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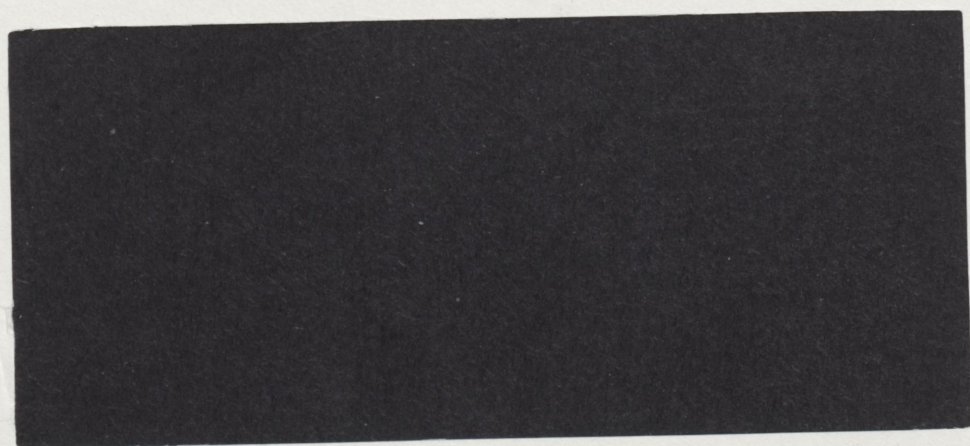
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**INVENTORY OF
FEDERAL-PROVINCIAL
ELECTRONIC INFORMATION
ACTIVITIES**

(Working Paper 7/94)

Federal-Provincial Working Group
on
Agriculture and the Information Highway

November 1994

PREFACE

At the July 4-6, 1994 meeting of the Federal-Provincial Ministers of Agriculture in Winnipeg, the Ministers established a Federal-Provincial Working Group to identify and evaluate new policies and programs for the agriculture and rural sectors and the Information Highway. The Group would report to Ministers (through the Policy Assistant Deputy Ministers) with recommendations.

One of the first activities of the Working Group was to compile this report on the developments in electronic information services in each province and the federal government. The purpose was to understand the developments that were occurring in each of the eleven governments as a prelude to the development of a strategy. The Working Group recognizes that the inventory is probably incomplete and already out of date. However, it does represent a snapshot of the widespread federal and provincial government initiatives in the fall of 1994 to provide more open access to government information holdings and to improve internal and external communication.

The Working Group would be interested in comments on the report. The members of the Working Group are listed at the end of the document.

INDEX

Executive Summary

1. British Columbia
2. Alberta
3. Saskatchewan
4. Manitoba
5. Ontario
6. Quebec
7. New Brunswick
8. Nova Scotia
9. Prince Edward Island
10. Newfoundland
11. Canada

MEMBERS OF FEDERAL-PROVINCIAL WORKING GROUP

EXECUTIVE SUMMARY

British Columbia

Electronic sources of agricultural information in B.C. are growing markedly. Numerous systems exist, but are largely used by government advisors, industry institutions, research or educational agencies. Although not quantified, producer use is growing but is yet reasonably small. Certain commodity producers are relatively high-users, while others are small. The strongest use is internal messaging/communications and corporate databases or systems for service to external clients i.e., financial assistance, licensing, food quality, health monitoring, etc. Electronic information preparation is underway, but yet mainly to prepare print material. Actual electronic dissemination is limited, but gaining via efforts such as FBMinet and other bulletin boards. Awareness, training and access to economical hardware/software are key factors affecting growth.

Alberta

The three year Business Plan of Alberta Agriculture, Food and Rural Development of the spring of 1994 committed the department to "pursue establishment of an electronic communications network for the agriculture and food industry so that timely information can be rapidly accessed". Budget funds were set aside to achieve this result. As a major step in moving forward, a review of department services to identify the most likely ones to deliver electronically is currently underway. The consultants from Price Waterhouse are scheduled for completion by January 31, 1995. The project will also review available technology to produce a "best" system recommendation.

Saskatchewan

Saskatchewan has identified telecommunications and information technology as one of six strategic growth areas for the province. A major recent strategic study recommends specific initiatives to best position the province for the "Information Age". Farm and rural audiences participate in narrowcast credit and non credit extension programming at up to 80 sites utilising satellite technology. The universality of fibre optic cabling has enabled SaskTel to announce access to Internet for all subscribers early in 1994. Bulletin Boards and Internet are being used to provide infrastructure and "information centres" at the community and school level. Within this framework farm and rural clients may access the Fed-Prov FBMinet and subscribe to a range of private sector alternatives. Following the integration of provincial lending and crop insurance agencies into the department, efforts are underway to establish full conductivity and networking capability. Investigations are underway to identify ways to "add value" to current services and to fundamentally review the scope and method by which these services are provided.

Manitoba

The Province of Manitoba has stated that capturing opportunities under the Information Highway "umbrella" is a priority area for examination, recommendation and action. Following from this, an Integrated Information Infrastructure task force has been established, in large part to address Information Highway issues and requirements.

As well, the Manitoba Government is working to develop a communications network infrastructure to cost-effectively facilitate the movement of information. A provincial committee has been assigned the task of developing and implementing the infrastructure.

Ontario

The information highway presents tremendous challenges for agricultural and rural clients. However, within this challenge also lies opportunity--the opportunity to market products world-wide instantaneously, the opportunity to receive on-line government program information or research about agricultural and rural issues, and the opportunity to develop and attract new knowledge-intensive agricultural and non-agricultural businesses for rural areas.

The vast potential of information technology and the information highway is already being recognized by our clients. For example, the number of farmers with computers in Ontario has risen from 2,200 in 1986 to 7,800 as of the last census in 1991. Increasingly, the agricultural and rural community development clients are also developing their own systems--BBBs and Freenets-- to gain access and take advantage of the highway.

However, an outmoded telecommunications infrastructure, low public awareness and lack of training impede the development of the information highway in rural areas. The Ministry of Agriculture, Food and Rural Affairs is currently implementing a information technology strategic plan to address these impediments and facilitate the development of the information highway in rural Ontario.

Quebec

In the spring of 1994, the Quebec government adopted a policy on the information highway encompassing several actions. These included in particular the establishment of a task force to define and explore the various avenues for using the information highway in the delivery of government services, and the development of a \$50 million Information Highway Fund, set up to support and accelerate investments by Quebec companies and organizations in projects to implement the information highway. This policy is currently under review and it should be submitted shortly to the current government.

The Quebec Department of Agriculture, Fisheries and Food is currently at the study stage in the development of a departmental policy on the information highway. It is following existing projects - primarily the project of the GEAGRI Group - with interest and is providing support. GEAGRI is working to establish a Quebec network on INTERNET.

New Brunswick

The Province of New Brunswick has opted for fast access to the information technology-based economy by maintaining a proactive stance, supported by a separate department responsible for the information highway.

The infrastructure necessary to foster the desired development is in place and it is the province's goal to maximize its use by linking systems together so everyone has affordable access to each other's technology and the information it is capable of transmitting. Fibre optics loop the province and the digital network is unique in North America. Teleclustering and a full range of videoconferencing capabilities are also widely available. The private sector has invested substantially in research and development.

New Brunswick Agriculture is moving quickly along the information highway by means of a variety of initiatives including: (i) providing access between Headquarters staff and the 7 Regional offices and all other agencies and provinces with a local area network, (ii) encouraging and training farmers in the electronic gathering, interpretation, storage and efficient use of available technical, financial and managerial information via the FBMInet-and other computer bulletin boards, (iii) developing an Online National Potato Information Database (with the other 5 provinces), and (iv) cooperating with TeleEducation N.B. in a technologically enhanced, open distributed distance education network, and equipping head office and the 7 Regional offices for the computer software sharing and audiographic teleconferencing.

Nova Scotia

The Government of Nova Scotia has made a commitment to move quickly to develop both a creative and a practical approach to support the development of information infrastructure throughout the province. In March 1994, the Nova Scotia Electronic Highway Study was prepared. The objective of the study was to recommend an integrated approach to the development and use of a range of telecommunications facilities and services within the concept of an electronic highway to enable the Nova Scotia Provincial Government to: (i) deliver its services to the public in new, more efficient and more economical ways (Government as a role model); (ii) develop the (Provincial) economy; and (iii) open up the possibility for strengthened economic growth in export orientated telecommunications products, applications and services.

The Nova Scotia Electronic Highway Study sets out an action planning framework for government which focuses on three main areas--re-Inventing Government, re-invigorating Communities, and policies and procedures.

Prince Edward Island

The P.E.I. Government is presently developing a policy regarding the way "information highway" related activities will be addressed in future. The Government has identified that there is a definite need to provide the public with services utilizing this technology and is in the midst of determining what approach that will best serve the interests of P.E.I. and it's people. This would include determining direction in areas such as marketability of government held information, acceptable use, access points, and commercial use policy.

An initiative of the Maritime Council of Premiers, Atlantic Canada On-Line is presently obtaining information to determine if there is a case for a mechanism that can be shared among the Atlantic Provinces.

Newfoundland

In June 1992 the Province of Newfoundland released its Strategic Economic Plan, within this plan the Province recommended the establishment of a Provincial Communications Agency, which would include representation from the public, private and educational sector. This Agency will be responsible for expanding data communications and for coordinating data networking initiatives within the Province as well as developing common standards for the industry. With respect to Agriculture the Province is developing a Local Area Network that will provide professional staff and subsequently, producers, processors, etc. access to specific software packages, databases and bulletin boards. The Province also promotes the use of the ACOA/Enterprise Network which is a province wide information system that carries electronic information on many types of business opportunities. As with the other provinces Newfoundland has access to the FBMINet. Producers throughout the island and Labrador can access the system through a toll free number.

Federal

The federal government has established a high level Advisory Committee on the Information Highway. Treasury Board has released a paper on Renewing Government Services Using Information Technology which provides a vision of government services that are affordable, accessible and responsive. There are a number of federal information services provided electronically by individual departments. Increasing electronically facilitated access to government information is a priority for Agriculture and Agri-Food Canada. A broad range of departmental services have already been constructed in conjunction with federal strategies to capture the benefits of the information highway. These services utilize a mix of phone, fax, stand alone, on-line and network technologies to improve access to statistical, regulatory, market and other information resources. Agriculture Canada Electronic Information Service, currently under development, will provide a single window to all federal electronic information services for the sector.

**INVENTORY OF FEDERAL PROVINCIAL ELECTRONIC INFORMATION
ACTIVITIES**

BRITISH COLUMBIA

Title: BC On-Line

A government sponsored database system for specific users including government staff and agents. Provides information on property, assessment, legal locations, businesses, etc. Inquiries are priced.

