketing tool for organisations. When organisations are undergoing restructuring, work on the Web will often halt until new directions are agreed upon. Both ENDA and IISD experienced this during Phase I. These partners have found that such situations actually provide a window of opportunity to create sites less tied to organisational program structures and more reflective of general themes of importance to users.

An important finding of Spinning the Web Phase I has been that NGOs are generally not as far along in their ability to use the Web as assumed. The initial search for partners took longer than expected due to the difficulty of identifying sustainable development organisations which met the criteria of having regional linkages and the human and technical infrastructure to pursue advanced Web applications. While connectivity is becoming increasingly accessible, funding for computers, technical staff, internal policy dialogue and training has been lacking.

Knowledge networks

The final, and perhaps most important, finding of the Spinning the Web project has been that it is very difficult to build a distributed network of sustainable development information without creating a distributed network of sustainable development organisations. The ongoing creation of new content and the monitoring of links between existing content requires sustained effort by all organisations involved in the network. Since the quality of each member's information has repercussions on the overall impression of visitors through the Gateway, each member of the network has some amount of self-interest in assisting with the improvement of all other sites.

This network must have a formal agreement to clearly delineate responsibilities. It must also truly be multi-lateral and enable partners to work together equally. This is especially true if the network is to be sustainable and outlast any particular project funding. It must also have a clear focus if it is to lead to meaningful cooperation, learning and action. In the case of Spinning the Web, the network has decided to focus on communicating sustainable development knowledge and the structures and tools to do so effectively.

Finally, we found that while Internet technology may facilitate the operations of a knowledge network, other communications means must be used as well. It takes a long time for relationships to be built virtually and online communities require even more trust and time than physical ones. Since participating organisations in Spinning the Web were selected by IISD, in part based upon their different regional emphases and issue focuses, it should not be surprising that many of the organisations were unfamiliar with each other. There were notable exceptions, such as previously existing relationships between REC and SEI, and DA and the Earth Council. Real multi-lateral cooperation on the project only began in June 1997 when project staff from each organisation met face-to-face with each other in Toronto. Subsequent meetings have improved network relations even more. The tone of e-mail discussions has relaxed and partners feel more confident providing critical feedback to the NCU. Nevertheless, by the end of Phase I, it was still difficult for partners to talk openly about the institutional policies and procedures that support Web content creation at each organisation. This information or lack thereof, may be seen by as too sensitive to discuss since it often touches upon institutional politics.

Strong institutional relationships are critical to the health and sustainability of knowledge networks. Rapid knowledge creation can best occur when individuals from each organization feel empowered to engage in full and frank discussions of common interest. If an institutional culture discounts the value of outside discussions or professional development in favour of internal projects, full and frank discussions will not be forthcoming. In order to gain from a network, everyone has to be willing and able to give. Network discussions may also break down if tangible benefits are not quickly forthcoming. This situation may occur if a number of organisations do not have the resources available to implement the solutions uncovered through their collaboration. In the case of Spinning the Web, we found that while partners may have learned how to improve their Web content delivery, they often lacked the human resources necessary to implement the solutions.

Satisfaction of objectives

1. Overall objective – To foster the creation of a highly sophisticated, yet extremely accessible distributed network designed to draw a broader range of people into the web of information required for sustainable development action.

Achievements:

- The Spinning the Web network with a formal governance agreement signed by seven partners

- The SD Gateway which integrates the knowledge bases of the partners
- The Sustainability Web Ring which expands access to SD information

2. Specific Objectives –

- a) Developing the initial network of cooperating organisations;
 - IISD, IDRC, REC, ENDA, FARN, DA, SEI, and the Earth Council. In December 1997, partners decided not to increase the size of the core network until a second phase of the network could begin.
- b) Designing and implementing an interactive interface and tools to help decision-makers make optimal use of the information provided through the network;
 - The SD Gateway with its related modules and directories including a search engine indexing all partners sites.
 - Numerous new modules and electronic forums developed by individual partner organisations
- c) Expanding the knowledge base through linkages to information resources held on-line and off-line by key organisations around the world; and
 - The SD Primer on the Gateway provides access not only to partner information, but to important information resources on the Web from other organisations as well.
- d) Balancing the knowledge base with input from regions throughout the world
 - New and expanded information on partner Web sites has increased the amount of regional sustainable development information on the Internet.

Project design and implementation

The project was initially designed for IISD and other partners to learn by doing. No research component was included in the project proposal or Memorandum of Grant Conditions. The project design had two major components:

- constructing a gateway to sustainable development information; and
- assisting selected members within the network of organisations to provide expanded content reflecting regional sustainable development perspectives.

The implementation of each component was undertaken in a fairly independent manner.

Construction of the gateway and its tools

The gateway was envisioned as an extension and modification of one of IISD's existing Web sites - IISDnet (<http://iisd.ca>). However, early work on the Community Adaptation and Sustainable Livelihoods (CASL) section of the site demonstrated the difficulties of reworking the existing site to provide linkages with other partners in a network.

