



BCNET

2011/12 ANNUAL REPORT

DELIVERING VALUE



MISSION

BCNET offers cost-effective shared solutions that place its members at the forefront of information and communication technology innovation.

VISION

B.C.'s research and higher education institutions will achieve their strategic objectives enabled by the contributions of BCNET.



4	Message from the President
6	Message from the Chair
8	BCNET: A Unique Collaboration
10	BCNET Members
12	Services: A Common Vision
14	BCNET: A Service Integrator
16	The BCNET Advanced Network
18	BCNET Advanced Network Service Levels
20	Building and Improving the Advanced Network
22	How are Researchers using the Advanced Network?
24	Commercial Internet Service
26	The BCNET Transit Exchange Service
28	New Services
32	The Power of a Connected Community
34	BCNET Advisory Committees and Working Groups
36	Serving Our Members
38	Board of Directors
40	BCNET Financial Overview
43	BCNET Financial Statements

MESSAGE FROM THE PRESIDENT

MICHAEL HRYBYK, PRESIDENT AND CEO, BCNET



Over the past year, BCNET carried out its mission of creating cost-effective shared IT services for its members. We improved our network infrastructure to keep pace with the demands of our world-class research and teaching institutions. And our open, collaborative model of working continued to evolve to encompass an even wider community.

BCNET continued to support the over-arching mission of B.C. post-secondary institutions to conduct research, improve teaching and learning, and engage in community service.

High-profile projects at TRIUMF and NEPTUNE Canada, as well as other initiatives in the sciences and engineering disciplines, pushed the upper bounds of network use. The demand from arts, humanities, and social sciences is also on the rise, reflecting our increasingly digital—and social—world.

Interactive videoconferencing via the Blue Jeans Network, and world-class access to content networks such as Google, Microsoft and Amazon, helped faculty and students at higher education institutions attain their academic goals. The signature UBC

Distributed Medical Program continued to rely on the BCNET Advanced Network, which expanded to UBC Okanagan in Kelowna.

The generation of “big data” from all disciplines is now routine, and is pushing requirements for connectivity, computing and storage; the digital infrastructure to support these disciplines is essential to their success and to the advancement of knowledge.

Our Transit Exchanges are now integral parts of these post-secondary and research communities, and function as increasingly important data hubs. These innovative centres allow local community data to be exchanged with BCNET members, and serve as a way to connect to the Internet through a competitive marketplace of commercial providers.

None of the above would be possible without the continued support of CANARIE, the B.C. Ministry

of Advanced Education, and most importantly, the contributions of the BCNET member institutions. The commitment of our Board of Directors, which consists of senior executives from higher education, government and industry, and the significant efforts of our skilled management and staff, have made the past year another success. Our Committees and Working Groups provided valuable suggestions and helped refine our current services and offered guidance for future initiatives.

Thanks to everyone in the BCNET community for the efforts over the past year. We will continue to adapt to the new and exciting challenges the next evolution of information technology brings.

A handwritten signature in black ink, appearing to read 'MHrybyk'.

MICHAEL HRYBYK
President and CEO, BCNET

MESSAGE FROM THE CHAIR

JAY BLACK, CIO, SIMON FRASER UNIVERSITY




BCNET is committed to service excellence and continuously delivering value for members. Whether we are building bigger and faster networks in support of teaching, learning and research, or leveraging our collective vision to share services, our members are partnering effectively to align our goals, strengths and resources, and to realize greater efficiencies and economies of scale.

Digital infrastructure for research, innovation and education is evolving rapidly. We are a willing, enthusiastic, respected and capable player in this emerging digital ecosystem, and we're enabling our researchers and educators to connect and innovate globally, nationally and provincially.

We have been successful at reducing costs for members by sharing technology services. For example, this year we launched a data backup service that's enabling members to leverage existing campus equipment, staff and resources, thereby reducing their operational costs by 30-50 per cent. Additionally, we have saved members over \$974,000 on storage equipment costs through a pre-negotiated Master Service Agreement with NetApp.

We have been reaching out to provincial institutions and organizations to explore new partnerships and opportunities. Furthermore, we have completed major enhancements to our network, and are looking at leveraging our assets to advance existing and future members of BCNET.

Our collaborative, unified approach is without parallel, and I am proud of our accomplishments. Our model for shared services is paying real dividends, and its success is enticing other organizations to follow our lead.

 JAY BLACK
Chair, BCNET Board of Directors



BCNET: A UNIQUE COLLABORATION

MEMBER OWNED. MEMBER OPERATED. MEMBER SHARED.

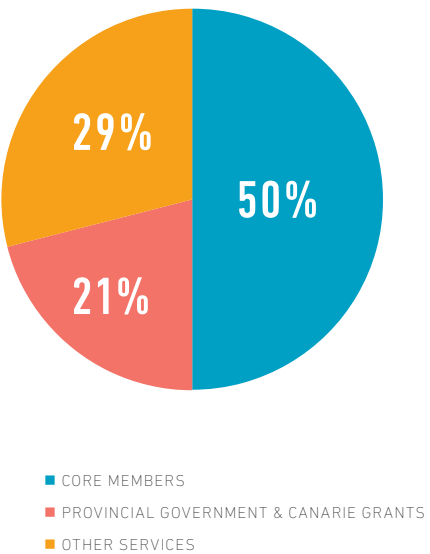
ABOUT BCNET

BCNET is a not-for-profit, shared information technology services consortium led by its members, British Columbia’s research universities and institutes. Owned, governed and funded primarily by its members, BCNET facilitates a unique, collaborative inter-institutional environment—one based on equality and common goals—to explore and evaluate shared IT solutions for mutual technology challenges.

BCNET’s shared services approach is designed to help member institutions cut costs, minimize technology duplication, improve operational efficiency and better serve their students, faculty, staff and communities.

BCNET’s high-speed, high-capacity, fibre optic advanced network provides a common and powerful platform to deliver services efficiently, cost-effectively and reliably. The network interconnects 65 higher education and research institution sites in British Columbia and 72 colleges, schools and universities through the Provincial Learning Network (PLNet).

BCNET FUNDING



A DISTINCTIVE COMMUNITY OF PARTNERS

Since 1988, BCNET has been dedicated to meeting the unique technology needs of its members by delivering leading-edge technology services in support of teaching, learning, research and community.

BCNET has built a strong foundation of mutual trust and respect based on many years of successful collaborations with technology leaders across higher education institutions in B.C.

This foundation has been the catalyst for the development of a distinctive community—an incomparable partnership—that aligns a multitude of higher education institutions in the province to work together as an integrated whole.

BCNET MEMBERS

CORE MEMBERS



HIGHER EDUCATION MEMBERS



RESEARCH MEMBERS



BC INTERUNIVERSITY DATA CENTRE



AGRICULTURE AND AGRI-FOOD CANADA

ENVIRONMENT CANADA
CANADIAN CENTRE FOR CLIMATE MODELLING AND ANALYSIS
NATIONAL WATER RESEARCH INSTITUTE



NATIONAL RESEARCH COUNCIL
DOMINION RADIO ASTROPHYSICAL OBSERVATORY
HERZBERG INSTITUTE OF ASTROPHYSICS
INSTITUTE FOR FUEL CELL INNOVATION



UNIVERSITY HOSPITAL OF NORTHERN B.C.



BC CHILDREN'S HOSPITAL



ROYAL JUBILEE HOSPITAL

SERVICES

A COMMON VISION

“In these challenging economic times, colleges and universities must work together to attain academic and operational successes. The shared-services approach can help higher education institutions cut costs and better serve their students, faculty, staff, and communities. It is a model that can allow institutions to stay focused on the core missions of teaching, learning, and research.”

EDUCAUSE Review, vol. 46, no. 4 (July/August 2011)

LUIS M. PROENZA
President | University of Akron

ROY A. CHURCH
President | Lorain County Community College

THE VALUE OF SHARED IT SERVICES

BCNET’s unique collaborative model is helping B.C.’s research universities and institutes alleviate financial pressures by reducing costs and providing better economies of scale.



