

5. Ensure the long-term sustainability of the CLS as a national facility

The CLS must be responsive and accountable to a number of constituencies in order to ensure its long-term viability and sustainability.

These include:

- Industry: to encourage collaborative research using the CLS that leads to the commercialization of knowledge in support of Canada's economy;
- Government at the Federal and Provincial levels: to provide on-going funding support and meet regulatory requirements;
- Academia: as Canada's national synchrotron research facility, CLS must foster the support of Canada's academic institutions and encourage its use by their researchers;
- The international scientific community: to demonstrate that research conducted at the CLS is world-class;
- Public:
 - Provide a foundation for broad political support and foster a sense of ownership in Canada's synchrotron;
 - Increase awareness of the impacts of synchrotron science on the economy and everyday life;
 - Encourage youth to pursue scientific careers and contribute to the development of the next generation of highly qualified people; and
 - Foster science literacy.

5.1 Conduct targeted industry and government relations activities to attract investment and secure a stable funding strategy

Positive engagement with all levels of government and industrial entities, as customers as well as investors, is essential to the continued growth and successful operation of CLS. Already, three major corporations, Boehringer Ingelheim, Rockwell Collins Canada, and SaskPower have invested in CLS infrastructure. Continued successful investment outcomes by industry, government and funding agencies depends upon a long-term effort to effectively convey the valuable impact that science produced by CLS and its users has, and will continue to have, on Canadian society. In addition, developing effective processes to track the societal and economic impact of CLS research will add to the effectiveness of these communications.

There is not a clear policy regarding the funding of large national facilities in Canada. Since its inception, CLS has had to engage a number of programs, agencies and governmental departments in an effort to obtain required funding. The overall operating budget is too large for any one agency to fund within their existing budget. It is also clear that the mandate of granting councils such as NSERC, CIHR and government agencies such as Western Diversification, do not contemplate the nature of expenditures

that must be incurred to operate a large research facility like the CLS, which results in the need to seek additional partners to commit operating funding.

CLS and the University of Saskatchewan (U of S) have continuously worked to engage various stakeholders since its starting operations in 2004, in order to obtain commitments toward some portion of the operating costs of the facility. Commitments have been made from a number of different institutions and government programs (NSERC, CIHR, NRC, CFI, WD, and the U of S). In addition, CLS continues to aggressively pursue fee-for-service revenue from industry that will supplement operations (\$10M over the 5 year period).

CLS will continue to utilize various programs and agencies to obtain funding for specific aspects of operations. However, these methods do not allow for the kind of the long-term stability necessary to successfully operate a national research facility. In parallel with efforts made by the University of Saskatchewan, other universities and the Association of Universities and Colleges of Canada (AUCC), CLS will continue to call attention to the need to develop a framework for funding of large science infrastructures in Canada. It is necessary to engage both the political and bureaucratic sections of government, to build strong support in industry, and to actively solicit the support of all levels of government.

1. Engage federal and provincial science and technology departments and programs to leverage support for a stable funding strategy for major science facilities.

Deliverables/Milestones:

- Develop a strategic plan for renewed funding (2011)
- Provide input to the Science Technology Innovation Committee (STIC) related to the funding of large national facilities
- Submit proposals to existing programs to provide funding for CLS programs and projects (where appropriate)
- Target key government departments related to CLS missions
- Establish relationships and work with key federal departments including NRC, NSERC, Industry Canada, WED, CIHR and NRCan to support CLS activities
- Build strategic ties with Foreign Affairs and International Trade Canada (DFAIT), Saskatchewan Trade and Export Partnership, U of S, Innovation Place, NRC's Industrial Research Assistance Program (IRAP) and other local stakeholders

2. Build political momentum.

CLS is well-positioned with respect to the federal government's overall science and technology strategy, as well as various provincial governments' innovation strategies. For example, as a multi-disciplinary national facility, CLS meets all of the government's key focus areas for research: health, environment, energy and natural resources, and information technology.