By October 1996, work began on the design of an independent gateway that would rely on a database engine to help maintain and organise links to partner content. The pilot site was also designed to include short articles that would add value to partner links by

introducing users to the variety of views on sustainable development topics within the network. The site was demonstrated before a number of audiences and received positive feedback for its visual design and use of sophisticated Internet technologies. However, this pilot site received negative reviews from network partners who found the five-frame interface to be confusing and slow to load.

Two further redesigns were undertaken. Each redesign reduced the number of frames and removed user customisation options. These technologies were found to hinder the ability of many new users to find the information they were seeking. The redesigns also reduced the prominence of the background articles, as it became clear that they could not be written nor updated with the speed initially envisioned. In addition, each redesign increased the availability of non-member content in response to the demand by visitors for ways to interact with the site. Once supplementary funding from IDRC was received, we were also able to translate the interface and tools into French and Spanish to benefit users in Latin America and West Africa.

Behind the scenes, each redesign required increasingly sophisticated database programming in order to provide the NCU with the tools necessary to maintain and update the site. Over 90% of the HTML files in the current version of the SD Gateway are automatically generated on a weekly basis from style sheets and information in databases. This has vastly improved the ability of the team to maintain the site in three languages. The site is also automatically generated, modified, zipped, and FTP'd to REC on a monthly basis to update the European mirror.

One substantive change in the implementation of the gateway was the gradual move away from expecting each partner to be equally able to update and maintain its own links in the SD Gateway. Early in the project, a password protected Extranet was created to enable partners to perform these tasks. Supporting documentation on indexing within the SD Gateway system was also made available. This proved unfeasible for most organisations since it would have required broad staff understanding of the indexing system. The system has worked best for FARN - a small organisation, with a small amount of content, in which the responsibility for working with Spinning the Web has been assumed by library staff already experienced with indexing. Updates of other links to partner content have been done by the NCU with help of a search engine that can identify new files on each site for review. This action has reduced the workload of the partners and increased the consistency of indexing.

Creation of new content and tools on sustainable development by partners

Funds for content development activities were made available at the beginning of each project year to the four core regional partners for content development. Supplementary funding from IDRC provided additional support to these core partners to offset the costs of telecommunications and publishing their existing knowledge bases online. The creation of workplans with each partner proved problematic due to the conflicting views of partners on whether content development was to be undertaken individually or by groups of partners.

It was not possible in Phase I to undertake joint content development since each partner was at a very different level of experience and the technical staff in each partner organisation had little knowledge of the substantive research expertise within the other partner organisations. Even upon the completion of matrices indicating potential topics for collaboration, it proved difficult for technical staff to reach out and engage their own research staff in creating content with the research staff of another partner organisation. Spinning the Web was too narrowly structured institutionally within each partner organisation with the funding flowing only to the technical group. Partners therefore developed and implemented their workplans separately from each other.

In large part, the partners found it most effective to use the funding as leverage to other Internet projects. Spinning the Web leverage enabled partners:

- to make the time to monitor and evaluate evolving Internet technologies for possible implementation on their sites;
- to train research staff in the use and development of Web content;
- to establish policies and processes for the strategic use of the Internet by the organisation;
- to offset losses of funding for technical teams as the organisation responded to reduced core funding from major donors;
- to undertake critical updates of online databases constructed under other completed projects; and
- to demonstrate commitment to and competency in Web development to other potential donors.

While some of these activities had outputs within the project life, they can be expected to have a longer-term impact on the organisations and their long-term ability to develop successful Web content.

Usefulness of partnerships in achieving the project objectives

This project would have been impossible to execute without the full participation of all project partners. To encourage participation, IISD contributed financially to support the designation of one staff member at each core regional partner as an IISD Associate. Unfortunately, the individuals selected were not always the staff most closely involved with the implementation of the project. It was difficult to identify individuals with the appropriate levels of authority, reach within their organisation, and understanding of the technologies involved. If the person was too senior, he frequently had little time for the project or interest in details of Web site management. He tended to delegate the work to other more junior staff. Over the course of the project, this resulted in two levels of co-operation being established:

- between the senior communications staff at each institute about future project development and the potential for forming strategic alliances; and
- between junior communications staff to answer pressing questions about how to implement the project and to use the Internet more effectively for sustainable development communications.

Together, these two levels of cooperation were able to address most concerns of the network. Senior staff identified the need to increase the emphasis on capacity building within the network and to create a multi-lateral agreement within which all network members (funded and unfunded) would be on equal footing. This resulted in the creation of a formal network agreement that delineates the responsibilities of all partners and specifies the processes for making a variety of decisions pertaining to the network. Junior staff helped us to understand the significant limitations they still faced when trying to use the Web as a tool for information dissemination. Their cooperation in reviewing the SD Gateway and their insights about how regional users access the Internet also added substantively to our collective knowledge about what works and doesn't work on the Web.

We experimented briefly in this phase with creating a category in the network for Associate Members and nominated the Sustainable Development Policy Institute (SDPI) as the first such member. This approach was not particularly useful. In further development of the network, we will look at other ways to nominate and engage organisations from within the regions of network members.

Perhaps the most challenging aspect of partnerships within the project was in trying to create a role for IDRC as an active project participant. IDRC has a number of initiatives concerning information and communications for development, not to mention a large in-house Research Information Management Services (RIMS) department. IISD and IDRC had hoped to uncover a large number of synergies between these endeavours. To promote greater interaction between IISD and IDRC, the Spinning the Web project officer was hired by IDRC and seconded to IISD.