Title: Farm Folk/City Folk (private)

Bulletin board established by non-profit society to provide information for individuals and organizations concerned about food, agriculture and the environment. Bulletin board established in mid-1994 with partial funding under Green Plan. The main client group, while still small, is Vancouver urbanites currently. The objective is to broaden the audience considerably.

Title: Freenet systems (private)

British Columbia has several Freenet systems operating or in various stages of development: Victoria, Vancouver, Prince George, and Squamish.

These provide anyone with potentially a very wide access to information on all manner of subjects. Individuals with a computer and modem can dial in locally as a "guest", or obtain an account. Freenet offers access to a number of government, university and foreign systems including INTERNET.

Our understanding is that the demand is beginning to far exceed capacity in some of these Freenets.

Title: Other bulletin boards

Obviously, a number of other bulletin boards exist, some of which are known and probably a large number that are not known.

One BB is the **IPM Information System (IPMIS)** developed by the B.C. Ministry of Environment, Lands and Parks. Although still in the developmental stage, it is available to anyone via Freenet in Victoria. This system will provide information on Integrated Pest Management (IPM) such as pests, controls, pesticide labels, new technology, and text from newsletters, publications, and so on.

Title: Electronic publications

There are very few publications known to be available in electronic form i.e., on CD or on-line. All BCMAFF publications and other print materials are prepared electronically, therefore all text is able to be converted to electronic dissemination systems at an appropriate time. Transmitting graphics still poses some problems, but technology is available.

Title: Satellite

AGSAT is a U.S. based agricultural programming service providing programs via satellite. We receive bulletins via the INTERNET of periodic listings, and forward these to BCMAFF offices for use in newsletters or other advisories to producers, commodity agencies and institutions. There are a wide number of topics to choose from, particularly courses and other educationally oriented programs which could be beneficial to producers if they knew about them or had the equipment.

There appears to be a large number of satellite dishes in rural areas, including on farms. While many are likely for entertainment purposes, satellite dishes offer a wide scope for receiving agricultural programs.

C. Applications in the B.C. Ministry of Agriculture, Fisheries and Food. (operating and proposed)

(i) electronic information policy and resource use

- . the ministry has committed to a 3-year strategic systems plan to help it use information technology more effectively
- . there is a growing recognition of the need to manage data as a corporate resource, not as individually used/protected data
- . there is a strong need to move toward integrating data, and away from standalone systems that prevent or hinder information sharing
- . the ministry depends on knowledge workers, whose effectiveness is dependent on effective information technology

(ii) internal--description, technology used, client, purpose

Internal communications & office automation

- . ministry has an internal electronic communications system for all staff called "Harvest"
- . includes electronic messaging, word processing, conferencing, directories, time management and forums; also used for budgeting and financial management
- . uses Digital equipment (VAX computers) in B.C. Systems Corporation (BCSC)
- . BCMAFF is linked with the provincial system operated under BCSC

- . allows electronic communications to every office in the ministry, and virtually to every staff member.
- . each staff member, with very few exceptions, has an e-mail I.D. and either a terminal, computer or access to those.
- . through this system, access is possible to virtually any system in the world, including INTERNET. This has aided in developing links and systems locally.

Financial management and budgeting systems

- . various systems to manage the ministry budget, personnel information, accounting and assets
- . use various micros and central VAX system in BCSC

Corporate databases

- . publications listing: electronically allows staff to inquire about publications, factsheets, and reports; provide service to customers; not yet available outside BCMAFF

Client Information/Management systems

- . Agricultural Land Commission: under development to track applications for land in/out of land reserves, information, appeals, computer imaging of land parcels, etc.
- . Land Resource Management System: under development to potentially access computerized maps of all BC ag lands, capability, use
- . Agriculture Risk Management i.e., crop insurance program payments, budgeting, etc. for producer clients
- . Financial assistance programs i.e., national programs such as GRIP, NTS, Grape/Wine Adjustment; for producer clients;
- . Financial assistance/incentive programs (provincial) i.e., Agricultural Land Development Assistance (ALDA), Partners In Progress (PIP); for producers or industry groups
- . Client licensing systems for aquaculture farmers, commercial fishers, fur farmers, veterinary drug dispensers, livestock sale yards, beekeepers, game farmers, brand registrations, and brand imaging
- . Agricultural Statistics: comprehensive infobase of ag statistics from BC and other jurisdictions including Ag Canada, USDA, Alberta Agriculture; available mainly to BCMAFF staff, although possible linkage by others.
- . Fisheries information: statistics compiled on annual production, processed including frozen and canned product; available electronically to limited BCMAFF staff, but published in annual document for wide distribution
- . Aquaculture mapping: computerized system maintains digitized map of BC to track aquaculture operations in the province
- . Plant Health programs: computer systems in plant diagnostic laboratory to monitor plant diseases and provide treatment recommendations; other systems exist to deal with specific issues such as pear trellis rust, potato blight, weed control, etc.

. Animal Health programs: computer systems at the provincial health laboratory to record cases, diagnoses, and results, accounting and billing; farmer/owner info is filed and recalled when needed

. Food Quality programs: dairy herd and milk quality monitoring system monitors all milk producers, inspections, milk tanks; external data entered from outside agencies, statistical calculations made on milk quality and excellence

(iii) external--description, technology used, client, purpose

A number of electronic systems exist specifically for external clients including producers. Of course, others in the industry who have appropriate electronic connection may be able to use the systems as well.

Title: DBOP

The commercial name of BCDHIS' DBOP (Dairy Business Optimizer Project) bulletin board is DIBBS (Dairy Industry Bulletin Board System).

Purpose: The purpose is to provide an industry communication link amongst producers, advisors and BCDHIS via the BCDHIS Personal Computer-based system.

Principal Clients/Users: The principal clients or users are veterinarians and dairy producers. The former have permission from producers to access recent DHI farm reports. The vets/technical assistants then analyze/download the info into other farm management computer programs, such as DairyChamp and VAMMP. The output and herd analyses then are conveyed to the farmer.

Sponsor/funding:

BCDHIS covers the costs from user fees.

Kind of Information Provided:

Individual producer DHI report information, industry news releases and other information are provided on the bulletin board.

Degree of Success/Acceptance:

The BBS was offered about 1 year ago with an initial 2 or 3 interested producers. Currently there are about 12 users, including 3 or 4 farm advisor/vets that receive information on behalf of producers. There are about 40 BC farms directly or indirectly involved. This number is expected to grow and probably double each successive year for the next 2 or 3, depending upon the improvements in system delivery, information type/quality and DIBBS promotion.

Other developments in dairy information dissemination:

- * Dairy-L on the INTERNET
- * 2 CD developments in the dairy industry.

The US National Dairy Database is a collection of dairy educational articles and resources accessible electronically. There are over 900 documents (10,000 pages of text) and 50 decision tools, including a software inventory and executable software. Keyword searches, extension specialist addresses and many excellent recent factsheets and comprehensive reference documents are listed. The CD's are sold for ~ \$100 US, with most of the information library provided by US land grant institutional extensionists/researchers. Version 2 is now out with possibly over a thousand copies distributed across mainly North America to private (agribusiness advisors) and public extension agents.

Also the Canadian Dairy Extension Committee has developed the Canadian Dairy Information Database and provided this to FBMinet, almost a year ago. This is mainly a collection of recent dairy factsheets from Alta, Man, Ont and NS. There are plans to increase this and publish in CD-ROM format, probably not till later in 1995.

Title: INTERNET (agricultural information)

Purpose: Provide access to a wide range of agricultural information; provide means by which those interested in agricultural information and education can communicate readily with each other for purposes of information sharing and cooperative work projects.

Principal Clients/Users: Currently principal users are those who have access to INTERNET through their place of employment -- extension workers, educators, university students, other government employees, international agencies, some agribusiness. However access to INTERNET through commercial INTERNET providers is becoming available in many centres, making INTERNET more readily accessible by producers, agribusiness, contractors and others interested in agricultural information.

Sponsor/funding:

Kind of Information Provided:

-discussion forums which provide a mechanism for interaction by allowing users to "post" messages to the entire group (e.g.. dairy-l, extech-mg)

-mailing groups which provide newsletters or other periodical information (e.g.. EJOE - Electronic Journal of Extension)

-large databases of information: e.g. PENpages, ATI-NET - wide range of topics

-general communications (e-mail) vehicle

Degree of Success/Acceptance:

-appears to be widely used by extension agents in United States. Use by Canadians involved in agricultural extension growing. Producers interested in finding out how to gain access. Agricultural businesses are starting to get INTERNET addresses.

Title: RIN (Rapid Information Network)

Purpose: The purpose is to provide an industry communication link amongst horticulture (mainly greenhouse) producers, advisors and BCMAFF via personal computer-based system.

Principal Clients/Users: The principal clients or users are horticulture producers (mainly greenhouse) in the Lower Mainland area of B.C.

Sponsor/funding:
Free access

Kind of Information Provided: The system is available 24 hours/day, 7 days/week. Provides bulletins of timely notices, messaging, files, and shareware.

Degree of Success/Acceptance: Since the greenhouse sector is highly computerized, there is considerable use among those producers.. However, wider use seems limited but is being encouraged.

Title: Tree Fruit Online British Columbia

Purpose:

A Graphical Interface Bulletin Board System for the B.C. Tree Fruit industry. This service provides users with a ready source of up to date information required for day to day and longer term decision making and a means of electronic communication inside the industry.

Principal Clients/Users:

Commercial orchardists, provincial government extension staff, Agriculture Canada research scientists, packing house field service, consultants and other industry advisors, industry administrators.

Sponsor/Funding:

Primary funding for hardware, software and telephone lines from Okanagan Valley Tree Fruit Authority. Additional funding from Provincial Ministry of Agriculture Demonstration of Agriculture Economics and Technology Project funding and for time of the system administrator.

Degree of Success/Acceptance:

- Excellent acceptance at inception, all contact in all areas of the industry very positive.
- Acceptance has been excellent during development, is expected to grow with time as more information becomes available and more users contribute to the information base. Currently 115 users, target 250 end of 1994.

Kind of information provided:

Up to date weather information
Insect and disease monitoring information and interpretations
Fruit maturity information, up to date crop harvest reports.
Discussion areas - topics related to all area of industry
Market information- current prices and trends from USDA and Ag. Canada.
Farm business management information
News - local and around the world related to Tree Fruit Industry
Research and demonstration information
Newsletters and journal information - local and around the world
Coming Events - local and across the continent

Title: FBMI net (B.C.)

(very similar service in B.C. as in other provinces)

- the service is becoming quite widely used, mainly by information providers (government, private services, industry, etc.)
- more and more farmers are using the system as they become aware of it, obtain hardware and gain familiarity with the information provided.