With today’s constrained budgets, campuses in British Columbia are exploring ways to share IT services to reduce technology duplication and minimize their campus operating costs.

The rising cost of supporting information technology services, combined with shrinking budgets, are placing growing financial pressure on campus IT budgets. Moreover, demand for services is rising as students, faculty and staff are increasingly dependent on mobile devices and information technology for teaching, learning and research.

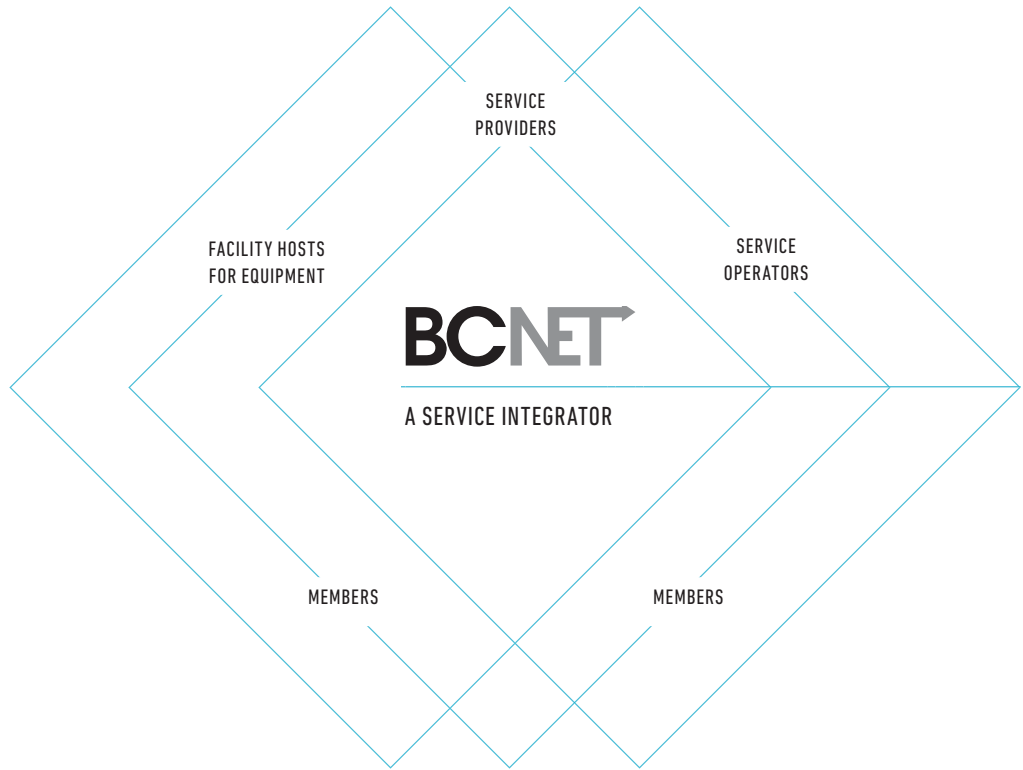
BCNET facilitates an inter-institutional forum amongst members for collaboration and discussion about important information technology issues and challenges. Working in this cooperative setting, members develop successful models of operation to share information technology services and determine the number and breadth of services that are needed to better serve students, faculty, staff, and communities.

SERVICES

BCNET: A SERVICE INTEGRATOR

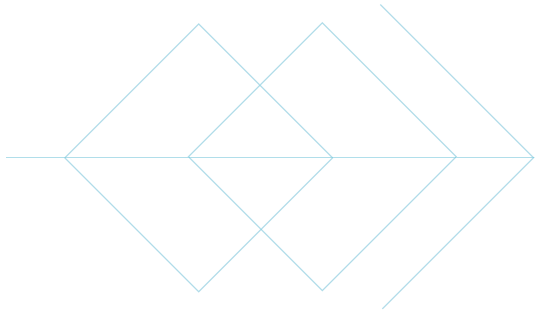
BCNET operates as a service integrator by acquiring services from its own members or from third-party service providers. By leveraging existing member resources such as hardware,

expertise and staff, and by coordinating and managing contracts on behalf of its members, BCNET reduces IT costs and offers economies of scale for its members.



SERVICES

A PORTFOLIO OF SERVICES



EXISTING SERVICES

- BCNET ADVANCED NETWORK
- COMMERCIAL INTERNET
- TRANSIT EXCHANGE SERVICE (INTERNET EXCHANGE)

NEW SERVICES 2011-2012

- DATA BACKUP AND STORAGE
- DISTRIBUTED VIDEOCONFERENCING
- STORAGE EQUIPMENT PROCUREMENT
- VIRTUAL ROUTER
- NETFLOW

SERVICES DEVELOPMENT

- CLOUD COMPUTING
- SOFTWARE PURCHASING
- DIGITAL MEDIA REPOSITORY
- SHARED DATA CENTRE
- TELEPRESENCE

THE BCNET ADVANCED NETWORK

BCNET's supercharged network spans 2,029 kilometers across British Columbia and connects higher education and research institutions in the province.

BCNET links to the CANARIE network, Canada's Advanced Research and Innovation Network that stretches 19,000 kilometers across Canada. The Network links researchers and innovators across the country to a web of 112 private research networks reaching over 80 countries.

UP TO 72 WAVELENGTHS OF CAPACITY AT 10 GIGABITS/WAVELENGTH

CARRIER-CLASS IPV6-ENABLED NETWORK

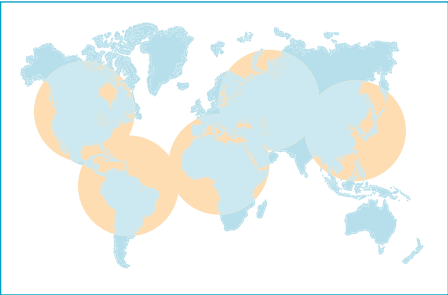
The BCNET Advanced Network is a private Internet for higher education and research. It facilitates the transport of vast amounts of data amongst local and global research and higher education institutions which would not be possible over the commercial Internet. The network also provides a powerful technology platform to deliver shared services.

- Sharing, accessing and transmitting very large data files
- Videoconferencing
- Accessing high-performance and grid computing
- Operating and monitoring remote sensing equipment
- Collaboration technologies for teaching

445%

Since 2006, advanced network traffic has increased 445% and, in the last year alone, demand for bandwidth has grown by 41%.

REACHING 112 NETWORKS IN OVER 80 COUNTRIES



BCNET ADVANCED NETWORK SERVICE LEVELS

87%

OF RESEARCHERS SURVEYED ARE
VERY SATISFIED WITH THE BCNET
ADVANCED NETWORK*

*From a survey of researchers in British Columbia by Sentis Research

99.9466*

COMMERCIAL INTERNET
AVAILABILITY

*Average percentage of time from April 2011 - March 2012 that Internet services were available at each Transit Exchange. Downtime includes scheduled maintenance, unscheduled outages and periods of uncollected data.

99.989*

ADVANCED NETWORK
AVAILABILITY

*Average percentage of time from April 2011 - March 2012 that the CANARIE network was available to BCNET. Downtime includes scheduled maintenance, unscheduled outages and periods of uncollected data. Lightpath connectivity is not included.

24/7

SUPPORT FOR THE
ADVANCED NETWORK

University of British Columbia's
Network Operations Centre
provides around-the-clock expert
support to ensure uninterrupted,
problem-free network service.

THE VALUE OF THE ADVANCED NETWORK

BCNET serves as a fibre holding company,
providing a means for its member community
to acquire fibre optic network assets.

BCNET core members pay a combined annual
rate of \$1.7 million for fibre optic advanced
network service that has an estimated annual
market rate of \$3.4 million for the equivalent
level of high-speed service.

The collective savings for core members is
\$1.7 million annually, or 50 per cent, over
current market rates.

BCNET core members have an invested
value of \$14 million in the long-term assets
that make up BCNET's fibre optic advanced
network.

The estimated market value for a comparable
dedicated high-speed network service is over
\$34 million.