Spinning the Web benefited from IDRC's insights through discussions regarding such diverse subjects as meta-thesauruses, publications catalogues, online newsletters, database integration, and network-induced institutional change. It is less clear whether IDRC benefited fully from these interactions. It seemed that as a donor organisation, IDRC was dealing with different types of information and Web challenges than most of the other partner organisations. IDRC's needs were complex and would have taken most of the STW team's time to adequately address. A proposed collaborative project to develop a module on the "Well-being of Nations" did not materialise due to delays by the author in publishing his work.

Project outputs and dissemination

- Knowledge creation
 - SD Gateway <<http://sdgateway.net/>> with mirror at <<http://sdgateway.rec.org/>> in English, French, and Spanish including:
 - SD Primer - Basic encyclopaedia of sustainable development covering over 150 topics. By the end of the project, the Primer contained 39 peer reviewed background articles, 1407 links to selected STW partner content, and 243 links to other important Internet Resources.

- Sustainability Webring – distributed navigation system allowing users to quickly navigate between the Web sites of the 34 participating organizations (38 other organisations applied, but were rejected since they did not meet all criteria for participation)
- SD Job Bank - contained a total of 84 Jobs with an average of 9 active records at any time
- List of Electronic Discussion Forums - 94 annotated records and information on how to join
- Calendar of Events - contained 444 records; integrated with the SD Primer as well as a stand-alone directory.
- Search engine allowing full-text searching all partner Web sites in addition to the SD Gateway itself.

REC also produced a CD-ROM version of the SD Gateway interface enabling access to the broad range of information for those constituents without interactive Internet capabilities. This was distributed to its regional offices throughout Central and Eastern Europe.

- New Web products and services:
 - Rio+5 Forum Web site <<http://www.ecouncil.ac.cr/rio/>> - containing all preparatory reports submitted to the Earth Council including 67 national reports, 11 regional reports, and 70 special focus reports
 - Pilot Development Alternatives Information Network (DAInet) Web site <<http://www.ecouncil.ac.cr/dainet/>> - a regional information system for sustainable development in the Indian subcontinent
 - Estonia Agenda 21 site <<http://www.agenda21.ee/>> - houses an organised collection of publications, references, events, projects and links related to sustainable development in Estonia
 - Sustainable Development Initiatives Database <<http://www.rec.org/REC/Databases/SDInitiatives/SDInitiativesFind.html>> - includes 28 annotated records of CEE initiatives and full text versions of 10 national policies and action plans
 - Community Adaptation and Sustainable Livelihoods <<http://iisd.ca/casl/intro+defs/default.htm>> - IISD module including an online handbook on conducting participatory action research about rural livelihood strategies
 - Environmental News Service <<http://www.rec.org/Default.shtml>> - regularly updated news and links to environmental content of interest to CEE users. Replaced by Green Horizons media alerts in October 1998.
 - Enviro-Phantom <<http://phantom.rec.org/>> - full-text search engine/Internet crawler for Central and Eastern Europe-related environmental and sustainable development-related documents
 - SD Timeline <<http://iisd.ca/timeline/>> - MacroMedia Flash presentation of international events from 1962-1997. Print version also available in poster format.

- Internet broadcasts:
 - Rio+5 Forum <<http://www.ecouncil.ac.cr/rio5/>> with 5 mirrors during the conference at:
 - ENDA (Senegal) <<http://www.enda.sn>>
 - SEI (Sweden) <<http://www.sei.se>>
 - JCA-NET (Japan) <<http://www.jca.ax.apc.org/index-en.html>>
 - Pegasus Networks (Australia) <<http://www.peg.apc.org/>>
 - PanAsia Networking (Singapore) <<http://www.panasia.org.sg/>>
 - Global Knowledge '97 plenary sessions
 - FARN colloquium on "Propuestas de politicas publicas para el desarrollo sustentable"
- Interactive electronic forums for discussion of:
 - Desertification - under the auspices of RIOD
 - International trade - groups working on trade in Africa
 - Renegotiation of the Lome Convention - NGOs from Africa, the Caribbean, and the Pacific
 - Lome - West Africa - West African NGOs working on the Convention
 - Health and rights for West African francophone women
 - Issues of concern to DAInet partners
- Improvements to existing sites:
 - FARN - information on the Buenos Aires Sustainability Programme, the Legal Environmental Information Centre, and six full-text publications
 - ENDA - information on energy and gender issues
 - DA - program information and full-text articles from 5 issues of their newsletter
- Network support products:
 - SDGate-L partnership discussion list and archives
 - STW Extranet - password protected archive of Network documents and online forms for adding and maintaining partner links to SD Gateway.
- Policies and training materials
 - ENDA electronic communications strategy and elaboration of an appropriate thematic information architecture to guide site redesign
 - DA feasibility study on Internet connectivity options concluding that radio-modem was the most viable and cost effective option in the current Indian context.
 - Internet training materials for ENDA staff and IISD youth interns
- Started under STW Phase I, to be completed in Phase II
 - Indian NGO database - STW funding enabled data processing. The print version of the directory is currently available. The CD-ROM and online searchable database will be available in 1999.
 - Indian funding database - Compiled a database of the schemes, eligibility criteria, and procedures for applying to roughly 100 donor agencies (national, bi-lateral, and multi-lateral).