FBMI net is managed by a ministry staff member (district agriculturist) from the Prince George regional office who is highly adept at computer systems and information technology. This is playing a significant role in the growing popularity of the service.

D. Other information

(e.g. user fees, clients, training issues)

Alberta

Electronic information delivery to clients in rural Alberta is available currently in several platforms/formats. A quick overview is provided as a base to develop from for further consideration:

Globalink is a subscription based time delayed market information system delivering data via satellite. The satellite feed is directed to a computer for reading and storing the updated market information, thus is a one-way out system only. Subscription fees are approx. \$60 per month for a basic package, plus the capital cost of \$700 - \$800 for the dish. Additional services/information types are available for additional cost. Number of clients is not published information, but suspected to be in the low hundreds.

DTN (Data Transmission Network) is a similar satellite service to Globalink.

FIS is a subscription based Bulletin Board System offered by Alberta Pool (a major grain co-operative). It has some market information on line, but some users and observers have complained about infrequent updates of time sensitive information. On line commodities trading is available with an appropriate margin account. Subscription costs are \$25 for five hours, or \$75 for 25 hours. Users dial through a low rate (9-11 cents per minute) or direct to Calgary. User volume is in the low hundreds.

Grassroots is a subscription based market information system utilizing NAPLPS graphics technology to deliver interactive computer based market and weather information to clients. It also offers on-line commodities trading. It is under increasing competitive pressures from Globalink.

FBMInet is a Bulletin Board based system implemented under the National Farm Business Management Program umbrella and operating co-operatively across the country. Stand alone nodes have operated in Olds for the past 10 years and in Edmonton when a BBS operated by the Alberta Agricultural Research Institute joined in June 1994. There is interest by other private and public agencies in joining the system. Users pay normal long distance rates to these sites. Nodes communicate with each other several times a day to share updates. Call volumes to Aug 30, 1994 are over 18500 in 16 months from over 2200 users. Information content can be categorized into perishable market news, searchable databases, files for download, public message (conference) areas on multiple topics, privately controlled message areas, and private electronic mail. The privately controlled message areas may require a fee for access (eg KenAgra and STAT) or are controlled by an organization to communicate with it's members.

Other systems like Compuserve who have 10000 subscribers in Alberta are also available to rural clients. As well, many general interest and specialized BBS systems are operating. There are Internet providers coming on line in major centres, with 'Freenets' coming in Edmonton and Calgary.

In addition to the above services available for 'external' clients, Alberta Agriculture, Food and Rural Development operates an internal communication system based on IBM AS400 technology and AGN PAC X.25 (high quality & throughput for government users) lines. Offices that are not on site with the ten AS400 locations use dial up access. Information on-line includes administrative references, some publications, administrative functions (eg on-line expense account filing and budgeting) electronic mail, and pass through to central government mainframes for application running.

The Agricultural Financial Services Corporation (lending and crop insurance Crown Corporation) also has internal networks connecting field offices to headquarters. The Corporation is in the midst of amalgamating the lending and insurance units into one organization, thus their computing systems are in a state of change. Work is in progress to integrate the district office communication platforms between AAFRD and AAFSC.

To date, information accumulation for electronic delivery on FBMInet has been low key and dependant on work units voluntarily deciding that their information would be useful on electronic delivery. Well used Department information is supplied by market forecasters, press release units and the weather forecast. Some anticipating department work units are preparing to assemble information in an electronic form that will be ready to mount on whatever system or methodology emerges as the basis for future electronic delivery.

Following the Consultant review of information services, a more intensive information installation will likely be undertaken based on the outcomes of the analysis they work through. Delivery system design will also be undertaken to build on the capabilities already in place and allow department and client access to electronic delivery of information. As this work is undertaken, issues that relate to valuing information arise that will have to be understood. For example, if a Department publication is sold in a printed format, what pricing structure is appropriate for electronically delivered materials? Is the pricing intended to contribute to physical distribution costs, or also to some share of authorship costs. Does the information have a higher value that could be extracted from the marketplace because it is available in a more sorted and quickly delivered method?

Saskatchewan

Government Information Highway/IT Strategy

Saskatchewan's strategy for economic development, ("Partnership for Renewal") identifies telecommunications and information technology as one of six strategic growth areas for the province.

The October 1994 report of the Saskatchewan Information Technology and Telecommunications Strategy Advisory (ITTSAC) Committee ("Enabling Prosperity-Saskatchewan in the Information Age: Securing A Competitive Position") concludes that the key to economic development and prosperity for Saskatchewan rests in the prompt and proper use of information and telecommunications technology.

The ITTSAC report, currently under review, identifies strategies and initiatives to position the province to take advantage of information technology and to establish itself as an effective participant in the Information Age. The recommendations which include both "enabling" and "end achievement" goals provides a basis for action for government, businesses and educational institutions.

Four "Enabler Goals" are identified:

- Economic Strategy: Implement an economic strategy for competitive development of Saskatchewan knowledge-based technologies.
- Information Literacy: Create an information-literate population which has the tools for success in the Information Age.
 - Provincial Infrastructure: Use an information and telecommunications infrastructure to position Saskatchewan to receive maximum economic and social benefits from the Information Age.
 - Government Leadership: Use the provincial government to display leadership and as a catalyst for transformation.

These "enablers" are the proposed means to achieve the desired sequential "end achievement" goals of:

- a healthy information technology and telecommunications sector
- increased business prosperity
- enhanced quality of life for Saskatchewan people

Government Systems

- Technology Trends

The results of a survey by the Saskatchewan Information echnology Management Board earlier this year revealed a number of Information Technology trends within government :

Hardware -most desktop computers in the middle and lower power range will be replaced by high-end personal computers. There is a move away from mainframe computers, with some exceptions such as Finance. Most departments are moving towards client-server systems for internal operations.

Software -departments are looking at suites of products that integrate the many desktop tasks into a seamless environment. The interconnectivity issue coupled with the importance of sharing information on a corporate basis tends to drive decisions in this area.

Networks -Local Area Networks (LANs) are becoming more substantial. Hardware and software upgrades are required so LANs can handle the ever increasing demands for file transfer, electronic mail, and server access. Several departments plan to either consolidate a number of existing LANs into one or make their varied LANs communicate more effectively.

Some departments are moving towards province-wide networks (WANs). This is happening in a variety of ways. One department is moving its older LAN servers out to smaller remote locations and then connecting them to head office. Others are building their WAN from the ground up. By far the most ambitious of these is the new Health Districts WAN which demands new software, hardware and data architecture standards.

Planning -there is a strong emphasis on planning. Most departments are either updating existing plans or are developing new ones. These plans can be either at the operational or strategic level.

Automated Systems -departments are investigating the possibility of automating records and information systems or they are about to implement new systems. These projects range from small (Labour) to medium (SPMC) and large (Justice). This is the forerunner of the full blown EDI systems looming on the future horizon.

Facilities Management -several contracts for mainframe services have been tendered. The trend towards more competitive pricing in this area will continue.

- SaskTel

The universality of fibre optic telephone lines throughout Saskatchewan and the absence of rural "party lines" facilitated the recent announcement by SaskTel that it would make access to Internet available, by January 1994, at reasonable cost to all subscribers. ("Reasonable cost" is rumoured to be in the \$20 per month and 5 cents per minute of use range.)

- Sask Education

Of relevance to ag/rural clients are a number of initiatives led by Saskatchewan Education, Training and Employment - projects linking schools, distance education and teacher support. Of particular interest is a public access bulletin board which connects 14 centres to Regina and to each other utilizing Justice Department lines and facilitating local dial-in to the centres. Also a community/school "information centre" pilot project at 5 sites utilizing the Internet to provide "infrastructure" at the local level regarding information access and training opportunities.

- Saskatchewan Communication Network

The SCN delivery system provides narrowcast programs to up to 80 sites throughout the province. Educational programming is coordinated and managed through the Regional College system. This infrastructure provides the opportunity to deliver educational and extension programming to both private and public agencies. SCN also provides satellite broadcasting and cable delivery services for both credit and non credit courses.

Sask Ag And Food Applications

- electronic information policy and resource use

In support of the "Agriculture 2000" strategic framework for the agriculture and food industry in Saskatchewan and following the integration of the crop insurance and lending functions into the department, internal resources have been committed to:

- review all platforms and systems currently in use for compatibility, duplication and obsolescence
- recommend technology solutions to address urgent issues
- develop a strategic direction for electronic information systems and
- recommend improved field delivery systems, recognising information technology as an important "enabler"

The overarching issue of inter-department coordination and leadership through a centralised agency is under review. A new department or "secretariat" charged with this responsibility is likely to constitute a government response to the ITTSAC report. (see section A above)

- internal applications

Electronic communication utilizes "Futurous Team" (dos and windows based) at head office and the Unix based "RING" (Rural Information Network Gateway) dial up access to the network of 43 Rural Service Centres. Both systems utilize Word Perfect attachments.

Gateways to other departments enable interdepartment communication. The dual field/headoffice systems within the department are due to previous separate historical developments involving more than one department. Systems involving crop insurance and agriculture lending are in a state of transition reflecting recent structural changes. Currently ACS utilizes a Novell product at headoffice in Swift Current and a low speed "dial up" system for field offices. Crop Insurance has no LAN at headoffice and relies on RING at RSC locations.

Local Area Network systems are installed at the larger Rural Service Centres to facilitate access and functionality to the newly installed CrownLand Management System and Livestock Inventory Management System. These LANS have full connectivity to the department's Wide Area Network.

Internet is available to a limited number of staff in a "read only" format. Full two way connectivity is still under test and is expected to be in place by the end of November, 1994.

- external uses

A range of market and production information services are currently available to Saskatchewan farmers and rural residents in electronic format. These include subscription based commercial products such as Globalink, STAT Publishing, DTN, Grassroots, Compuserve etc. (For further information on these products see other provincial reports.) Specially designed reports from these commercially available services are available through FBMinet on a "restricted" or fee for service basis.

FBMinet is a "free" Bulletin Board or "information carrier", implemented under the National Farm Business Management initiative and linked to a network of similar provincial bulletin boards across Canada. (For further information on the range of services available through FBMinet see other provincial reports).

The department is a significant "information provider" to FBMinet and has put all current newsletters, listings, factsheets and bulletins etc on to the "net". Similarly, assistance is being provided to the University Of Saskatchewan to ensure all printed "ag extension" materials are installed by mid December, 1994. The priority of making a wide range of information and data available electronically to both staff and producers continues with the recent addition of the Agricultural Development Fund data base (research and development projects) to the "net".