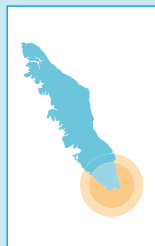
SAVINGS PER YEAR FOR MEMBERS

\$1.7M

INVESTED VALUE IN FIBRE OPTIC
ADVANCED NETWORKS

\$14M

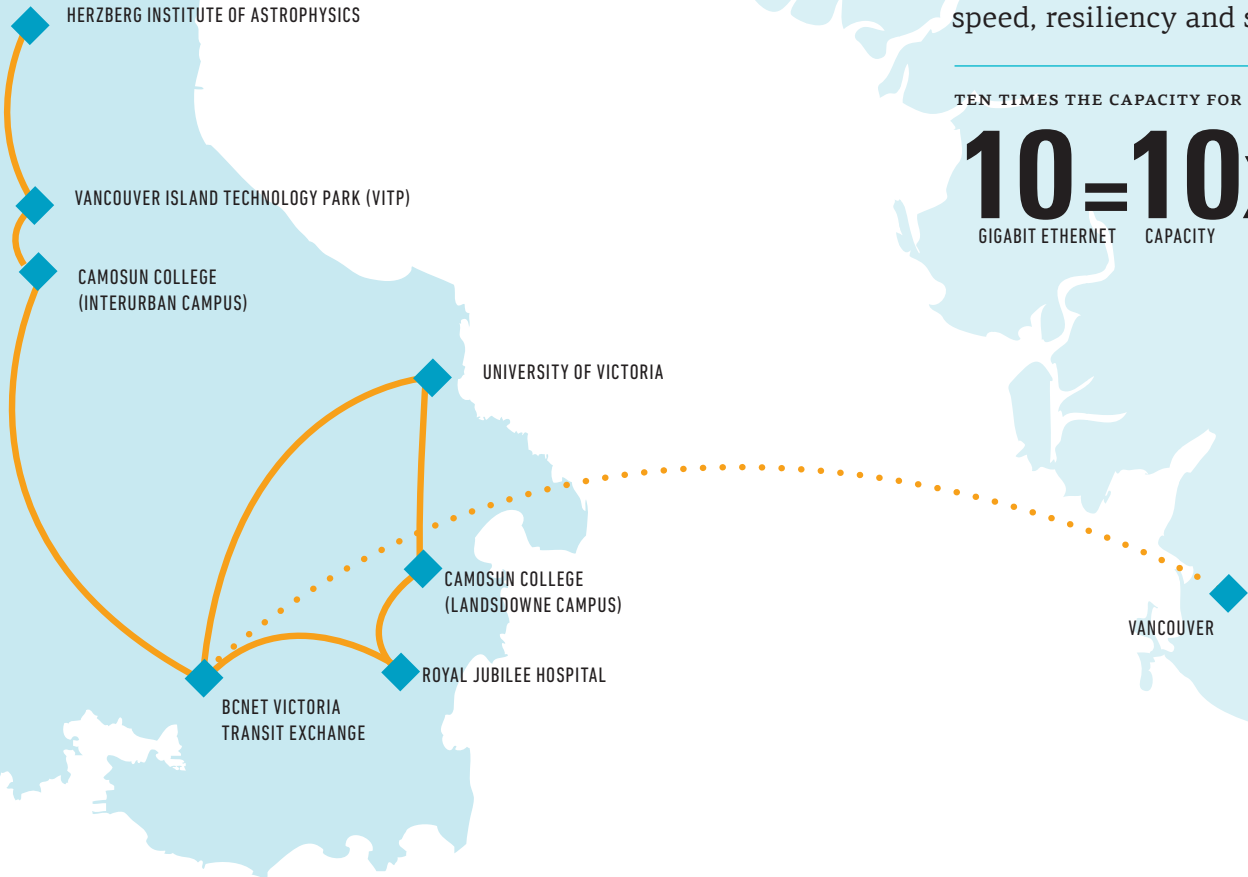
BUILDING AND IMPROVING THE ADVANCED NETWORK



VANCOUVER ISLAND GETS A BROADBAND BOOST

This year, BCNET completed the construction of a 10-Gigabit high-speed fibre optic network that links new research and higher education institutions in the Saanich region of Vancouver Island. These supercharged advanced networks provide unfettered bandwidth that enables research and higher education institutions to connect and collaborate across the province and around the world.

A high-speed redundant network was built for the University of Victoria that safeguards network services in the event of a disaster.



NETWORK UPGRADES

BCNET continually upgrades its existing digital infrastructure to enhance network capacity, speed, resiliency and security.

TEN TIMES THE CAPACITY FOR B.C.'S LEADING RESEARCH FACILITIES

10=10x
GIGABIT ETHERNET CAPACITY

- TRIUMF to LHCONE (Large Hadron Collider Open Network Environment)
- Genome Sciences Centre
- BC Cancer Agency - BC Cancer Research Centre
- WestGrid to University of British Columbia

IMPROVING NETWORK RESILIENCY

Secondary or fully redundant networks have been built for core members and are delivering critical backup network service in the event of a disaster.

- British Columbia Institute of Technology
- University of British Columbia
- Simon Fraser University
- Thompson Rivers University

ENHANCING NETWORK SERVICE

This year, BCNET completed a feasibility study to build a Transit Exchange in Surrey, B.C. The Transit Exchange will increase the diversification of network services for Vancouver-based members.

HOW ARE RESEARCHERS USING THE BCNET NETWORK?

In 2012, BCNET conducted a quantitative research study to gather data from researchers about their use of the BCNET Advanced Network, network service satisfaction and requirements for network storage. A total of 304 researchers were selected in B.C. and 80 researchers completed the survey.

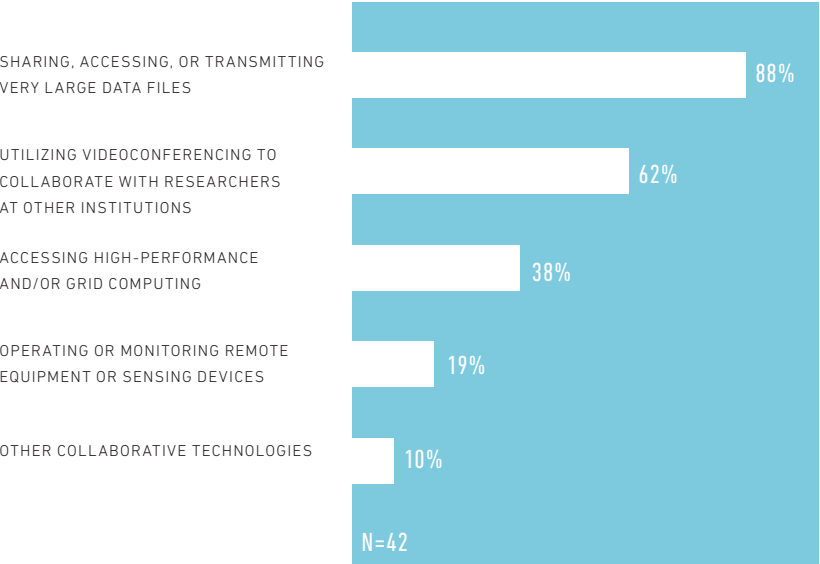
\$88M

THE TOTAL AMOUNT OF RESEARCH FUNDING GRANTS FOR PROJECTS THAT RELY ON THE BCNET NETWORK

RESULTS FROM SURVEY RESPONDENTS

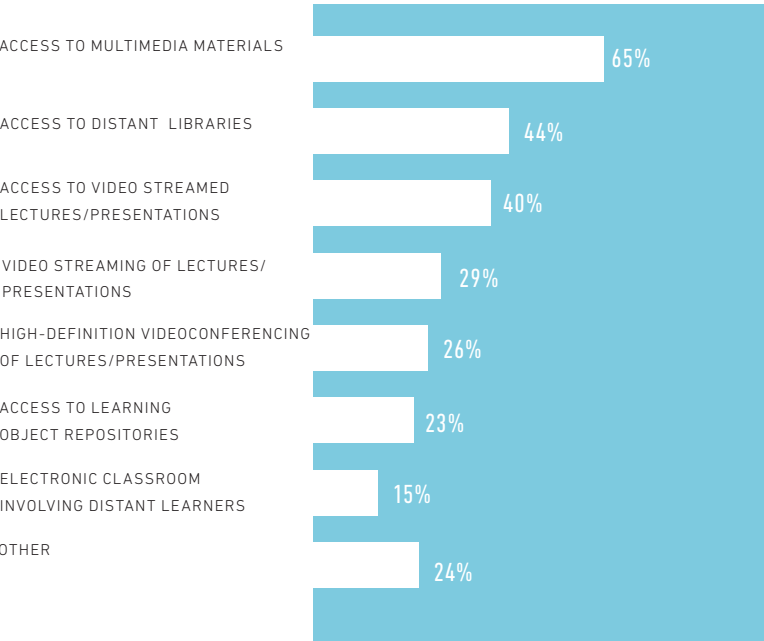
53% USE THE BCNET ADVANCED NETWORK FOR VERY LARGE DATA COLLABORATIONS FOR RESEARCH