- DAI-net Data Centre on Joint Forest Management - completed several rounds of discussions with organisations and state government officials who are working on joint Forest Management and Non Timber Forest Products.
- SD Gateway Introduction to Sustainable Development module
- Training
 - Sustainable Development Policy Institute (SDPI) - Masood Hussain Quraishi – Spring 97
 - IISD/Tata Energy Research Institute (TERI) PEERS program workshop – Nov 97
 - Earth Council Institute Canada (ECIC) – Kim Peters – Jan 98
 - Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH – Doris Klein – Apr 98
 - 23 Canadian interns trained for placement international host organizations (1997).
33 Canadian interns trained to be placed with host organizations during Phase II (1998).
 - 11 DAI-net members
 - ENDA Cyberpop program - trained poor youth from Dakar in the use of electronic communications to provide information support and create community telecentres.
 - ENDA GRAF program – networked and trained area credit unions
- Presentations at numerous conferences including:
 - The World Conservation Union (IUCN): Annual congress (Montreal, Canada – Oct 96)
 - Global Environmental Options: “Sustainable Development and the Net” workshop (Washington, DC, USA – Dec 96)
 - Global Knowledge '97 (Toronto, Canada – Jun 97)
 - Local Knowledge (Toronto, Canada – Jun 97)
 - Asia Connects: Student conference (Winnipeg, Canada – Oct 97)
 - Manitoba Library Association: "Partnerships for the Environment" conference (Winnipeg, Canada – Apr 98)
 - STW press conference (San Jose, Costa Rica – Jun 98)
 - Massachusetts Institute of Technology (MIT) : Cyberspace for Global Sustainability workshop (Boston, US - Sep 98)
 - Development Alternatives highlighted the role of “Spinning the Web” in various meetings related to sustainable development
 - ENDA promoted STW at a number of meetings which they organised or attended

Capacity building

Only modest resources for capacity building were included in the project, since partnership criteria assumed the existence of institutions who already had the capacity to create advanced Web products and services. Any capacity building was seen as a two-way street in which IISD would learn as well - especially about what was and was not working effectively in developing countries. However, initial assumptions were not borne out in reality for many of the project partners.

Institutional reinforcement and sustainability

All core partners utilised some amount of the Spinning the Web funding for the institutional reinforcement of their organisations. Two out of the four partners (ENDA and FARN) used their grants primarily for this purpose. In addition, the placement of young Canadian interns with partner organisations through the CIDA-DFAIT International Internship Program provided these organisations with needed additional resources.

Equipment

Technical capacity was built at REC, ENDA, and FARN through the purchase of computer software and hardware and the upgrading of Internet connections. These expenditures have allowed the partner organisations to increase the number of staff who are able to use and to produce Internet content. IISD facilitated some equipment purchasing and shipping to Senegal at ENDA's request, when international commercial suppliers were found to be unhelpful, untimely and overpriced. Purchases included:

- FARN - 2 PCs for LAN in the Legal Environmental Information Centre. Zip drive.
- ENDA - Server. Computer. Printer. LAN extension.
- REC - upgraded Internet connection; digital camera; search engine

Training

Training was undertaken in large part by the IISD Youth International Interns assigned to each partner. Interns in Tallinn (SEI), Dakar (ENDA), and Buenos Aires (FARN) spent large portions of their time training technical and program staff in the use of Internet tools and resources. Development Alternatives, ENDA and FARN all commented on the help they received in website architecture and navigation, and the use of different approaches (e.g., basic html, frames, etc.) These intensive training periods were supplemented by the more informal discussions and knowledge sharing which occurred through the SDGate-L listserv. In addition, IISD, Earth Council, and REC staff were often consulted on specific technical issues (e.g. Java, search engines, Internet broadcasting, compilation of site statistics) when the need arose. IISD's travel costs for Spinning the Web were substantially reduced by sourcing the funding for intensive capacity building through the Youth International Interns Program.

Informal learning opportunities also arose through collaboration and joint testing of software. For example, the Earth Council and IISD built their skills in Internet RealAudio/Video broadcasts by sending a joint team to Brazil to cover the Rio+5 meetings. Development Alternatives, IISD, the Earth Council, and SEI built confidence with Internet conferencing while IISD and REC tested the utility of other groupware tools such as Teamwave.

Marketing and outreach support

In the highly competitive world of Internet products and services, many partners expressed the desire to pool their efforts in order to expand the visibility of their own work. STW partners assisted each other by cross-linking their online content and mentioning partner outputs in newsletters, announcements, and meetings. In addition, the marketing of the SD Gateway has assisted partners to reach broader audiences and achieve a higher profile. In September 1998, we began an ad banner campaign with Yahoo.com that has shown early signs of increasing the profile and traffic of the SD Gateway.