Political support is crucial to make progress on obtaining a stable platform for funding. This requires a continual and coherent approach to relations with federal and provincial members of government to increase awareness and secure support for future funding of the CLS.

Deliverables/Milestones:

- Develop a plan and supportive briefing materials for meetings with Federal and Provincial Governments, senior officials and ministers (2010)
- Continue communication with local MPs and MLA's regarding CLS achievements and strategies
- Ensure that local MPs and MLAs visit CLS and understand the relevance between CLS activities and government priorities
- Increase CLS' profile with provincial governments via strengthened relations with stakeholder universities
- Work with key government officials at municipal, provincial and federal levels to broaden support for CLS
- Engage the user community in key initiatives

3. Engage granting councils, NRC and Industry Canada.

Since NSERC, CIHR and NRC are presently funding partners, it is important to develop and sustain good working relations with them. CLS has worked closely with the granting councils on fiscal matters as well as scientific program development and user issues. The granting councils have a vested interest in the success of the CLS since many of their research grants are awarded to researchers doing synchrotron research. Typical grants are administered in a manner that does not contemplate major science facility operations. This has required the redefinition of eligible expenditures with reference to facility 'state of readiness' which has been critical in enabling CLS to incur the expenditures necessary for operations.

Deliverables/Milestones:

- Invite granting councils to meetings of the Science Advisory Committee and Machine Advisory Committee to ensure that they are kept informed of facility status and plans
- Arrange regular meetings (annually) with senior program and executive members to ensure continual reporting of activities of relevance to council mandates
- Arrange for midterm review to report on scientific return on investment

4. Seek support from Industry.

Success in funding CLS operations will depend significantly on demonstration of the importance of the facility to industry and its role in commercialization and transfer of knowledge to the private sector, in addition to meeting fee-for-service revenue targets.

To demonstrate the support of industry for CLS, a group of prominent leaders from the Canadian industrial sector have been recruited into a group designated as "Partnership Canada". Comprised of 12-15 senior executives of major corporations, this group will act on behalf of the CLS in interfacing with the government and providing strategic advice.

Deliverables/Milestones:

- Engage 'Partnership Canada' participants in key initiatives
- Engage key industrial partners in collaborative research projects
- Meet with industry leaders and researchers to identify collaborative and fee-for-service opportunities in the areas of environment, life sciences, nanotechnology
- Attract at least 6 large companies and 6 subject matter experts to do research and development work at CLS (beginning in 2010, with Research Directors)
- Increase networking opportunities with key stakeholder audiences
- Solicit advice and guidance from the BDAC as well as key officials from Government to enhance the development of industry partnerships and usage
- Establish "SWAT Teams" (Executive Director, Research Directors, Chief Financial Officer, Business Development) to identify and pursue opportunities in target sectors and localities, such as Minnesota's 'Medical Alley' and the . Kansas City animal health corridor
- Develop a customer referral database

5. Attract international collaborations to demonstrate excellence of the programs and economic impact.

To enhance the profile of CLS and its importance to Canada as a science and technology player on the international stage, CLS actively collaborates with synchrotron facilities and universities in other countries. CLS has formal memoranda of understanding with seven synchrotrons in five countries. These arrangements foster the development of new and innovative facility components as well as academic and industrial projects of interest to all parties. In addition, CLS has signed an MOU with the government of India to explore the provision of funds for future experimental facilities development in areas of mutual interest to the CLS and the Indian scientific community.

An active CLS Scientific Advisory Committee (SAC) with prominent scientists from around the world provides valuable expertise to keep the technologies and scientific programs state-of-the-art. In turn, CLS staff members are members of several international advisory committees, including the National Synchrotron Light Source (NSLS) in New York, the ALBA Synchrotron Light Facility in Spain and the Shanghai Synchrotron Radiation Facility in China.