TYPES OF RESEARCH COLLABORATION USED



76% USE THE BCNET ADVANCED NETWORK FOR TEACHING

COLLABORATION TECHNOLOGIES USED FOR TEACHING



FUTURE REQUIREMENTS

74%

OF RESPONDENTS PREDICT THEY WILL WORK ON RESEARCH PROJECTS THAT REQUIRE HIGH-SPEED ADVANCED NETWORKS, WITHIN THE NEXT THREE TO FIVE YEARS

84%

OF RESPONDENTS REPORTED THAT THEY WILL NEED COLLABORATION TECHNOLOGIES FOR TEACHING, WITHIN THE NEXT THREE TO FIVE YEARS

COMMERCIAL INTERNET SERVICE

Internet demand has nearly doubled in the past three years as more and more students, faculty and staff go online. In fact, research universities and institutions in B.C. are one of the largest wholesale consumers of Internet services in the province.

SOCIAL MEDIA
GAMES
VIDEO
STREAMING
NETFLIX
WIRELESS
DEVICES
GOOGLE
FACEBOOK
YOUTUBE
TWITTER

BCNET buys in bulk and aggregates Internet services on behalf of its core members to secure the best service at the lowest price.

REDUCED INTERNET COSTS BY

17%

In an era of exponential demand, BCNET has successfully cut Internet costs for its six core members by 17% over last year, while increasing overall capacity.

Peering diverts traffic from commercial Internet providers by as much as 40% and saves members an estimated \$228,000 per year.

BCNET REDUCES COSTS BY:

- >>> Acting as a service aggregator that negotiates contracts with commercial vendors for the best service at the lowest rate.
- >>> Enabling cost-free Internet traffic to travel from member sites to popular websites like Google and Facebook through peering relationships at Internet Exchanges.

THE BCNET TRANSIT EXCHANGE SERVICE

AN INNOVATIVE INTERNET EXCHANGE

“Through Wavefront’s access to the BCNET Advanced Network, we were able to collaborate with researchers at SFU and quickly move from testing to prototyping.”

PETER LUONG,
Fusion Pipe's CEO

WHAT IS THE BCNET TRANSIT EXCHANGE?

The BCNET Transit Exchange, an innovative Internet Exchange, is a single high-performance platform that enables networks of Internet service providers, content and entertainment providers, co-location and web hosting providers, broadcasters, research and higher education institutions, business and government to meet and exchange IP traffic and buy and sell network services. The Transit Exchange provides participants lower costs and increased network performance.

BCNET has built five Transit Exchanges in B.C. to optimize data traffic, provide a wide-array of cost-effective network services for members and to foster community and economic development.

NEW PARTICIPANTS

Over the last year, six new organizations joined the Transit Exchange for the benefits of peering, improving network performance and buying and selling network services.

>>> PRINCE GEORGE TRANSIT EXCHANGE

CITYWEST CABLE AND TELEPHONE CORP.

>>> VICTORIA TRANSIT EXCHANGE

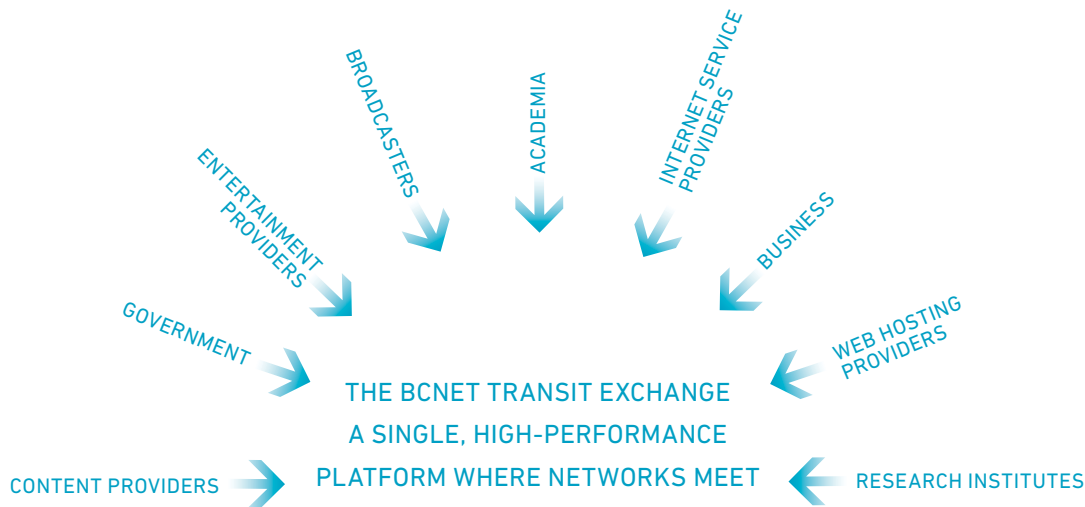
CAMOSUN COLLEGE – LANSDOWNE AND INTERURBAN CAMPUSES
QUICKSILVER WIRELESS
UNIVERSITY OF VICTORIA – NEPTUNE

>>> KELOWNA TRANSIT EXCHANGE

OKANAGAN COLLEGE – AEROSPACE CAMPUS
AGRICULTURE AND AGRI-FOOD CANADA – SUMMERLAND RESEARCH FACILITY

>>> VANCOUVER TRANSIT EXCHANGE

WAVEFRONT - WIRELESS INNOVATION SOCIETY OF BRITISH COLUMBIA
AGRICULTURE AND AGRI-FOOD CANADA – AGASSIZ RESEARCH FACILITY



NEW SERVICES



DATA BACKUP AND STORAGE

STORAGE EQUIPMENT PROCUREMENT

VIRTUAL ROUTER

NETFLOW

CLOUD VIDEOCONFERENCING

TELEPRESENCE

DATA BACKUP AND STORAGE

DATA-SAFE **DECREASES MEMBER OPERATING COSTS** FOR SECONDARY DATA BACKUP BY

↓ 30-50%

DATA-SAFE is an online, fully managed, fast, safe and secure secondary backup service that stores data at a campus data centre inside B.C., but outside of the earthquake zone.

The service not only reduces risk to members' data, it effectively decreases members' operating costs for secondary data backup service by 30-50 per cent. By fostering inter-institutional partnerships, BCNET was able to leverage existing campus equipment, infrastructure and expertise to create this successful integrated service.

STORAGE EQUIPMENT PROCUREMENT

↓ BCNET REDUCED MEMBER STORAGE EQUIPMENT COSTS BY 55% OR AN ESTIMATED \$974,000

55%

BCNET has reduced storage equipment costs for members by as much as 55 per cent, or an estimated \$974,000, by negotiating a Master Service Agreement (MSA) with NetApp, a commercial vendor that offers innovative data storage solutions.

The MSA offers the option to purchase storage equipment from a pre-negotiated price list and is helping standardize storage equipment across member institutions.