The department currently supports three "nodes" to facilitate service to over 2000 farm and rural FBMinet clients and to staff. Likely new initiatives would include the establishment of additional FBMinet 'echoes' to facilitate information transfer within and between farm groups (e.g. production and management clubs), etc.

Efforts are underway to try to the extent possible to coordinate or at least to ensure awareness of related activity by other public and private agencies including; AAFC/PFRA (Parkland Agricultural Research Initiative, Decision Support system - "PARI-DSS), Sask Wheat Pool and United Grain Growers Bulletin Boards, etc.

Other Information

Saskatchewan Agriculture and Food is aware of the unique opportunity available to both the public and private sector to adopt new information technology to not only add value to current services provided but also to fundamentally review the way in which these services are provided. To this end an internal review of options is currently underway.

Important new issues related to identifying and targetting clientele, new information vehicles and partnerships, cost recovery and product differentiation, security and training for staff and clients etc., etc. will challenge the fundamental role of government to provide appropriate leadership and "enabling" frameworks.

Manitoba

Government Systems

·Within Manitoba, there is currently very limited systems with applications to the agri-food sector:

Public

a)FBMInet -- bulletin board system

Private

a)Grassroots

b)Globalink

c)DTN Marketing Services

d)Country Guide Bulletin Board

e)Century Publishing Bulletin Board

Applications in the Ministry of Agriculture (Manitoba)

Electronic information policy and resource use:

Provincial electronic information policy and resource use is typically directed by the Information Technology Review Office (ITRO), an arm of the provincial Treasury Board Secretariat. Manitoba Agriculture through their Computer Services Branch work cooperatively with ITRO to ensure these global policies are upheld. Further, this branch is dedicated to serving the ministry in terms of their IT needs and to ensure that departmental policies are complied with.

It should be noted that other provincial bodies such as the System Coordinators Council (SCC) and the Economic Innovation and Technology Council (EITC) could influence policy as well.

ii) Internal -- description, technology used, client, purpose.

Manitoba Agricultural Credit Corporation possesses a mainframe application that records and tracks loan statuses. The technology used is a mainframe computer (IBM 3090) owned by ISM where time is being rented. The system is written in a third generation language but is subject to re-development on another computing platform. The primary client of the information is internal staff basically for accounting and administration purposes.

Manitoba Crop Insurance Corporation possesses a computerized system that maintains the various insurance programs/services and corresponding clientele. In delivering these services, MCIC interfaces with both the provincial and federal governments, specifically Manitoba Agriculture and Agriculture Canada, who are financially responsible for the compensation paid to producers by MCIC. The technology used is an AS/400 and the system is written in a third generation language. Electronic access to the host (in Portage) by the various agency offices is made via modem.

Manitoba Agricultural Crown Lands Branch possesses a mainframe application that records and tracks lessees of Crown Land. The technology used is a mainframe computer (IBM 3090) owned by ISM where time is being rented. The system is written in a third generation language. The primary client of the information is internal staff basically for accounting and administration purposes.

Geographical Information System is a system that disseminates and represents land-related information usually in a pictorial format. Currently utilized by research staff at MCIC, the information is also being considered for controlled distribution to sister branches and Corporations. The system operates on an Intergraph workstation and it utilizes Oracle as its relational database.

Veterinary Services Branch is reviewing alternative software systems that would allow them to computerize their laboratory processes. The intent is to fully computerize from receipt of animal, through pathology to diagnosis, to recording of the cases, to notification and finally through to billing. The technology is yet to be determined. The client would be internal staff, external veterinarians and livestock producers.

Recently within Manitoba Agriculture, Local Area Networks have been implemented throughout the province. Currently, most are tied together through e-mail but wide area networking capabilities are being sought with the impending implementation of the provincial data network. In terms of global applications, the department utilizes the FBMInet and has a few Internet addresses. Widespread use of this technology through the ministry has been sporadic.

Other Information

User Fees

- The department has not yet dealt with the issue as there are such limited applications at the current time. However, as a general principle the government does not want to be in the business of selling data or selling communications.
- As this issue unfolds, there will no doubt be a requirement to examine this issue more closely.

Clients

- Manitoba Agriculture serves a variety of clients. This variety has, in a number of ways, added several dimensions to needs identification. For example, currently the department has identified:

- producers/producer groups
- agri-food industry
- university/researchers
- other departments (provincial, federal, municipal)
- consumers

as the client base. Clearly, establishing the needs of these clients that can be met through the Information Highway vehicle (tool) is a huge challenge.

·Addressing this task is in the preliminary stages and will be an important determinant in how systems/applications unfold in Manitoba.

Training

·There are two primary issues that have been identified in this regard:

- a)client training
- b)staff training

To date there has been limited staff training for the existing FBMinet system and other applications as outlined earlier. However, the issues of "user friendliness" and accessibility for clients has been a concern as widespread client training is difficult, given limited resources.

.In the future, client training potential will likely be very limited and certainly would be based on a "fan-out" approach (i.e., teach staff to teach other staff who can assist clients) but user friendly will be a key requirement of any "deliverables".

Ontario

Government-wide Initiatives

Government Gophers

Management Board Secretariat and the Ministry of Education and Training have established Gophers on the Internet. The Ministry of Education and Training, the Ministry of Economic Development and Trade and Management Board Secretariat have all included information for public access on the Internet.

Provincial Infrastructure Programs

In November 1992, the provincial government approved a broad telecommunications strategy for the province. The strategy has six major thrusts, including:

- i) Accelerating growth in applications development and use.
- ii) Increased research and development to create an environment for growth in the information technology industry.
- iii) Establishment of an education and training strategy to meet the knowledge requirements of workers in information technology arenas.
- iv) Developing community-based networks for community development.
- v) Government becomes a model user of the information highway and technology by:
 - using telecommunications to reduce program costs and improve program delivery;
 - developing an overall information technology policy and information architecture for government;
 - organizing government to provide leadership and management for information technology.
- vi) Government takes the lead role in developing an information policy that enunciates broad principles regarding the social and economic value of information.

As part of the strategy, a \$100 million Ontario Network Infrastructure Program (ONIP) was developed. Funding for the program flows from the jobsOntario Strategic Capital Fund. Project submissions are vetted by a joint industry/community/labour Ontario Information Infrastructure Council, which then makes recommendations to the government.

Government Systems

OMAFRA staff have access to two bulletin boards FBMinet and OMAF Online. Currently, the Ministry is looking into ways to integrate the two separate systems and how to make them (or the information on them) accessible to users of the Internet.

FBMInet

FBMInet Databases include:

- Information similar to that found in printed publications, but in a much more flexible manner. For example, all of the BBSs in FBMInet offer the AgSoft Database, which is an electronic version of the Agricultural Software Directory publication.
- Online FBMInet User Guide, an online Help manual
- The Dairy Cattle Information Database compiled by the Canadian Dairy Extension Council.
- A listing of programs offered in each province compiled by the Canadian Agriculture Extension Council
- Other province-specific databases are available and more are being developed. In Ontario, there is an online database of rural community development success stories, and a BBS version of the Agricultural Information Manager (AIM) program is in development.
- Also on the Ontario node of FBMInet are areas for messages and files dealing specifically with rural community development.

OMAF OnLine:

- An OMAFRA Guelph-based BBS created to provide a technologically current tool to distribute information electronically on management, policies, procedures, and computer technology to Ministry of Agriculture, Food and Rural Affairs staff, and also to other OPS staff, and to the general public.
- OMAF OnLine is also made up of 16 conference areas, which are special interest areas, which have their own bulletins, door programs, messages, and files.
- OMAF OnLine is somewhat unusual in having access either by dialup modem, or via the Ministry's internal network (for staff located in Guelph or Toronto only). Also, the BBS has access to certain CD-ROMs, including the National Dairy Database from the United States.

Private Sector Services in Ontario

- The Data Transmission Network (DTN) of Nebraska, Farm Dayta of Iowa, and Globalink, also of Iowa, are information and services companies supported by satellite transmission. These companies have established themselves in the delivery of time sensitive information to various individuals and organizations, including to Ontario farmers, agribusinesses and rural communities. Daily updated databases such as Farm Market News and TomCast are linked to this satellite network and circulated back to 1200 Ontario receivers with the support of the Ministry's bulletin board system in Ridgeway. Integrated pest-management information is also available.

•Job listings and skills shortages are currently being beamed into rural areas through JobSat, a private sector provider in Milton, Ontario.

Stewardship Information Bureau

•To promote environmentally sustainable farming practices, the Stewardship Information Bureau provides innovative farmers and government and industry staff with timely and accurate information on appropriate technology. It includes four major databases are accessible 24 hours a day at 519 767-1790:

- ASK ELTON database - summaries of innovative farming practices and resource management information.
- ENVIRO.DOC database - over 11,000 published papers on soil and water conservation, selected with permission from the National Agricultural Library
- GREEN PAGES database - cross reference of subjects with knowledgeable people in soil, water and air resources management.
- SCINET database - soil and water research results from Ontario, going back to 1954.

Community Freenets

There are 42 freenets either created or under development in Canada; 15 of these are now developed/developing in Ontario. Most freenets in southern Ontario are including rural clients as part of their organizational efforts. The Freenets include:

- the DURHAM FREE-NET INC., Oshawa
- the FREESPACE TELECOMMUNITY DEVELOPMENT GROUP, Guelph
- the HALTON FREE-NET, Oakville
- the HAMILTON-WENTWORTH FREENET, Hamilton
- HOMEnet London, Ontario including Huron, Oxford, Middlesex and Elgin counties
- the NATIONAL CAPITAL FREENET Carleton University, Ottawa
- the NIAGARA FREE-NET St. Catharines
- the NORTH SHORE COMMUNITY NET, Elliot Lake
- the OWEN SOUND FREENET, Owen Sound
- the SARNIA COMMUNITY BBS, Sarnia
- the SUDBURY REGIONAL FREENET, Sudbury
- the THUNDER BAY FREE-NET, Thunder Bay
- TORONTO FREE-NET Metropolitan Toronto
- WINDSOR FREENET, Windsor

OMAFRA APPLICATIONS

Electronic Policy and Resource Use

-OMAFRA recently updated its strategic plan for information technology. The main strategic goals of the Ministry in this area are now to:

-Increase the accessibility to information in electronic format via an enhanced telecommunications network both internally for staff use and externally for clients. Partnership opportunities with the private sector will be actively pursued.

-Become active in enhancing internal use of electronic telecommunication technologies (bulletin boards, fax-on-demand, CD-ROM, internet, e-mail). While improving efficiency of internal communication this would simultaneously enhance abilities for two-way communications with external clients.

-Develop a commitment to training and use of telecommunication technologies supported by both internal and external training resources.