Capacity building of women

Spinning the Web has had a positive impact on the capacity of women to take advantage of the new communications technologies. Through Spinning the Web, ENDA has begun to play an important role in looking at issues surrounding women and electronic communications in Africa. ENDA staff are also involved in organising activities on this theme for the 40th anniversary of the Commission Economique des Nations Unies pour l'Afrique (CEA). Other capacity built of women through the project has been dependent on the situation of Internet team and culture in each organisation. In the cases of FARN, IDRC, and IISD, the Internet team has grown out of traditional library and information services teams. These organisations have a high percentage of women now involved with the management of their Web sites. They have been extremely successful at building the technical skills of these female staff members to complement their existing knowledge about information architecture and communications.

In addition, the project has led to an increase of content on the Web about women in sustainable development. ENDA, in particular, has begun to upload its considerable French-language documentation on women's contributions to solving problems in the fields of desertification, shelter, health, and electronic communications.

Project management

Administration by IISD

The project team at IISD proved to be flexible in adapting the project to meet the needs of project participants. As the project evolved and the split between the needs of junior and senior communications staff emerged, the team at IISD responded by effectively dividing networking responsibilities. IISD's Knowledge Communications Program Director, Heather Creech, oversaw strategic dialogues with senior staff regarding future project collaborations and funding, while the Spinning the Web project officer and project assistant maintained an ongoing dialogue with junior staff about how to improve their Web products and services. By the end of the project, it became clear that Spinning the Web would require the efforts of two project officers to continue its work. One officer would manage the growing SD Gateway and one would more closely interact with

partners to ensure that workplans are being achieved and that capacity-building needs are being met.

IISD relied on a variety of tools to administer the activities of such a broadly distributed network:

- E-mail discussion forum - excellent for dissemination of capacity-building information from the NCU. Less effective when response was needed to an item.
- E-mail and phone chats (1-to-1) - good for building rapport and soliciting feedback or response from each network member. Usually these two methods had to be used in conjunction in order to get substantive feedback.
- Staff visits - Due to budget and time constraints, it was not possible for staff from each partner organisation to spend substantive time at IISD. REC and the Earth Council were the only organisations with which this was possible, while other partners spent a few days at IISD during the December 1997 partner meeting. IISD staff visits to REC, EC, SEI, DA and SDPI were made by Heather Creech, during which she was able to address strategic concerns of the network.
- Intern placements – IISD Youth interns performed an important role. Interns played an important role by increasing the visibility of Spinning the Web at the partner organisations where they were placed. Interns maintained regular e-mail contact with the NCU and with each other, leading to greater flows of information between organisations.
- 3 partner meetings - June 1997 at Global Knowledge 97 in Toronto; December 1997 in Winnipeg; and May 1998 in Costa Rica. Very effective for team building and decision-making.

Technical and other support and administration by IDRC

In the original memorandum of grant conditions, IDRC noted its desire to function as a partner in the work of STW, in addition to providing financial resources to the project. We believe that this project has significantly strengthened the working relationships between IISD staff and IDRC staff. We are grateful to have had the opportunity for many useful discussions with Renald Lafond, Carole Joling, Alison Ball, Robert Valentin, Robert Charbonneau, John Stevenson, Djilali Benmouffok and others. The visits of Carole and Robert to IISD and the return visits of Terri and Heather on several occasions to IDRC provided us with many good ideas and lessons learned from IDRC's previous experience with information and networks. In addition, contacts were made with Uganisha, PAN, RIMS, Acacia, and Bellanet to explore possible areas of overlap or synergies that would encourage the active participation of IDRC in the project. The one-on-one discussions held with individuals from each of these programs provided insights that were incorporated into the project design. IDRC participated in two of three network meetings.

However, IDRC has chosen not to sign the formal network agreement. RIMS staff have expressed concern that they may not have sufficient resources to fulfil all of the duties required of network members. They have decided instead to focus on improving IDRC's Web products and services and contributing to network discussions on a periodic basis.

While we look forward to their continued participation on this basis, it does raise an issue of how to incorporate the Internet knowledge of donor agencies into the Spinning the Web network. CIDA has recently expressed an interest in both funding and playing an active role in STW during a second phase – “to learn by doing.” Our experience with IDRC on this issue leads us to be more aware of the challenges in trying to find a role for financial supporters beyond the contribution of funds.

Impact

The Spinning the Web project has had reach and impact on three different communities:

- 1) Those interested in making effective use of the WWW for sustainable development communications -
Reach - Deep reach into partner organisations and their Internet project partners (DAInet, ENDA’s West African network)
Impact - Increased quantity and quality of sustainable development information on the Web. Experience in STW has also helped partners to leverage other funding sources for their Internet work. The STW NCU is increasingly contacted by organisations looking to become involved in the network in some way so as to learn from our experiences. Also, members are being contacted to provide consulting services to other organisations wishing to improve their Web sites. Such opportunities will be pursued more systematically in Phase II.
- 2) Those interested in knowledge network governance and operations -
Reach - Other knowledge networks initiated by IISD, with support and involvement of IDRC (e.g. Climate Change Knowledge Network; Trade Knowledge Network); Other networks (e.g. IUCN’s proposed regional policy network, the Global Knowledge Partnership; MIT’s Cyberpartnership for Sustainable Development)
Impact - These networks are studying the STW formal governance agreement as a potential model for their own network.
- 3) Those interested in sustainable development policies and practices-
Reach - Expanded online services that are more accessible to the public. Publications and resources made more available to a wider audience. Site statistics on the usage of the SD Gateway from May-September 1998 indicate a growing interest in the site both within Canada and internationally. From May to October 1998, nearly 2000 distinct Canadian users visited the site (12% of total users). They represented institutions ranging from universities (University of British Columbia, Guelph) to provincial governments (Manitoba, British Columbia, Alberta, Ontario, and Newfoundland). While roughly 21% of global Internet users are from the South, only 8% of the visitors to the SD Gateway can be identified as accessing the site from developing countries and countries in transition. This is not too troubling considering that the number of Web users globally continues to be only one-half the number of Internet users. It can be assumed that people with Web access in the South are considerably less than 21% of global Web users. Nevertheless, there is still a need to accelerate partners’ marketing of the SD Gateway in the South. Detailed statistics are