NEW SERVICES

DISTRIBUTED VIDEOCONFERENCING SERVICES

With shrinking campus budgets and escalating travel costs, inexpensive, highly efficient, distributed videoconferencing services provide immediate returns in reduced travel time and costs.

CLOUD VIDEOCONFERENCING FOR PENNIES

697 MEETINGS VIDEOCONFERENCING MEETINGS WERE HELD ACROSS 11 BCNET MEMBER INSTITUTIONS USING BLUE JEANS NETWORK.

BCNET funds and bulk buys Blue Jeans Network services, a cloud-based videoconference bridging service that enables easy and low-cost video collaboration, anywhere, anytime.

Adopted and funded by BCNET in 2011, Blue Jeans offers a cost-effective, easy-to-use, cloud service that links room-based systems to multiple videoconferencing platforms.

BCNET invested \$40,000 on a one-year service contract that extended service to its member community. A business case has been developed that proposes a larger-scale adoption of Blue Jeans for members.

TELEPRESENCE FOR VIRTUALLY-THERE MEETINGS

BCNET is investigating the viability of Telepresence, a videoconferencing system that creates life-like immersive experiences, as an enterprise-level service for higher education members.

Telepresence creates a virtual experience by replicating face-to-face interactions through sophisticated video monitors and audio systems. The technology can open new possibilities for learning through virtual training environments, improved collaboration and reduced travel costs.

>>> EASY TO USE
SCHEDULE MEETINGS USING A WEB INTERFACE

>>> SCALABLE
UP TO 25 PEOPLE FROM ANYWHERE IN THE WORLD CAN ATTEND A MEETING

>>> UNLIMITED ACCESS
ANYONE WITH A WEB BROWSER CAN JOIN A MEETING

VIRTUAL ROUTER

The Virtual Router service reduces equipment, facility and operating costs by

28-40%*

In 2012, BCNET launched a Virtual Router service that is removing financial barriers for smaller institutions to connect to the BCNET Advanced Network.

The Virtual Router service is a cloud-based, carrier-grade, high-performance router, or network switch, that connects an institution's network to the BCNET Transit Exchange.

Routers, which direct traffic between networks, can be cost-prohibitive investments for smaller organizations. This virtualized service offers shared hardware, a "virtual router", that eliminates the need for members or affiliates to purchase, operate and service costly equipment on their own.

*Based on a 3-year amortization period for equipment

NETFLOW FOR NETWORK VISIBILITY AND SECURITY

BCNET has investigated adopting a real-time network traffic analyzer and monitoring solution called NetFlow. The traffic analyzer enhances network visibility, security, reliability and resiliency by keeping an eye on network bandwidth, performance, traffic patterns and security alerts.

BCNET has determined that a shared solution will help network engineers across institutions proactively manage network performance and application issues. A Request for Proposals has been issued to vendors and a solution will be recommended in 2012.

THE POWER OF A CONNECTED COMMUNITY

ADVOCATING TECHNOLOGY SOLUTIONS

BCNET builds influential working relationships with individuals from research universities and institutes, industry and government. These organized communities of interest, known as Committees and Working Groups, meet continually to discuss common technology challenges and recommend shared IT solutions.

160
COMMITTEES, WORKING GROUPS AND
PROJECT TEAM MEETINGS LAST YEAR

122
INDIVIDUALS PARTICIPATING IN
COMMITTEES, WORKING GROUPS AND
SPECIAL INTEREST GROUPS

29
PARTICIPATING ORGANIZATIONS, INCLUDING
RESEARCH UNIVERSITIES & INSTITUTES,
GOVERNMENT & INDUSTRY

14
COMMITTEES AND WORKING GROUPS
FOCUSED ON COMMON TECHNOLOGY
CHALLENGES

10
IT PROJECTS

5
SHARED SOLUTIONS DELIVERED



BCNET ADVISORY COMMITTEES & WORKING GROUPS

APPLICATIONS ADVISORY COMMITTEE

Frances Atkinson, SFU
Steve Beaudry, RRU
Hugh Burley, TRU
Gregory Condon, UNBC
Dean Crawford, BCNET
Michael Hrybyk, BCNET
Michael LeBlanc, UBC
Keir Novik, SFU/BCNET
Corey Scholefield, UVic
Paul Stokes, UVic
Mark Zuberbuhler, UBC

COLLABORATION TECHNOLOGIES WORKING GROUP

Frances Atkinson, SFU
Mary Burgess, RRU
Gregory Condon, UNBC
Brian Corrie, SFU
Dean Crawford, BCNET
Andrew Daviel, TRIUMF
Glenn Davies, SFU
Irwin Devries, TRU
Lance Grant, UVic
Michael Hrybyk, BCNET
Valerie Irvine, UVic
Mark Jutras, SFU
Anthony Knezevic, UBC
Paul Livingston, BCIT
Jonn Martell, FDU
James Nattall, ECUAD
Keir Novik, SFU/BCNET
Grant Potter, UNBC
Stan Shaw, Corban Technology Solutions Inc.
Flemming Sorvin, UVic
Todd Zimmerman, UBC
–Okanagan campus
Mark Zuberbuhler, UBC

IDENTITY MANAGEMENT WORKING GROUP

Boaz Av-Ron, ECUAD
Steve Beaudry, RRU
Randy Bruce, BC Campus
Hugh Burley, TRU
Wesley Cole, TRU
Dean Crawford, BCNET
Leo de Sousa, BCIT
Jens Haeusser, Erudio Solutions
Paul Hilchey, UVic
Steve Hillman, SFU
Hari Mailvaganam, UBC
Jeremy Rosenberg, SFU
Garry Sagert, UVic
Corey Scholefield, UVic
Stan Shaw, Corban Technology
Mike Shore, BCIT
Rob Urquhart, SFU
Byron White, UNBC

VOICE OVER INTERNET PROTOCOL WORKING GROUP

Brent Besse, RRU
David Burkholder, TRU
Scott Cambell, UVic
Blair Craft, UNBC
Dean Crawford, BCNET
Karl Hildebrandt, BCIT
Michael Hrybyk, BCNET
Pete Korotash, UNBC
Dave Kubert, UNBC
Michael LeBlanc, UBC
Keir Novik, SFU/BCNET
Maria Torillo, BCIT

RESEARCH ADVISORY COMMITTEE

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Norbert Haunerland, SFU
Marilyn Hay, BCNET
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Michael Hrybyk, BCNET
Rob Inkster, ECUAD
Peter Jackson, UNBC
Martin Kirk, UBC
Tamara Klein, BCNET
Michael Miller, UVic
Donald Noakes, TRU
James Rout, ECUAD
David Schade, Herzberg Institute
Alan Wagner, UBC

ARTS, HUMANITIES, SOCIAL SCIENCES SPECIAL INTEREST GROUP

Doug Buis, TRU
Dean Crawford, BCNET
Henry Daniel, SFU
Michael Filimowicz, SFU
Michael Hrybyk, BCNET
Rob Inkster, ECUAD
Tamara Klein, BCNET
Andrew Kitchenham, UNBC
Ashok Mathur, TRU
James Rout, ECUAD
David Schade, Herzberg Institute
Richard Smith, Centre for Digital Media
Stefan Smulovitz, SFU

NETWORK PLANNING ADVISORY COMMITTEE

Hugh Burley, TRU
Stefan Cioata, BCIT
Lorenzo Constantino, SFU
Mike Edel, Shaw Communications
Jim Ghadbane, CANARIE
Marilyn Hay, UBC/BCNET
Geoffrey Holan, TELUS
Michael Hrybyk, BCNET
Ron Kozsan, UVic
Dave Kubert, UNBC
Douglas Lindner, Juniper Networks
Brian Mackay, TRU
Don McWilliam, BCNET
Parker Moore, BC Hydro
Scott Reynolds, Tellabs Communications Canada
Andree Toonk, BCNET
Sean Wang, UBC

FIBRE INFRASTRUCTURE WORKING GROUP

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Marilyn Hay, UBC/BCNET
Michael Hrybyk, BCNET
Clarence Lee, BCNET
Bob MacDonald, UBC
Parker Moore, BC Hydro
Colin Schmutter, BCIT
Dave Stillwell, UBC/BCNET
Patricia Todd, UVic