-To implement the strategic goals, the Ministry is currently in the process of developing Divisional teams to develop specific action plans. These divisional plans are to be completed by March 31, 1995.

Internal Applications

- Ministry is hooked up via a local area network. Microsoft E-mail is available to most staff.
- Ministerial budgeting and financial management is coordinated through the IFIS system throughout the Ministry.
- Through gov.on.ca, Management Boards gopher, OMAFRA staff have ability to send e-mail interdepartmentally and externally.
- A limited number of staff have full-internet accounts. More staff are beginning to use internet for research and policy analysis purposes.
- OMAFRA's farm financial assistance programs, including the Farm Tax Rebate Program, the Farm Start program, and many others, are operated on GOnet, a new, government-wide standardized and integrated platform for program delivery that is connected directly to the Ministry of Finance for cheque generation.
- The Ministry currently maintains a database of agricultural census data which it uses to compile Publication 20, an agricultural data profile of Ontario's agricultural sector.
- As part of the Farm Organization and Farm Registration Act, the Ministry created a comprehensive database to record statistics on the over 50,000 farming businesses registered under the act. Information is protected under FOI.

- The Ministry has access to the Geographic Information System (GIS), which is a computerized database on for mapping soil and land classes. It can also map animal health events.
- The OMAFRA library in Toronto has CD-ROM versions of the following databases:

Agricola--Produced by the National Agricultural Library, USDA
 FSTA--the on-line equivalent of the Food Science and Technology Abstracts
 ICAR--the inventory of Canadian Agricultural Research
 CC--Canadian Centre for Occupation Health and Safety

- Currently, there is a minimum of interactive program delivery occurring in the Ministry via the information highway. However, as part of its IT strategic plan, the Ministry will be exploring options for interactive program delivery that will reduce costs and improve efficiency. For example, farmers will be able to file Winter Wheat Final Acreage Reports for Crop Insurance will be available by phone and modem in 1995.

External Applications

A number of existing on-line databases, BBSs and networks are available to clients. These include:

- FBMInet and OMAF on-line (enough said).
- A limited number fact sheets on rural development and financial assistance programs are also available through fax-on-demand.
- Internet: Clients within dialling distance can take advantage of the wide-variety of community freenets across Ontario to access Internet free-of-charge. This opens them to a world of agricultural and rural information via gopher, telnet and world-wide web, among many others. Two USDA documents, describing what's available for agriculture on the Internet, are being used by field/extension staff, namely: 1) Not Just Cows; 2) USDA's Extension Services Guide to Agricultural Resources on the Internet.

- E.G., The **Telecommunities Development Group** at the University of Guelph are using a program called the Global Village Navigator to develop a World Wide Web page of info on Agriculture and Rural Development to be accessible from anywhere on the Internet.

Other Information

Staff Involvement

- OMAFRA extension staff and rural community development advisors are currently working on the organizational committees for the Owen Sound Freenet, the Homenet Freenet and with the North Wellington Advisory Group. Guelph staff are also working with a Committee of Dairy producers interested in using the Freespace concept. Where possible, staff are promoting community-based networks to agricultural and rural clients to stimulate demand for information technology in rural areas.

User Fees and Training

- Ontario is currently formulating policies on user-fees and training as part of the implementation of its information technology strategy, and as such has no policy initiatives to relay at this point in time.

Quebec

Government policy on the information highway and action strategies

Quebec has one of the most advanced telecommunications structures in the world. The information highway is designed to completely interrelate all communication networks so that users have access to any service from their network, regardless of its electronic configuration. To enable Quebec to benefit from the new technologies and ensure at the outset that the highway will be adapted to Quebec's needs and francophone populations, the Government of Quebec considers its involvement essential and has undertaken over the short term to stimulate private investment in the information highway.

Among the actions favoured by the Quebec government, the following may be noted:

- establishment of a single service window by the Department of Industry, Commerce, Science and Technology and the Department of Culture and Communications, in order to better serve customers involved in the production and design of information highway products;
- creation of a task force to define and explore the various avenues for using the information highway in the delivery of government services;
- formation of a consulting group to advise the government on information highway developments in Quebec;
- establishment of a financial assistance fund for implementation of the electronic highway.

The Department of Industry, Commerce, Science and Technology, which is responsible for implementing Quebec government policy, manages the Information Highway Fund. This \$50 million fund was established to support and accelerate investments by Quebec companies and organizations in information highway projects. It has a two-year time and includes four main components:

- modernization and development of infrastructures;
- support of private projects on a partnership basis;
- support for experimental projects;
- francophone populations.

The Department of Industry, Commerce, Science and Technology is currently preparing a document for the development of a strategy and action plan concerning the information highway and its use. A few internal initiatives are under way but are not the result of concerted actions.

Government and private systems in the agri-food industry

Quebec has a few projects involving the exchange and dissemination of information. The following is a list of known projects relating to the electronic dissemination of information in the agri-food sector.

TELEFARM

Electronic bulletin board for agriculture, in operation since October 1993. The server is located in the Coaticook area of the Eastern Townships.

Customers: farmers and advisers of various organizations.

Purpose: to promote and develop the exchange of information between producers and between producers and farm organizations.

Head: André Bouvet, Agrologist.

"AGIR" Club and the documentation centre of the Saint-Hyacinthe Institute of Agri-Food Technology

Electronic bulletin board. The server is located at the Saint-Hyacinthe Institute of Agri-Food Technology.

Customers: members, students, and advisers from six regions of MAPAQ.

Purpose: One of the main objectives of the Club is to share information on the documentation centres of the La Pocatière and Saint-Hyacinthe Institutes of Agri-Food Technology and the MAPAQ library with members. BIOALI, INFAGRO and REPÈRES data banks.

Promoters: Daniel Lévesque, Gilles Bachand, Saint-Hyacinthe Institute of Agri-Food Technology.

Agriculture Canada electronic bulletin board

Electronic bulletin board system. The server is located at Ottawa.

Customers: all interested customers.

Purpose: to provide electronic consultation of various weekly charts published in commodity reports for dairy products, poultry, red meats, horticulture and specialty crops.

Early warning system

A network of professionals who issue information bulletins and other technical documents. Professionals use an electronic bulletin board to communicate early warnings for crop protection. Several methods are used to disseminate the information to customers: mail, weatherradio, radio, weathercopy, telematics (through Telefarm, Atoutel), telephone message services.

Farm Business Management Information Network (FBMI Net)

This network consists of 11 electronic bulletin boards, i.e. 1 for each province. It was established by the Canadian Farm Business Management Council with the help of the provincial departments of Agriculture. Information and messages are exchanged at night, when long-distance rates are reduced. The Quebec node is currently in operation for a trial period. The server is located in the offices of the GEAGRI Group in Quebec City.

Customers: all stakeholders in the farm management sector and farmers.

Head of Quebec node: Sylvain Dupont, Engineer, GEAGRI Group.

AGRITEL

Data bank containing technical, economic, financial and demographic information from farms belonging to a *syndicat de gestion*.

Customers: farmers and advisers of various organizations.

Purpose: economic reference tool on farm production.

Head: Bernard Belzile, Secretary, Fédération des syndicats de gestion.

MAPAQ interregional network

Communication network between headquarters and the 12 regional directorates.

Customers: MAPAQ staff

Purpose: to exchange information on farms, subsidy programs and other administrative information.

Head: Marcel Gagnon, director, Subsidies Service.

GEAGRI Group

The GEAGRI Group is currently implementing an electronic bulletin board network to support an operating structure similar to that of FBMI Net. GEAGRI has also evaluated the information needs of the agri-food clientele. The use of INTERNET as an electronic carrier is the solution chosen.

Applications at the Quebec Department of Agriculture, Fisheries and Food

The Information Resources Directorate is developing a page of information on the Department, its mission, agencies reporting to the Minister, existing programs and other relevant information as a pilot project. The Department is also following the project conducted by the GEAGRI Group with interest and is providing support. The objective is to implement an electronic bulletin board network via INTERNET.

Other information

The main concern of MAPAQ is to provide as much information as possible to the largest number of stakeholders. The mandates of the Department concern all sectors of the biofood industry, from farms to exporters and processors to restaurants and other institutions. One of the means favoured by the Department is to provide all available information to persons and groups that can circulate this information, such as agrologists, consulting firms, farm unions and producer federations, and industry associations or groups. In this way the Department would reduce the number of contacts and the costs of its interventions. This would get around the obvious problem of the absence of adequate technology for customers (i.e. producers) to receive information electronically.

Therefore, even though our ultimate customers are producers, processors, distributors or other members of the biofood industry, they are first and foremost those who can transmit information, acting in turn as disseminators.

New Brunswick

GOVERNMENT AND PRIVATE SYSTEMS

Government Systems

TeleEducation N.B. - TeleEducation N.B. is a cost effective distance education network that is interactive and responsive. It is a vital part of New Brunswick's economic development strategy.

With TeleEducation N.B., New Brunswickers can further their education and training in their home communities through teleconferencing.

TeleEducation N.B. stimulates private and public educational institutions, private knowledge-based industries, training companies and government departments in the development of innovative training products.

To date, TeleEducation has established over 50 distance education sites in a variety of learning centres in all regions of the province. A number of province wide teleconferences have been held linking up as many as 14 sites at a time.

Geographical Information Services - The New Brunswick Geographic Information Corporation offers highly specialized expertise and a broad scope of services in the field of geomatics. The Corporation provides a premiere service to those interested in managing land information and related disciplines.

A recognized leader in the geomatics field, the Corporation is a technologically advanced, managerially innovative company. It has built a solid infrastructure to manage geographic information for the Province of New Brunswick, Canada.

Service New Brunswick Kiosk - a free-standing unit, similar to an automatic banking machine, which allows people to obtain services from government offices, N.B. Tel, N.B. Power and others.

Private Systems

N.B. Net - N.B. Tel's entrance to the Internet, a world-wide computer network through which people may communicate and access information from remote locations.

Our world-class telecommunications network, pioneered by N.B. Tel, has helped New Brunswick to become North America's most cost-efficient location for corporate support centres.

APPLICATIONS IN NEW BRUNSWICK AGRICULTURE

New Brunswick Agriculture acknowledges the tremendous potential for efficient gathering, storage and transmittal of information relevant to progressive modern agriculture.

To reflect this, we have installed a large local network (Novell) at our head office at the Research Station, Fredericton, N.B. which will cater for at least 200 users. This capability will enable all Headquarters staff to gain access to and be accessed by all other Provincial departments and agencies who have their own local area networks.

Local area networks capable of handling from 10 to 50 users are currently being installed in the five largest agricultural regions. Smaller agricultural offices will be hooked to the local area network by remote LAN nodes (remote stations).