available in Appendix I to this report. Other indicators of the use of network information include:

- REC local offices handling increased information requests using the information provided on the SD Gateway.
- DAInet helping its partners to identify mailing lists of interest through the SD Gateway list of listservs.
- FARN receiving increased requests to consult their Legal Environmental Information Centre. They have also received feedback from Chile and Uruguay, where interest in FARN's online publications has been high.

Impact – The products and services developed through Spinning the Web have had an impact on the sustainable development community. Four primary indicators demonstrate the usefulness of the project outputs:

- Feedback from Development Alternatives and others on their use of the SD Gateway as a cost-effective research tool. They cannot afford the time traditional search engines require to locate comparable information
- An increasing number of repeat users of the site (approximately 750 per month by September 1998) who find it an effective means of locating high quality information on sustainable development.
- An increasing number of requests to join the Sustainability Webring as a method of gaining profile with their target users.
- STW members have requested numerous copies of the SD Timeline poster printed in part with funding from the American Library Association.

Overall assessment

As mentioned in the Spinning the Web Interim Assessment Report submitted to IDRC in July 1998, project participants have felt that Spinning the Web has added significantly to their ability to communicate sustainable development effectively through the Internet. Human and technical capacity building played a larger role than initially planned as resource shortages at partner organisations arose throughout the course of the project. All organisations in the Network have undergone a period of significant web site restructuring over the past two years. This has been a result of discussions, sharing of experiences and support across the network concerning the purposes and types of web sites that we are now creating. The SD Gateway and other content developed by the partners is attracting a growing audience of decision-makers to sustainable development principles and practices on the Internet. In addition, STW has added value to other projects and the forging of strategic alliances between member organisations. Awareness among researchers and senior management of the strengths of the partner organisations is growing.

Recommendations

IISD's experiences and our observations of other networks have led us to conclude that seven to ten years are required to create a network and to ensure its sustainability. Spinning the Web Phase I has exceeded our expectations by moving beyond the stage of creating of an Internet gateway to the development of a formal knowledge network. Our

principal recommendation to IDRC was that Spinning the Web be extended to a second phase. This recommendation was accepted and IDRC has provided funding for an additional two years of activities under Spinning the Web. Funding has also been sought from other organisations in order to broaden the participation in and international exposure of the network. At the time of writing this report, we are awaiting CIDA's signature on a grant for support for Phase II. During Phase II, network members will work to:

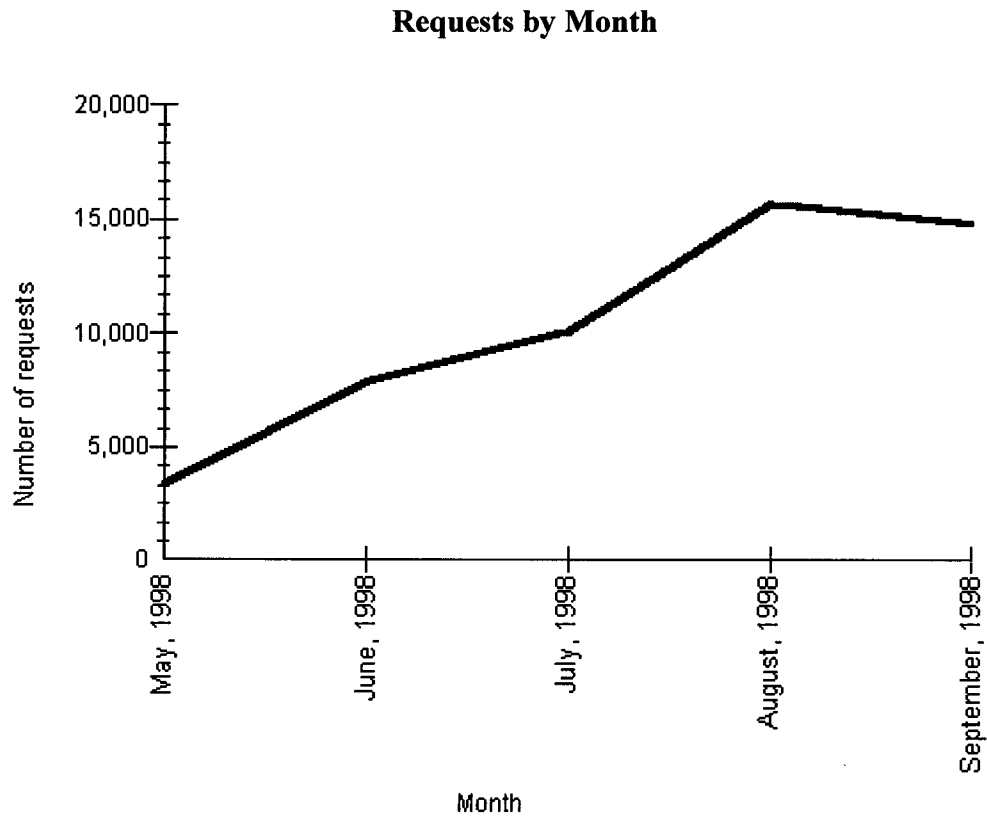
- Operationalise knowledge networking within the current core membership of the Spinning the Web network;
- Expand the knowledge network to include members from new regions;
- Establish principles and protocols of knowledge networking;
- Improve tools for measuring the success of knowledge networking;
- Test "virtual" communications and collaborative work tools;
- Deliver the combined knowledge base of the Spinning the Web network on the Internet;
- Exchange technology and SD knowledge across the network, through specific demonstration projects;
- Transfer the Spinning the Web knowledge networking model to other regional and international networking initiatives