SECURITY WORKING GROUP

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Larry Carson, UBC
Wesley Cole, TRU
Marilyn Hay, UBC
Dave Kubert, UNBC
Don McWilliam, UBC/BCNET
Keir Novik, SFU/BCNET
Michael Ryan, UBC
Andy Scott, BCIT
Tom Steeves, UVic
Eric van Wiltenburg, UVic
Toby Wong, UBC/BCNET

NETWORK MANAGEMENT WORKING GROUP

David Burkholder, TRU
Scott Campbell, UVic
Wesley Cole, TRU
Glenn Davies, SFU
Marilyn Hay, UBC/BCNET
Geoffrey Holan, Telus
Jun Jian, CANARIE
Joubin Moshrefzadeh, BCIT
Andree Toonk, BCNET

INTERNET TRANSIT AND PEERING WORKING GROUP

Jean-Francois Amiot, Cybera
Kimberlee Baryluk, University of Sask.
David Burkholder, TRU
Stefan Cioata, BCIT
Wesley Cole, TRU
Al Dunthorne, Brandon University
Art Exner, University of Regina
Michael Gregory, SFU
Marilyn Hay, UBC/BCNET
Ron Kozsan, UVic
Dave Kubert, UNBC
Clarence Lee, BCNET
Gerry Miller, University of Manitoba
Michael Thorson, UBC
Andree Toonk, UBC/BCNET
Sean Wang, UBC

SERVING OUR MEMBERS

BCNET & HPCS CONFERENCE 2012, CONNECT. COMPUTE. COLLABORATE.

BCNET joined forces with Compute Canada and WestGrid to bring together IT leaders at higher education institutions from across Canada, high-profile members of the Canadian and international research communities and experts in high-performance computing for a three-day conference on May 1-3, 2012.

CONFERENCE SUCCESSES

- Forged stronger relationships with community
- Showcased emerging IT solutions for campuses
- Discussed members' IT needs
- Educated community
- Celebrated BCNET's accomplishments

CONFERENCE PROGRAM

- 3 HIGH-PROFILE KEYNOTES
- 57 SESSIONS / 6 TRACKS
- 7 HANDS-ON WORKSHOPS
- 30 INDUSTRY VENDORS

CONFERENCE RESULTS

477 **DELEGATES** including IT management and staff, faculty, students and industry professionals

25% year-over-year **INCREASE** in attendees

92% of survey respondents rated the conference as **EXCELLENT OR GOOD**

85% of survey respondents would **RECOMMEND** the conference to their colleagues

INFORMATION TECHNOLOGY WORKSHOPS, TRAINING & DEMONSTRATIONS

BCNET supports the development of emerging technologies and provides opportunities for learning and collaboration through workshops, demonstrations and technical sessions.

WORKSHOPS

IDENTITY MANAGEMENT

IPV6

IPV6 COMMUNITY LAB

DEMONSTRATIONS OF EMERGING TECHNOLOGIES

- Videoconferencing
- Video repositories
- Creative Commons
- Telepresence
- Massive data collaboration over a production-grade 100-Gigabyte network demonstrated at the 2011 Super Computing Conference in Seattle.
- World IPv6 Day
- Customer Management Database Workshops

OUTREACH

- Enabled demonstrations of Canadian big science projects at Global Science AAAS Conference
- Attended 11 campus and industry events

BOARD OF DIRECTORS

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SECRETARY/TREASURER

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PAUL STOKES | CIO | University of Victoria

YVETTE WELLS | Associate Partner, Financial Services | IBM Canada

ALIGNING WITH INDUSTRY AND GOVERNMENT

BCNET PARTNERS WITH LEADING HIGH-TECHNOLOGY AND TELECOMMUNICATIONS ORGANIZATIONS

PLATNUM



GOLD



SILVER



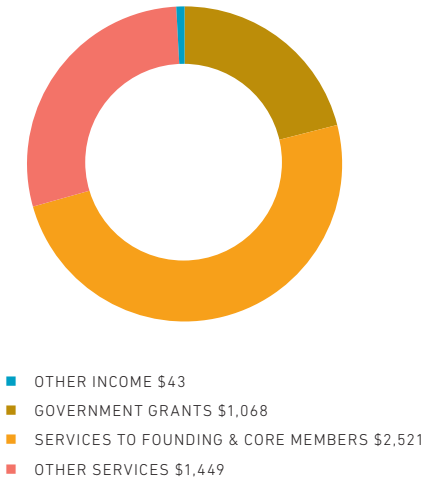
BCNET FINANCIAL OVERVIEW

BCNET generated a small surplus of \$16,000 on revenues of \$5 million in the year ended March 31, 2012. BCNET has a healthy balance sheet, with approximately \$1 million in net cash and investments reserved for capital expenditures, over the next few years.

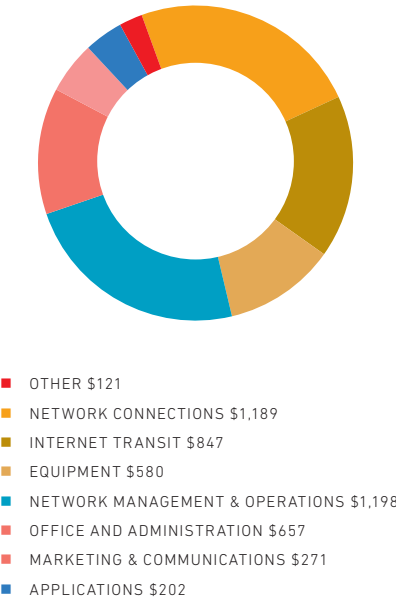
During the year, BCNET continued to invest in the network, spending \$2.5 million on fibre and associated network equipment. The fibre optic network currently has an investment of approximately \$14 million, of which 50 per cent has been funded by federal and provincial grants.

The primary users of BCNET's Advanced Network and services are its founding and core members, who provide BCNET with 50 per cent of its revenues. The network continues to consume most of BCNET's resources, with 60 per cent of expenditures allocated to network connections, management and equipment. Office, management staff and administrative costs are 13 per cent of total expenses.

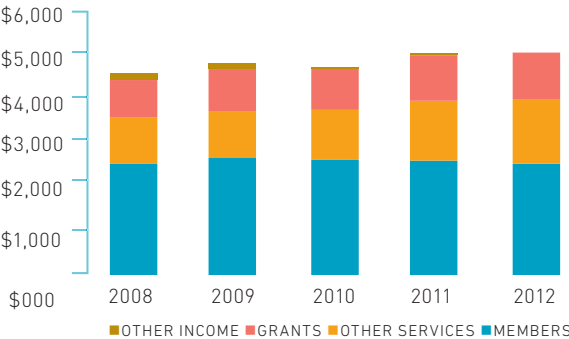
2012 REVENUES (\$000's)



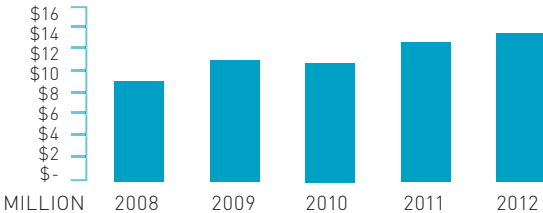
2012 EXPENDITURES (\$000's)



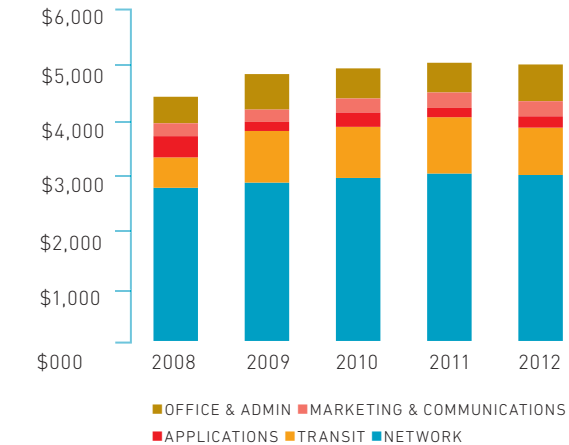
REVENUE TRENDS



CAPITAL INVESTMENT



EXPENDITURE TRENDS



44 Management Responsibility for Financial Reporting

45 Independent Auditor's Report

BCNET FINANCIAL STATEMENTS

46 Operations

47 Changes in Net Assets

48 Cash Flows

49 Financial Position

50 Summary of Significant Accounting Policies

52 Notes to Financial Statements

55 Schedule: Expenses

Management's Responsibility for Financial Reporting

The financial statements and the information contained in the annual report are the responsibility of the management of BCNET. The financial statements have been prepared in accordance with Canadian accounting standards for not-for-profit organizations.