Cooperating with TeleEducation N.B. in a technologically enhanced open distributed distance education network, compatible with the electronic highway in the cost-effective, equitable access to a wide range of training, information and educational services, N.B. Agriculture's head office and the seven Regional Offices will soon be fully equipped for the computer software sharing and audiographic teleconferencing offered by TeleEducation N.B.

The efficient retrieval and sharing of mapping information between the offices of Agriculture, Geographical Information Services and Finance is just one example as to the benefits of being on the local area network.

Also, we are working with the New Brunswick Federation of Agriculture in the utilization of the Federal/Provincial Farm Business Management Information Network (FBMInet-NB) electronic bulletin board system to accommodate the information on the Federation's presently operational Farm Talk Bulletin Board. This so-called merger will enable one systems operator to handle tasks now involving two. Other New Brunswick farm organizations are also interested in this type of arrangement.

To make these services readily available to farmers and encourage their use, we have linked the (FBMInet-NB) bulletin board to an X25 pad which allows access at no or reduced cost to 20 DataPac phone numbers strategically located throughout the Province. Users will simply dial via modem, the data pack number closest their farm and proceed to access the system. Department of Agriculture specialists will access this same bulletin board via the network rather than by modem.

Another service we are making available to all Department of Agriculture personnel through the local area network is Internet which we can now use on a world-wide basis for remote mail and also for the retrieval of technical and other management information of benefit to the Department.

Specifically, New Brunswick Agriculture is involved in the following projects:

Online National Potato Information Database (ONPID)

This project, which was initiated by N.B. Agriculture's Farm Business Management Branch, will enable producers and other industry representatives to access important potato technical and management information via the Farm Business Management Information Network-New Brunswick (FBMInet-NB).

Saleable, Stand Alone Software Program code named SMARTPIG

In 1988, the New Brunswick Department of Agriculture undertook a major pilot project with hog producers throughout the Province. At that time, computer technology started to boom and there was an opportunity at our doorstep to improve the management ability of our swine producers. The main objective sought during the start-up of the project was to initiate our farmers to that technology and to build a comprehensive database for New Brunswick.

Due to the success of this initiative, approximately 65% of our producers now possess a computer, giving them a better handle on their herd productivity.

This computerization process has occurred throughout North America and farmers are now demanding better software support and capabilities. They are now looking to have access to more intelligent information systems that will react, diagnose and propose ways to solve any emerging problems.

Recognizing the benefits of such a system, New Brunswick Agriculture began to explore possible ways of bringing together the necessary expertise for the purpose of developing an expert system capable of meeting the above-mentioned needs of hog farmers, industry professionals and universities. A working prototype of this new product has been completed satisfactorily but much more work remains to be done.

Canadian Dairy Information Database Project - Co-operate with Ontario and other Provinces

The purpose of this project is to prepare a compact disk (CD) containing information on the dairy sector.

In agriculture, the opportunities for efficient use of the electronic highway are almost limitless. New Brunswick looks forward to the challenges that lie ahead.

OTHER INFORMATION

New Brunswick Agriculture sees its clients as all farmers, processors, and all other agricultural industry stakeholders; we do not differentiate between them; we attempt to recognize them all for the potential they have and service them accordingly in both official languages.

Nova Scotia

Government Information Highway Strategy

Government and Private Systems

B.1 Government Systems

The current emphasis is being placed on automating government Service Delivery Processes and Organizations. For the most part, these systems are still in the development phase, but will focus on:

*Client Self-Service - direct access to government services (licence renewals, application services, etc.) without direct assistance.

*Kiosk Service - public accessible "on-ramps" to the information highway. An example would include the networking of the Public Library System. Other examples include: directory services; databases; document libraries; and geographical information.

*Remotely Assisted Service - providing interactive service in order to reduce travel and streamline delivery of programs and services which can not be fully automated.

*Direct Assisted Services - on-line information capture and processing to support face-to-face service delivery.

*Full Electronic Interchange - elimination of all client involvement by allowing computer to computer transacting of business.

- through the Atlantic Office of the EDI Council of Canada, a system to transfer goods electronically has been established with Bolands, a major grocery distributor in Nova Scotia.
- the Port of Halifax is the best example of how EDI systems can improve the efficiency of handling goods electronically.

B.2 Private Systems

The Nova Scotia Technology Network (NSTN) has been active in setting up a number of nodes across the province which allows InterNet access from most points in Nova Scotia via a local telephone connection. Metro Halifax has reported the highest per capita usage of the InterNet of any major centre in Canada.

A number of FreeNet have been established in the Sydney and Halifax areas and are increasing in popularity.

College l'Acadie, a local french language Community College offers a range of courses entirely by distance education, from 6 nodes across the province. The system is a very interactive approach which simulates a traditional classroom environment.

Applications in the Department of Agriculture and Marketing

C.1 Electronic Information Policy and Resource Use

- the Department of Agriculture and Marketing has developed a long range systems plan within the context of the Provincial Governments Information Architecture Plan. The "standards-based architecture" plan is designed to reduce the unnecessary redundancy and improve the inter-connectability of work stations and evolving departmental standards.
- the Nova Scotia Agricultural College (NSAC) is currently in the process of hiring a Systems Coordinator, who's responsibilities will include the development of guidelines and procedures for electronic dissemination of information.
- Nova Scotia has 1 full-time System Operator for FBMinet, funded under the Market Development Program of the Agri-Food Development Agreement who is responsible for data entry and maintenance on FBMinet.
- some limited information is available from the Department and NSAC via the Internet, although the timeliness and quality of the information is not consistent across all Branches or Departments.

C.2 Internal NSDAM/NSAC Systems

- the majority of NSDAM and NSAC staff located in Truro are linked electronically via a fibre-optics network in Truro. The NSAC's central VAX system serves as the hub linking a number of PC based LAN's and VAX terminal set-ups.
- staff also have full direct access to the Internet through the central VAX. The Halifax office has access to the Internet via NSTN.
- all field offices of the Department are equipped with PC based systems and have access to the FBMinet via modem. Several PC and terminal based LANs serve the Kentville office.
- there are a number of automated systems for program administration, client information and management and accounting, including the Nova Scotia Farm Loan Board and Farm Financial Assistance Section.

C.3 External NSDAM/NSAC Systems

- Nova Scotia operates a node on the FBMinet, which has logged over 12,000 calls from 590 users in the past 16 months, the third highest usage in the country, after Alberta and Sask. Nova Scotia offers toll-free status to all users and a direct "local" line for Truro users.
- Many of the Departments factsheets and regular newsletters are now available via FBMinet.

- Considerable effort has been made by the Plant Industry Branch to have their information available via the Internet. Project reports, in addition to a detailed overview of Branch activities can now be obtained. It is expected that similar electronic reporting will be extended across all Branches of the Department.
- the NSDAM is studying the potential for remote computer communications between the main computer system in Truro and outlying offices and mobile staff using the Internet.
- The NSDAM and NSAC have proposed to develop procedures for electronic dissemination of information and facilitating the transfer of information between various electronic systems possibly by "gatewaying" from Internet to FBMinet as an example.
- The NSDAM and NSAC have proposed to upgrade the information server capability of the Department and College by installing a dedicated computer server.

Other Information

- the Farm Business Management Section in cooperation with the Marketing Services Branch and NSAC are currently reviewing the information needs of Nova Scotia farmers and the effectiveness of electronic based systems (primarily FBMinet) in meeting these needs. A final report is expected by Jan '95.
- The Nova Scotia Electronic Highway Study recommended the following government action plan with respect to "Animating the Vision":
 - * Promoting Awareness, Understanding and Use;
 - by government (Civil Servants).
 - by the general public.
 - * Facilitating On-Going Community Consultation and Participation in Service Needs Assessment
 - on-going evaluation of client satisfaction.
 - assessment of delivery performance.
 - formalized client consultation process.

Prince Edward Island

Present Services

Various organizations and groups across Prince Edward Island have developed information services related to the information highway. Although not all items listed are directed specifically at the Agricultural Sector, they all have potential as communication platforms for rural clients.

Title: FBMinet (P.E.I. Node)

Sponsored by the National Farm Business Management Program and the Provincial Agriculture Departments, FBMI provides a national network for the Agricultural Sector. The main purpose of the network is to share farm business management information through a national forum and to demonstrate the use of the technology.

Title: Fan 2000

Fan 2000, sponsored by the P.E.I. Federation of Agriculture is a computer bulletin board service which gathers and maintains agricultural information. The goal of FAN 2000 is to demonstrate the advantages of computer bulletin board services to the agricultural sector and aid in the development of skills required to operate the technology.

Title: BATE (Business and Technology Exchange)

Bate was established by the Provincial Department of Economic Development and Tourism as a service to the P.E.I. business community. It provides businesses with up-to-date information on business opportunities, Government Tenders in Atlantic Canada, Government Assistance Programs, and international trade matters. Bate allows businesses to place notices and advertisements, exchange messages, order publications. A library of business feasibility studies, statistics, and useful software are also available. BATE is widely used and has approximately 1200 subscribers.

Title: PEInet (Gateway to Internet)

P.E.I.'s connection to Internet, PEInet presently has some 800 subscribers who can access a wide range of internet services. Beyond normal Internet services, the Provincial Government is sponsoring a project which allows access to the BATE system through PEInet. As well, a system for farm clients to access soil and feed lab test results on-line and do related analysis is presently available. There are approximately 850 users at present.

Title: PEI Government Wide-Area-Network (WAN)

The P.E.I. Government Wide-Area-Network (WAN) allows all Government Departments and Regional Service Centers to interconnect for exchange of information and E-Mail Services. This allows Agriculture staff working in the rural areas connection to central offices.

Internal System Information

Staff of the Agriculture Division are located primarily in the Agriculture Research Station in Ch'town. 2 Lans sevice their needs and connect them to the rest of the Department (located in downtown Ch'town) as well as to Regional Service Centres in 4 other locations in the province where Farm Business Section staff are located.

Most staff have access to Internet through PEInet, to FBMIInet, and to FAN 2000.

Efforts on the Information Highway

Agriculture and program/service information has been made available on various services (FAN 2000, FBMI, BATE, PEInet). Additional projects of this nature are ongoing or under development.

A project of the Agriculture Division's Soil & Feed Lab has made test results available to clients on-line through PEInet. As well, clients can interactively make further queries to determine fertilization processes based on the soil tests.

The Farm Business Management Section has a project in place to assist farmers in training on activities relating to electronic communications and the information highway.

Projects under consideration

Various projects relating to Expert Systems in an On-Line format are being researched.