These activities will lead to significant contributions from Spinning the Web members to the Global Knowledge 2000 efforts.

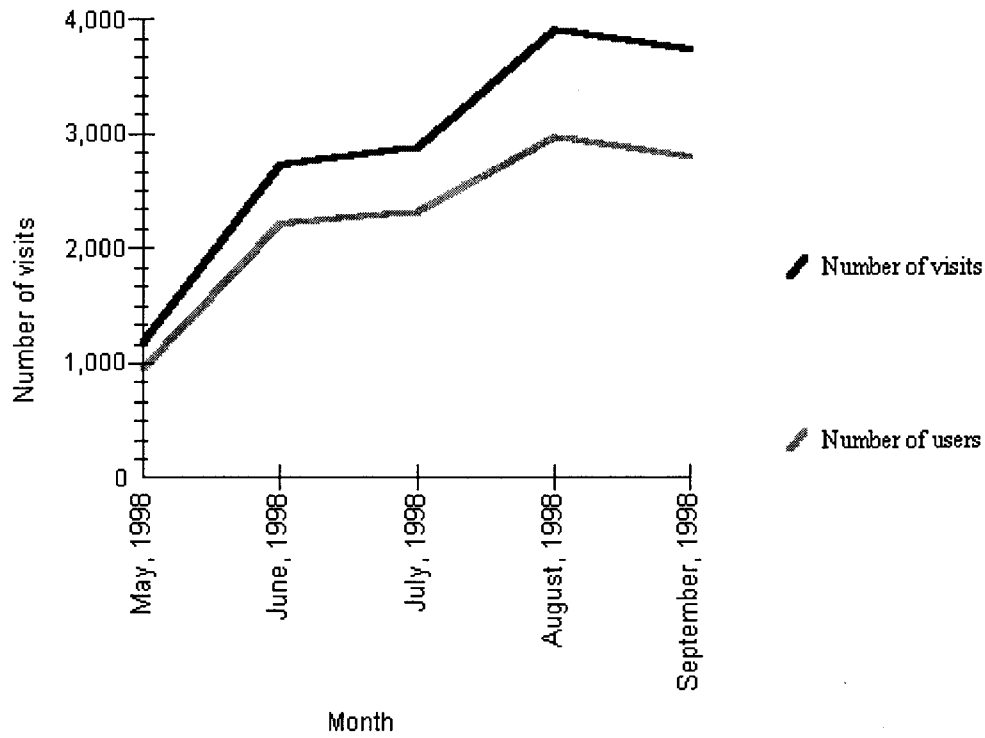
Appendix I: SD Gateway site statistics (May-September 1998)

General activity statistics (May-September 1998)

Number of hits	480,014
Number of requests	51,910
Number of visits	14,451
Number of users	10,457
Average number of requests per visit	3.59