The financial statements include, where appropriate, estimates based on the best judgment of management. Financial and operating data elsewhere in the annual report is consistent with that contained in the accompanying financial statements.

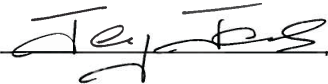
As part of its responsibilities, BCNET maintains systems of internal accounting and administrative controls of high quality, consistent with reasonable cost. Such systems are designed to provide reasonable assurance that the financial information is relevant, reliable and accurate, and that BCNET's assets are appropriately accounted for and adequately safeguarded.

The Board of BCNET carries out its responsibilities with regard to the financial statements mainly through its Audit Committee (the "Committee"). The Committee reviews the annual financial statements and other information contained in the annual report and recommends them to the Board for approval. The Committee meets periodically with management and external auditors. Following these meetings, the Committee meets privately with the auditors to ensure free and open discussion of any subject the Committee or the auditors wish to pursue. The Committee also recommends the engagement or re-appointment of the external auditors, review of scope of audit and approves the fees of the external auditors for audit and non-audit services.

The financial statements, audited by BDO Canada LLP, have been approved by the Board, on the recommendation of the Audit Committee.

Signed by:

 Board Chair

 Chief Financial Officer

Date: June 21, 2012



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BDO Canada LLP
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Independent Auditor's Report

To the Members of
BCNET

We have audited the accompanying financial statements of BCNET, which comprise the Statement of Financial Position as at March 31, 2012, and the Statements of Operations, Changes in Net Assets and Cash Flows for the year then ended and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of BCNET as at March 31, 2012 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.



Chartered Accountants

Vancouver, British Columbia
June 21, 2012

BDO Canada LLP, a Canadian limited liability partnership, is a member of BDO International Limited, a UK company limited by guarantee, and forms part of the international BDO network of independent member firms.

BCNET

STATEMENT OF OPERATIONS
FOR THE YEAR ENDED MARCH 31

	2012	2011
REVENUES		
Local metro circuits	\$ 1,852,220	\$1,780,200
Transit	1,121,601	1,175,374
Grant revenue	1,068, 204	1,033,696
Transit exchange	879,985	877,700
Partner and sponsor revenue	50,000	50,000
Interest revenue	32,060	29,562
Installations	66,660	64,000
Eduroam Fees	10,800	10,800
	5,081,530	5,021,332
EXPENSES (SCHEDULE)		
Cost of services	2,063,268	2,224,790
Staffing	1,441,772	1,374,001
Equipment and software	1,012,024	1,051,950
Operating expenses	548,114	324,052
	5,065,178	4,974,793
Excess of revenues over expenses for the year	\$ 16,352	\$ 46,539

BCNET



STATEMENT OF CHANGES IN NET ASSETS
FOR THE YEAR ENDED MARCH 31

	CAPITAL ASSETS NOT FUNDED BY GRANTS	INTERNALLY RESTRICTED	UNRESTRICTED	2012	TOTAL 2011
	(NOTE 6)	(NOTE 7)			
Net assets, beginning of year	\$ 2,268,052	\$ 932,675	\$ 99,617	\$ 3,300,344	\$ 3,253,805
Excess (deficiency) of revenues over expenses for the year	(919,835)	—	936,187	16,352	46,539
Acquisition of capital assets	1,106,856	—	(1,106,856)	—	—
Net assets, end of year	\$ 2,455,073	\$ 932,675	\$ (71,052)	\$ 3,316,696	\$ 3,300,344

STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED MARCH 31

	2012	2011
Cash provided by (used in)		
OPERATING ACTIVITIES		
Cash received from clients	\$ 3,533,488	\$ 4,257,937
Cash paid for transit and local loop	(1,176,977)	(1,441,582)
Cash paid for hardware and software maintenance	(557,908)	(373,854)
Cash paid for staffing	(1,557,226)	(1,611,029)
Cash paid for operation	(457,556)	(289,506)
Cash received from sponsors	72,060	47,650
Interest received	(8,287)	41,088
	(152,406)	630,704
FINANCING ACTIVITIES		
Cash received from grants	1,676,045	1,575,000
Loan repayment	(125,284)	(125,284)
	1,550,761	1,449,716
INVESTING ACTIVITIES		
Purchase of fibre	(1,289,671)	(1,935,603)
Purchase of capital equipment	(1,162,581)	(328,115)
	(2,452,252)	(2,263,718)
Cash and cash equivalents movement for the year	(1,053,897)	(183,298)
Cash and cash equivalents, beginning of year	2,621,121	2,804,419
Cash and cash equivalents, end of year	\$ 1,567,224	\$ 2,621,121
Cash and cash equivalents consist of:		
Cash in bank	\$ 155,041	\$ 615,815
Temporary investments	1,412,183	2,005,306
	\$ 1,567,224	\$ 2,621,121

STATEMENT OF FINANCIAL POSITION
MARCH 31

	2012	2011
Assets		
CURRENT		
Cash and cash equivalents	\$ 1,567,224	\$ 2,621,121
Accounts receivable	602,487	130,104
Prepaid expenses	389,518	350,887
Current portion of prepaid deposit on fibre (Note 2)	55,890	44,821
	2,615,119	3,146,933
Capital assets (Note 1)	6,328,404	5,474,269
Prepaid deposit on fibre (Note 2)	229,099	78,368
	\$ 9,172,622	\$ 8,699,570
Liabilities and Net Assets		
CURRENT		
Accounts payable and accrued liabilities	\$ 99,371	\$ 264,313
Current portion of longterm debt (Note 3)	92,783	88,745
	192,154	353,058
Long-term debt (Note 3)	652,403	745,186
Deferred grants (Note 4)	4,644,121	3,961,786
Deferred revenues (Note 5)	367,248	339,196
	5,855,926	5,399,226
Net assets	3,316,696	3,300,344
	\$ 9,172,622	\$ 8,699,570
Related party transaction (Note 8)		
Commitments (Note 9)		
		Director
		Director

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

MARCH 31, 2012

BCNET’s purpose is to provide networking services to the research and education community in British Columbia and to facilitate the evolution of the internet in British Columbia.

BCNET Networking Society was incorporated under the British Columbia Society Act on July 31, 1995 as a not-for-profit organization. On September 25, 2005, BCNET (the “Corporation”) was federally incorporated under the Canada Corporations Act and acquired all the assets and liabilities of its predecessor organization BCNET Networking Society as of April 1, 2006.

The accounting policies of the Corporation are in accordance with Canadian generally accepted accounting principles applied on a basis consistent with that of the preceding year. Outlined below are those policies considered particularly significant.

CASH AND CASH EQUIVALENTS

Cash and cash equivalents are comprised of the amounts held in the Corporation’s bank accounts and mutual funds.

CAPITAL ASSETS AND AMORTIZATION

Capital assets are recorded at cost. Amortization for general capital assets is provided annually on a straight-line basis using a three-year useful life. Fibre is amortized over a period of ten years. Capital assets not in service are not amortized.

PREPAID DEPOSIT ON FIBRE

Prepaid deposit on fibre is amortized over the term of the service.

REVENUE RECOGNITION

Revenue from the provision of services is recorded upon completion of performance. Performance is considered complete upon service being provided.