Interest has been shown in the development of systems that would allow clients to apply for programs and services on-line

Other Information

The Department is undertaking a review of Electronic Information Dissemination. This review and planning project will allow the Department of Agriculture, Fisheries and Forestry to:

- determine the extent to which clients are equipped to communicate with the use of computers.
- determine clients' information needs
- review communication systems used here and elsewhere
- develop recommendations on the future applications of Information Technology developments.

Newfoundland

Strategic Economic Plan

In June 1992, the Province of Newfoundland released its Strategic Economic Plan which contained the following three recommendations that are presently being implemented. The creation of a Provincial Communications Agency which would include representation from the public, private and educational sectors. This Agency will be responsible for expanding data communications and for co-ordinating data networking initiatives within the Province, as well as developing standards for the industry.

The Province will accelerate programs and activities which facilitate joint ventures, technology licensing, co-manufacturing and other forms of industrial cooperation and investment.

Implement programs to develop further expertise in research institutions and the business community focusing on marine activities, including communications, the sciences ... fish and food processing and related manufacturing ... and to promote this expertise internationally.

Agriculture

The Agriculture Branch of the Department of Fisheries, Food and Agriculture is presently establishing a Local Area Network that will initially enable professional staff and subsequently, producers, processors etc. will also be able to access specific software packages, data bases and bulletin boards.

As with other provinces, Newfoundland has access to the FBMI-Net Bulletin board system. The province has established a 1-800 number to increase user access. The Province is presently developing a data base of Newfoundland related information which is anticipated to be loaded on the FBMI-Net in early 1995.

CANARIE

Two projects for the Canadian Network and Advanced Research in Industry and Education (CANARIE) were recently undertaken by a Newfoundland consortia. ChartNet, awarded to a consortium of Nautical Data International, Compusult Limited and Canadian Centre for Marine Communications, is a project to make a wide area network for the development and maintenance of electronic charts.

The Integrated Rural Delivery Network (IRDN) involving Newfoundland Telephone, Compusult Limited, TETRA/Telemedicine or MUN and ACOA/E-Net. This project is looking at new ways of delivering a broad range of service to non-urban areas.

ACRON is a recent project that has been initiated by MUN whose goal is to develop a highspeed testbed network in Atlantic Canada. Although still in the proposal stage, ACRON has the backing of Universities from the other Atlantic Provinces as well as support from CANARIE. Anticipated support from the Atlantic Provincial Governments as well as private sector companies such as Cable Companies and Telcos is anticipated.

ACOA/ENTERPRISE NETWORK

The Enterprise Network Inc., established in 1989, is a wholly owned subsidiary of Enterprise Newfoundland and Labrador Corporation, a provincial crown corporation dedicated to providing a decentralized and extensive range of services to small and medium-sized enterprises and economic development groups. Enterprise Network Inc is involved in a number of projects, the primary one being the ACOA Enterprise Network project. The major service elements are telecentre services for information technology suffusion to small business, an Online Business Information and Data Communications service, Training and Support Services and Database Development. The Network employees 32 personnel located in 7 regions, including St. John's.

Telecentres: Six telecentres located throughout the province provide business and economic development information and transfer information technology skills and concepts to rural areas. Each telecentre is equipped with IBM compatible microcomputers which employ Novell's Netware 3.1. local area networks (LAN). Two telecentres are inter-connected at 56 Kbps and plans are to connect the remaining four in similar manner. Clients have access to a variety of software applications as well as external information services (offered by the ACOA/Enterprise Network) accessed via modem-based communications. These telecentres serve more than 1000 clients each month.

Online Business Information and Data Communications: The Network offers more than 25 electronic information products outline including information on public tenders, business opportunities, reference sources, directories and access to the Internet. The online service is also widely used for electronic mail and file transfer services among business, government and non-government organizations involved in economic development programs.

Training and Support Services: As a client-driven project, the ACOA/Enterprise Network is committed to responding to clients requirements. Telecentre staff introduce clients to inform technology products and assist them in applying the technology to their business and economic needs. Staff and clients can receive training in the Clarenville Telecentre.

Database Development: The Network offers clients support to the development of database products. It has acquired a number of commercial database products for delivery; e.g. Memorial University's library catalogue, Thomas Register, Department of Fisheries and Oceans's library database, Statistics Canada's Small Business profiles. In-house developed (developing) database products include a business opportunities database and a variety of contacts databases e.g. Directory of Regional Development Associations and an Experts System - an interactive resource of experts.

Technical Environment: The processing platform used as the backbone on the ACOA/Enterprise Network information system is based on a microcomputer LAN utilizing the Novell Netware 386 product family. File and mail servers are attached to provide file storage, security and electronic mail facilities. Database servers utilizing the ORACLE relational database management system support the development and delivery of database services. A CD-ROM server allows multiple products to be accessed simultaneously from anywhere on the network. Dedicated connections to other systems enables ACOA/Enterprise Network to act as a single point of access to multiple external information sources, file transfer and electronic mail between different systems. Direct gateways have been implemented to Newfoundland and Labrador Computer Services and NLNet. Direct-dial access is provided to the central office through 12 incoming dial up service and over 4000 logins are recorded monthly. Through telecentres and dial-up access, the Network provides services to 90 communities through out the province.

Financial Structure: The ACOA/Enterprise Network project is funded through the Canada/Newfoundland ACOA/Enterprise Network Cooperation Agreement. As of April 1993, the ACOA/ Enterprise Network implemented subscription fees for access to its dial-up information services.

STEM-NET

STEM-Net is a state of the art computer network established across the province for educators who teach science, technology and mathematics. STEM-Net is designed to reach out to areas of Newfoundland which may be isolated previously by technology and presently by distance. The idea is to break down these barriers and accelerate the learning process.

At present STEM-Net now reached 75 percent of the schools in the province. The services available continue to grow as the network develops. At present teachers can take advantage of electronic mail, general information bulletin and newsgroups, access a wide range of on-line general library and database resources, take some courses through distance education, and access Internet.

TETRA

The Telemedicine Centre/TETRA group of Memorial University is widely regarded as an international leader in the use of teleconferencing technologies for health and learning applications. The development of this technology can be traced back to the 1970's when out of necessity the General Hospital in St. John's and off-shore oil rig owned by BP Canada entered into telecommunication arrangement to provide medical services in emergency situations. Typically the medical services available offshore and in the remote areas of the province are limited and designed only to treat minor or routine medical problems or to stabilize more serious cases for evacuation to comprehensive medical facilities. In the case of serious problems at the work site, access to on-line medical support from specialists is vital. Through Tetra these services could be provided and have proven invaluable for medical emergencies.

Canadian Government

A. FEDERAL INFORMATION HIGHWAY INITIATIVES

Industry Canada's Information Highway policy strategy for the telecommunications and broadcast sector focuses on the following three key policy objectives: create jobs through innovation and investment, reinforce Canadian sovereignty and cultural identity and ensure universal access at reasonable cost.

This is to be achieved through the observance of four operating principles of:
an interconnected and interoperable network of networks,
collaborative public and private sector development,
competition in facilities, products and services and privacy,
protection and network security.

Industry Canada is also leading a strategy to communicate the enabling effects of the appropriate, effective application of information technology to business and organizational activities in all sectors in the following way: (i) information gathering, statistical analysis and data dissemination, (ii) working toward policies and services of all levels of government consistent with the priorities and needs of a knowledge-based consumer/producer and (iii) a forum for organizations involved in fostering EE, to regularly exchange information and best practices on a national level

Treasury Board's Blueprint for Renewing Government Services Using Information Technology provides a vision of "government services that are affordable, accessible and responsive through:

- *direct service to clients through single window access.
- *transparent and seamless service through streamlined and integrated processes across functional and organizational lines.
- *the direct provision of value-added services.
- *staff access to continuous learning.
- *shared information, applications, resources and interconnected networks.
- *a paperless environment.

B. FEDERAL SERVICES

Industry Canada Canada Business Service Centres

A series of centres have been opened across Canada in cooperation with provinces to allow information to be provided via personal visit, telephone or fax back using a pathfinder of information and "back-room" resource specialists. There will be direct links with Industry Canada and other government data bases and the Internet to permit direct database searches (eg InfoExport, BOSS, WINexport).

The Open Government Project

This pilot has been developed by Industry Canada to serve as an education tool to inform people from around the world how the Canadian federal government works. This Internet service includes audio news broadcasts, constitutional documents, contact information for MPs, members of the Senate, Supreme Court and eventually other departments and agencies. There are several departmental science and business information services currently under construction.

SchoolNet and the Community Schools Information Project

The school system and the local library system have potential as important access points for information dissemination in many parts of rural Canada. Government program information is carried on the Schoolnet system and it is a vehicle for training and educating future generations in both the farm and rural sectors. The Community School Information Centres Project will provide access to Internet at the school (or library) for wider community use, as both a training tool and as an information tool.

Statistics Canada

The Talon Server is Stats Canada's Internet accessible "information about information" service. It is a gopher distributed and integrated search and retrieval system that describes the department and its' products and services. It includes free access to "The Daily", major release and conference dates and descriptions of subject matter divisions. It will soon include the Stats Canada catalogue.

Stats Canada On-Line is Statistics Canada's dial-in commercial electronic information service. It is available on a subscription basis only with additional charges for data that is selected and downloaded. It currently holds the trade data base, the horticulture data base and "The Daily".

Energy Mines and Resources

EMR is piloting a full colour, graphical geophysical data sharing system that is available through the Internet. One of the greatest benefits of the service is that the response has helped the department to identify new sets of clients and information needs as well as new information resources.

External Affairs

External Affairs has developed an on-line communication service, SIGNET, which replaces its fax service among foreign posts and Ottawa for the trade commissioner service. They are piloting a Market Intelligence\Information project (initially three areas, including pork). Part of the database includes names of sector experts.

Justice

Open Access to the Supreme Court of Canada

The University of Montreal faculty of law research centre has partnered with the Supreme Court of Canada to develop gopher and World Wide Web servers that provide open access to Supreme Court decisions. It is providing a valuable bilingual key word searchable data base for lawyers around the world. The service is similar to the 15 plus sites that are currently available in the United States.

FEDERAL PROVINCIAL

Farm Business Management Information Network

FBMINet electronic information includes farm management software, commodity reports, agricultural news and press releases, public message areas, private e-mail and on-line searchable databases. This dial-in service consists of a set of provincial nodes that are networked across Canada. The nodes exchange information daily. FBMINet is used by farm managers, extension personnel and researchers across Canada. It was developed by the Canadian Farm Management Council as part of the National Farm Business Management Program in cooperation with the various provincial agricultural departments.