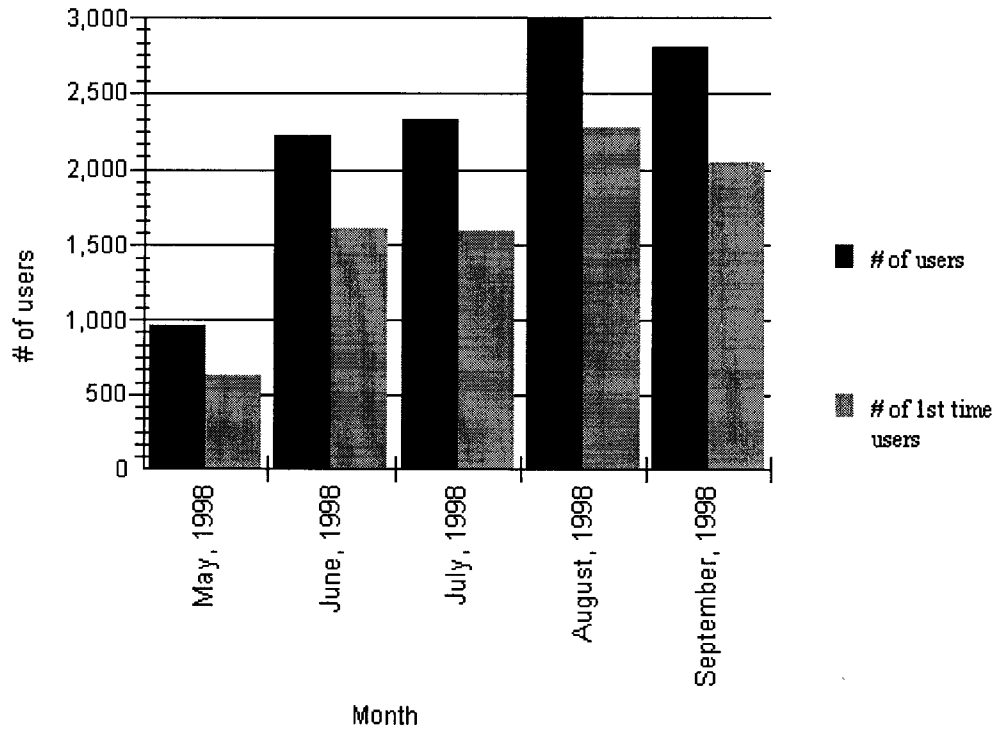


Vists and Users by Month

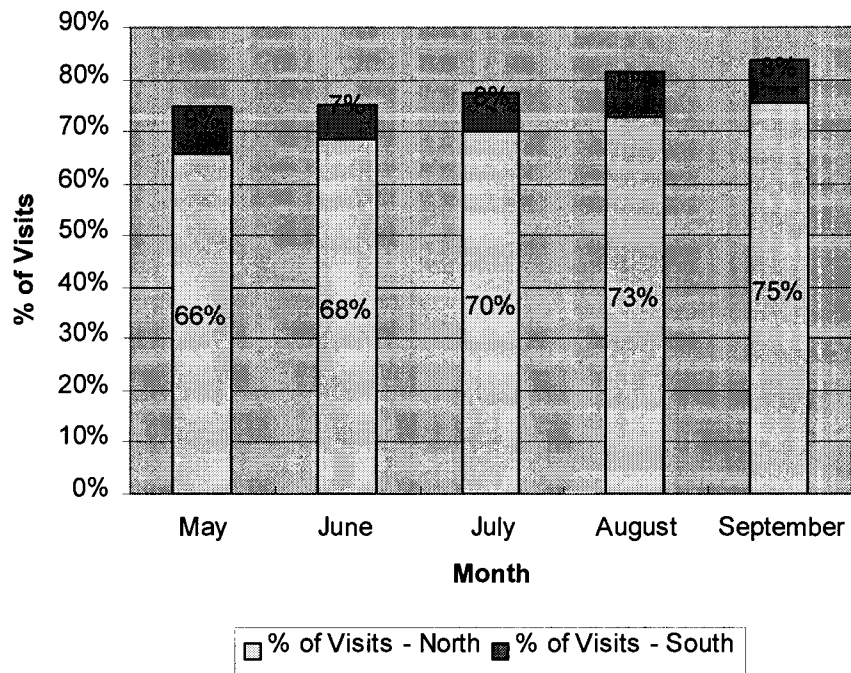


Users by Month

Larger gaps between total and 1st time users indicate a growing level of repeat, and presumably satisfied, customers.



% Visits from North & South



Definition of terms related to site statistics

Hit	Any connection to an Internet site, including inline images and errors.
Request	Any <i>hit</i> that successfully retrieves content. Unlike hits, requests are related to content and user behavior. For example, if a user requests an HTML page that has three graphics files, the web server might make a log entry for the three graphics files, the HTML page, and perhaps add some lines for overhead. However, only one request is counted by Analysis.
Visit	A series of consecutive requests from a user to an Internet site. If your log file data includes <i>referrer</i> data, then new visits begin with referring links external to your Internet site. Regardless of whether or not you have referrer data, if a user does not make a request after a specified time period, the previous series of requests is considered to be a completed visit.
User	Anyone who visits your site at least once. If your log file data contains <i>cookie</i> data, users will be identified by their cookie . If your log files do not contain cookie data, a registered <i>username</i> is assigned to users. Or, if no registration information is available, users' are identified by their Internet <i>hostnames</i> . Many organisations use Internet gateways, which mask the real Internet hostnames, so user counts may be conservative for those users identified by their Internet hostnames.
Organisation	A commercial, academic, nonprofit, government, or military entity that connects users to the Internet, identified by an entity's Internet <i>domains</i> . Microsoft Site Server Analysis groups together all domains registered to the same organisation as one organisation. If a domain is unavailable in the database, one Internet domain is used to identify one organisation.
Geography	The continent, country, region, state, city, and zip code are based on an organisation's Internet domain registration. Only Internet domains found in the Analysis database are included in region, state, city, and zip code analyses. Each Internet domain is associated with only one zip code, so all users from a domain used in multiple locations are considered to be at one location.

This report was created using the Microsoft (TM) Site Server Analysis - Report Writer.
Web to <http://www.microsoft.com/SiteServer>