The Corporation follows the deferral method of accounting for revenues and grants. Restricted funds are recognized as revenue in the year in which related expenses are incurred. Unrestricted revenues and grants are recognized as revenue when received or receivable.

Deferred grants for capital acquisitions are recognized as revenue on the same basis as the acquired assets are amortized.

“Transit” is the Internet traffic purchased by BCNET from Internet providers on behalf of its clients.

“Local Metro Circuits” is the dedicated circuits between BCNET clients and the transit exchanges over which network services are delivered.

CAPITAL DISCLOSURE

The Corporation’s objectives when managing capital are to continue as a going concern to protect its ability to meet its ongoing liabilities. Protecting the

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

MARCH 31, 2012 (CONTINUED)

ability to pay current and future liabilities includes maintaining capital to ensure the Corporation meets its obligations to its members and associates, and following internally determined capital guidelines based on risk management policies.

USE OF ESTIMATES

Estimates by management represent an integral component of financial statements prepared in conformity with Canadian generally accepted accounting principles. The estimates made in these financial statements reflect management’s judgements based on past experiences, present conditions, and expectations of future events. Where estimates were made, the reported amounts from the assets, liabilities, revenues and expenses may differ from the amounts that would otherwise be reflected if the ultimate outcome of all uncertainties and future events were known at the time these financial statements were prepared.

FINANCIAL INSTRUMENTS

The financial instruments of the Corporation consist of cash and cash equivalents, accounts receivables, accounts payable and accrued liabilities, and long-term debt. Unless otherwise noted, it is management’s opinion that the Corporation is not exposed to significant currency or credit risks arising from these financial instruments. The fair value of the instruments approximates their carrying values unless otherwise noted.

RISK MANAGEMENT

Credit Risk: The Corporation is exposed to credit risk from their customers. The Corporation performs credit risk evaluation on its customers and consider their risk to be acceptable and appropriately managed.

FUTURE DIRECTION OF STANDARDS FOR NOT-FOR-PROFIT ORGANIZATIONS

The Accounting Standards Board has issued the accounting and financial reporting requirements for NPOs in Part III of the CICA Handbook. The standards to be followed are essentially the relevant standards from Part II for private enterprises plus NPO-only standards in Part III which includes the current Section 4400 series of standards with minor modifications. The CICA has stated that any NPO could elect to follow IFRS if they should so desire. These requirements become effective for the Corporation for the fiscal year beginning April 1, 2012 and the impact on the financial statements is currently being evaluated.

NOTES TO FINANCIAL STATEMENTS
MARCH 31, 2012

1. CAPITAL ASSETS

	COST	ACCUMULATED AMORTIZATION	2012 NET BOOK VALUE	2011 NET BOOK VALUE
Capital Assets:				
General Components	\$ 2,890,025	\$ 1,744,189	\$ 1,145,836	\$ 597,043
Fibre	10,730,211	5,547,643	5,182,568	4,877,226
	<u>\$ 13,620,236</u>	<u>\$ 7,291,832</u>	<u>\$ 6,328,404</u>	<u>\$ 5,474,269</u>

“Fibre” refers to certain dark fibre circuits connecting member organizations that have been purchased or acquired through Indefeasible Right of Use (IRU) and lease agreements.

As of March 31, 2012, the Corporation has capitalized \$2,584,560 of Fibre costs related to the Saanich Project. The project was not fully completed as of March 31, 2012 and therefore no amortization was taken during the year.

2. PREPAID DEPOSIT ON FIBRE

The Corporation entered into fibre agreements for periods of between ten and twenty years for the use of IRU Fibres to service its members. The Corporation is amortizing these costs over the term of the agreements.

3. LONG-TERM DEBT

	2012	2011
Loan advanced from University of Victoria repayable in semi-annual installments of \$62,642 including interest of 4.5% per annum, maturing March 31, 2019 with a provision to pay down without penalty	\$ 745,186	\$ 833,931
Less current portion	92,783	88,745
	<u>\$ 652,403</u>	<u>\$ 745,186</u>

The aggregate amount of principal payments required in each of the next five years on this indebtedness is as follows:

YEAR	AMOUNT
2013	\$ 92,783
2014	\$ 97,005
2015	\$ 101,420
2016	\$ 106,035
2017	\$ 110,860

NOTES TO FINANCIAL STATEMENTS
MARCH 31, 2012 (CONTINUED)

4. DEFERRED GRANTS

	2012	2011
CANARIE	\$ 2,080,590	\$ 1,068,109
Ministry of Advanced Education	2,563,531	2,893,677
	<u>\$ 4,644,121</u>	<u>\$ 3,961,786</u>

The deferred grants are restricted for the development and support of the Optical Regional Advanced Network.

5. DEFERRED REVENUES

	2012	2011
CANARIE	\$ 156,570	\$ 187,750
Other	210,678	151,446
	<u>\$ 367,248</u>	<u>\$ 339,196</u>

These funds are restricted for specific purposes and will be amortized into income as expenses are incurred.

NOTES TO FINANCIAL STATEMENTS
MARCH 31, 2012 (CONTINUED)

6. CAPITAL ASSETS NOT FUNDED BY GRANTS

The Corporation’s investment in capital assets is funded either through grants received from CANARIE and from the Ministry of Advanced Education, or internally from revenues generated by the Corporation. The unamortised balance of those assets that are funded internally is segregated to reflect the funds committed to cover their future amortization expense.

7. INTERNALLY RESTRICTED NET ASSETS

On March 31, 2007, an allocation of \$1,000,000 was made to be used for risk contingency and future network enhancements. To date, \$67,325 of the internally restricted funds have been used to develop the Disaster Recovery Plan.

8. RELATED PARTY TRANSACTIONS

During the year, the Corporation entered into the following transactions with its members:

Service revenue in the amount of \$4,428,250 (2011—\$3,931,818) was received in the normal course of operations. The Corporation also paid management fees, networking fees, rent and meeting costs to member associations in the amount of \$1,037,620 (2011—\$1,161,495).

As at March 31, 2012, the Corporation had receivables from its members totaling \$113,849 (2011—\$29,276) included in accounts receivable.

As at March 31, 2012, the Corporation had payables from its members totaling \$21,882 (2011—\$106,201) included in accounts payable.

The Corporation acquired capital assets from members totaling \$331,816 (2011—\$nil).

On April 1, 2009 the Corporation received a term loan from a member. In the current year term loan principle and interest payments totaling \$125,284 (2011—\$125,284) were made to a member.

These transactions are in the normal course of operations and are measured at the fair market value established and agreed to by the related parties.

9. COMMITMENTS

The Corporation has operating lease obligations totaling \$926,141 that extend to September 2029.

The annual payments due for the next five years are as follows:

2013	\$ 432,450
2014	\$ 104,688
2015	\$ 89,558
2016	\$ 69,023
2017	\$ 46,211

SCHEDULE—EXPENSES
FOR THE YEAR ENDED MARCH 31

	2012	2011
COST OF SERVICES		
Circuit costs	\$ 1,026,600	\$ 993,311
Inter-city connections	171,779	224,249
Transit	846,643	1,007,160
IT Projects	18,246	70
	2,063,268	2,224,790
STAFFING		
Administration	74,216	70,195
Client services	157,636	146,526
Consulting	40,191	38,123
Co-op students	44,597	45,319
Green IT	37,950	46,882
IT and applications support	145,536	119,448
Management	184,332	183,455
Technical services	757,314	724,053
	1,441,772	1,374,001
EQUIPMENT AND SOFTWARE		
Amortization	606,882	719,820
Repairs and maintenance	405,142	332,130
	1,012,024	1,051,950
OPERATING EXPENSES		
Audit	16,305	11,000
Bad debts	30,263	361
Communications	113,049	129,119
Insurance	28,200	27,783
Interest	121,039	—
Legal fees	112,522	20,944
Miscellaneous	7,958	5,350
Office	22,833	31,420
Rent	46,941	45,574
Travel and meetings	49,004	52,501
	\$ 548,114	\$ 324,052



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