C. AGRICULTURE AND AGRI-FOOD CANADA

Internal Networks

AAFC has been anticipating the growing necessity of information technology as a flexible, cost efficient and productive public administration tool. On-line and networked information services are now operational or under construction in each branch for internal purposes, ranging from news clipping services to database sharing to posting of job opportunities. These activities highlighted a need for common standards and better coordination.

Internal e-mail now links 4800 department staff members across the country. Documents are shared on Local Area Networks. Staff also access the Internet to build the department's linkages to global information resources and delivery points.

External Services

Food Industry Data Base (FIND)

This interactive data base has been operational for more than two years. It offers dial-in on-line access and search capabilities to agri-food industry and government information 24-hours a day. Contributions from industry are encouraged. Current subject areas include: an inventory of federal and provincial agri-food development assistance programs, industry organization information and contact directory, consumer trends and research, Canadian and U.S. regulations, retail and foodservice information, and Inventory of Canadian Agri-Food Research.

The Food Bureau in the Market and Industry Services Branch is currently working on several pilots with industry organizations and private sector consortiums to develop Internet information access systems, services and training.

Markets Information Electronic Bulletin Board

The Markets Information bulletin board has been operational for three years. It offers the following dial-in on-line services 24 hours a day at (613)-957-4105:

Daily National Livestock Report, Canadian Livestock and Meat Trade Report

Canadian Pulses Report (Weekly), Potato Daily Report (Oct-June), Wholesale to Retail Quotations on Imported Fruits and Vegetables - Toronto and Montreal reports (daily) and 10 other Canadian markets (weekly), Horticultural Crop News Report, Prices and Fruit and Vegetable Storage Reports (monthly Nov.-June), Dairy Market Report (monthly) and Poultry Market Report (weekly)

The Agri-Food Trade Network (ATN)

ATN is a pathfinding system through personalized service for the provision of customized, value-added information to agri-food sector clients who are seeking export market opportunities. Users will access information through personal telephone contact with trained operators and fax delivery of specific information. There are four pilots established to date in: the library of the Sir John Carling Building, Club Export in Montreal, the Canada/NS Business Service Centre in Halifax and the regional office of MISB in Winnipeg. The pathfinder software will give the operators access to information at several levels - by subject area (product or geographic), by staff expert (i.e. specialists in the department and at Canadian posts abroad) and by the databases available to the Department. The service is being developed in partnership with External Affairs and Industry Canada.

Regulatory Information on Pest Control Products

The Plant Industry Directorate of Food Production and Inspection Branch offers on-line access to its data base on registered pest control products through the Canadian Centre for Occupational Health and Safety. This is intended as a service to regulatory colleagues in provincial government agencies and to the industry. The data base is now accessible via the Internet. It is also marketed as a subscription service on CD-ROM. The subscription service includes the full text of pest control products labels.

Enhanced Import Operations

Food Production and Inspection Branch is conducting pilot projects to enhance agricultural import operations, in coordination with Revenue Canada, Customs, Excise and Taxation. Pilots include: testing the feasibility of electronically transmitting maritime cargo manifests to Customs, then on to Agriculture and Agri-Food Canada; and creation of an electronic bulletin board and database containing all plant quarantine import requirements. The result for industry and consumers will be more timely entry of agricultural shipments in compliance with regulations, and more effective control of shipments which are not.

PIRRCS

Plant Inspection Results and Ratings Calculation System (PIRRCS) is a Food Production and Inspection Branch computer notebook-based system designed to allow one-time data entry of inspection information by fresh fruit and vegetable inspectors. Information is entered directly at the inspection site by the Inspector and a copy of the certificate of inspection is then printed and given to the industry client before the inspector leaves the premises. As the data is electronically transferred throughout the various levels of authority, no re-keying of information is required, and users at all levels are provided with the ability to create their own custom reports.

Research Branch

Research branch is building several Internet accessible information services for the research community. The Inventory of Canadian Agricultural and Agri-Food Research (ICAR) is available through CANOLE at NRC, CD-ROM from Silverplatter, Internet via Suranet, the AAFC Food Industry Data Base and Dialogue. ICAR contains information on approximately 4,000 agriculture and food, human nutrition and related biotechnology research projects under way in Canada. This includes research by federal and provincial governments, colleges, universities, corporations and private organizations.

Research Branch is also working in collaboration with the Agricultural Institute of Canada and several Canadian universities to develop technology transfer information services. The PARI DSS Gopher is one example of a specialized service that has been developed in partnership with the University of Saskatchewan.

Rural Secretariat

Pilot Rural Information Centre Project This pilot will use the specialized services of the Canadian Agricultural Library (CAL) as a focal point for information on rural Canada, providing electronic linkages to libraries and centres elsewhere. It will enable external users to obtain information through reference questions, bibliographic and on-line searches, etc. It will provide a pathfinding and brokerage service and can develop general and customized information products. It will also promote greater networking and resource sharing among libraries and information centres in rural renewal/development.

Rural Listserve The Rural Secretariat is collaborating with a number of groups and individuals to establish a Listserv for rural Canada. This initiative would be linked with the Rural Information Centre to provide up-to-date information on federal programs, publications and events concerning rural Canada.

Canadian Agriculture Library

The Canadian Agriculture Library has a number of initiatives to improve information services using Internet. It is testing a new document transmission system called ARIEL. This product enables staff to scan articles directly from a printed publication and then transmit the electronic image over the Internet to another ARIEL workstation where they can be printed or sent by fax.

The Library has also produced a CD-ROM version of AgriCat, the Department's bibliographic inventory. It is currently investigating ways to make this product available for sale to the public. The Library hopes to make AgriCat available via ACEIS, a pilot project which is described below.

Agriculture Canada Electronic Information Service (ACEIS)

The objective of this pilot project is to provide "a client-driven, single-window electronic access to the Department's information and services in order to improve the decision-making, business effectiveness and well-being of the Canadian Agri-Food sector."

This initiative will enable the Department to provide linked, interactive information services targeted to the agri-food industry, other departments and government information sharing groups, rural stakeholders, the media and the general public. Timely, flexible, "single window" access to information such as departmental news and announcements, market data and analysis, research and technology and, regulations will be made available through the use of voice, fax, Internet or Electronic Bulletin Board services.

The pilot will see a simplified model starting in December 1994 with a more developed system becoming operational by April 1995. A further six-month trial will provide client feedback and other information necessary to prepare a business case by September 1995.

D. Education and Training

Many of the AAFC staff are currently being trained for use of Internet type tools and applications. Government, academic institutions and private interests are being used as providers for client training and education.

**FEDERAL-PROVINCIAL WORKING GROUP ON AGRICULTURE AND
THE RURAL SECTOR AND THE INFORMATION HIGHWAY**

Information Highway Working Group

Dr. H. Bruce Huff (Co-chair)
Director
Industry Information Program Division
Industry Performance and Analysis Directorate
Department of Agriculture
Sir John Carling Building,
Ottawa, Ontario
K1A 0C5
Tel: 613-995-5880
Fax: 613-995-3761
EMAIL: HUFFBRU@EM.AGR.CA

Mr. Alan Grant
Supervisor, Farm Business Management
Department of Agriculture and Marketing
P.O. Box 550
Library Building
137 College Road
Truro, Nova Scotia
B2N 5E3
Tel: 902-893-6579
Fax: 902-895-7693
EMAIL: AGRANT@FM.NSAC.NS.CA

Ms. Helene Brassard
Gouvernement du Quebec
Ministere de l'Agriculture,
des Pecheries et de l'Alimentation
200A, chemin Ste-Foy, 10^e etage
Quebec (Quebec)
G1R 4X6
Tel: (418) 643-2460
Fax: (418) 646-6564
EMAIL: GEAGRI@RRIQ.QC.CA

Mr. John MacQuarrie
Department of Agriculture, Fisheries
and Forestry
Government of Prince Edward Island
Jones Building
11 Kent Street, 5th floor
Charlottetown, P.E.I.
C1A 7N8
Tel: 902-368-4880
Conference Call Tel: 902-368-5667
Fax: 902-368-4857
EMAIL: JMACQUAR@PEINET.PE.CA

Mr. Sandy Lauder
Special Advisor to DM
Government of Saskatchewan
Department of Agriculture and Food
Walter Scott Building, 114 - 3085 Albert Street
Regina, Sask. S4S 0B1
Tel: 306-787-5082
Fax: 306-787-2393
EMAIL: SLAUDER1@AGR.GOV.SK.CA

Mr. Dennis Shea
Supervisor of Policy & Research, Agriculture Branch
Department of Fisheries, Food and Agriculture
Provincial Agriculture Building
Brookfield Road
P.O. Box 8700
St. John's, Newfoundland
A1B 4J6
Tel: 709-729-6779
Fax: 709-729-6046
EMAIL: N/A

Mr. Wilson Loree
Head, Farm Business Management Branch
Alberta Agriculture, Food & Rural Development
5030-50 Street, 201
Olds, Alberta
T4H 1S1
Tel: 403-556-4213
Fax: 403-556-7545
EMAIL: LOREE@AGRIC.GOV.AB.CA

Mr. Bill Foster
Program Development Advisor
Interministerial Coordination Unit
Rural Development Secretariat
Rural Development Division
Ministry of Agricultural Food and Rural Affairs
10 Alcorn Avenue, Suite 100
Toronto, Ontario
M4V 3B3
Tel: 416-326-3499
Fax: 416-326-3507
EMAIL: FOSTERBI@EPO.GOV.ON.CA

Mr. Dave Hope
Manager, Economic Analysis Section
Policy & Programs Division
Ministry of Agriculture and Food
Ridgetown College - Main Street East
Agricultural Technology
Ridgetown, Ontario
N0P 2C0
Tel: 519-674-0714
Fax: 519-674-5043
EMAIL: HOPED@GOVONCA.GOV.ON.CA

Mr. Greg Fearn
Acting Director
Program & Policy Analysis Branch
811 Norquay Building
401- York Avenue
Winnipeg, Manitoba
R3C 0P8
Tel: 204-945-3979
Fax: 204-945-5024
EMAIL: N/A

Mr. Ron Sera
Director
Extension Systems Branch
Ministry of Agriculture, Fisheries and Food
Government of British Columbia
808 Douglas Street
Victoria, British Columbia
V8W 2Z7
Tel: 604-356-1688
Fax: 604-387-3522
EMAIL: RSERA@GALAXY.GOV.BC.CA

Mr. Brian DuPlessis
Director
Farm Business Management Branch
N.B. Department of Agriculture
850 Lincoln Road, 3rd Floor
P.O. Box 6000
Fredericton, N.B.
E3B 5H1
Tel: 506-453-5476
Fax: 506-453-7406
EMAIL: BDUPLESSIS@GOV.NB.CA