Deliverables/Milestones:

- Proceed with collaboration with Brazil regarding Brockhouse project
- Proceed with collaboration with Stanford Synchrotron Radiation Lightsource regarding BioXAS project

6. Promote the value and societal impacts of synchrotron R&D.

Promoting the importance of synchrotron-based research to the advancement of science, industrial innovation and the improvement to people's quality of life is vital to demonstrating the relevance of the CLS to government, users, industry, funders and the public at large. The CLS must celebrate the successes of its users and staff, both through its own products and through international collaborations such as *lightsources.org* that promote the value of research using synchrotron light sources and other large science facilities.

Deliverables/Milestones:

- Sponsor and participate in scientific conferences, trade shows and events targeting potential customer and user audiences
- Produce Science Highlights and media releases of exciting and significant research findings
- Produce *InnoVision* and other targeted newsletters
- Produce public tour displays
- Working with CFO and Director Industrial Science, develop informational approaches to quantify industrial-relevant research at CLS
- Create informational resources and products to support CLS in articulating its economic and industrial relevance to Canadian Governments

5.2 Develop strategic educational initiatives to engage the public

The science and technology sector is the fastest growing part of Canada's economy and accounts for 35% of the nation's jobs. Providing opportunities that foster the education and training of highly qualified people is one of the missions of the CLS and vital to the continued growth of Canada's knowledge economy. Developing engagement initiatives for the education community and the general public that connect them with the research conducted at the CLS creates a base for long-term support and understanding of the valuable impact that science produced by CLS and its users has, and will continue to have, on Canadian society.

1. Promote involvement of educators and researchers as well as government and community agencies in support of CLS educational initiatives.

Deliverables/Milestones:

- Attend and present at 3 or 4 educational, scientific, and government conferences and events annually
- Develop avenues for financial support for educational initiatives to supplement CLS contributions (PromoScience application September 2010 – 2013; formal partnerships with school divisions, government, community, and educational agencies as opportunities arise)

- Recruit and develop champions for CLS educational initiatives within targeted regions of Canada through connections with national associations (Canada Museum of Science & Technology, Council of Science Educators of Canada, Canada Wide Science Fair, etc)
2. Participate in the development of the IDEAS (Industry/Education) beamline so that it supports education initiatives such as Students on the Beamlines, Summer School, undergraduate and graduate student training, Science on Stage Canada, and other teacher training opportunities.
 3. Manage national programs to engage high school students across Canada

Deliverables/Milestones:

 - Students on the Beamlines program (5-8 student projects developed annually in collaboration with Beamline Scientists, with additional projects to be conducted in collaboration with Industry Staff on the IDEAS beamline once it is constructed and commissioned (2012)
 - Curriculum-connected video conferencing program offered for education audiences (2011) and streamed via the Internet for others to observe (2012)
 - Sponsor and participate in targeted educational conferences and activities such as National Science Fairs, SK Science Centre, etc.
 - Develop work experience programs beginning with students from the immediate area (2010) but expanding to allow national participation (2012 – requires funding)
 4. Develop and deliver annual training programs to educators to solicit participation of their students' in CLS activities

Deliverables/Milestones:

 - In-service training to science educators, through conferences, workshops and conventions (2 or 3 annually)
 - Synchrotron science classroom resources revised and updated bi-annually with an annual distribution of 500
 - Engage ministries of education, professional associations and pre-service colleges
 - Maintain leading role in supporting national science education community through development of Science on Stage Canada (CLS hosts 2010 & 2012 and will maintain a continuing connection through the organizing committee) and annual Teachers' summer workshop

5. Provide tours and presentations to multiple audiences on and off-site.

Deliverables/Milestones:

- Recruit and train university undergrad and graduate students to assist in the delivery of tours, presentations, and other CLS activities
- Maintain a balance between requests and impact on the facility
- Maintain statistical information to document activity and audiences

5.3 Conduct strategic integrated marketing and communications.

The effective and coordinated use of communications, public relations and marketing activities and products, in a variety of media and to a variety of audiences, is essential to promote and generate awareness of the CLS. This includes telling the success stories of Canada's synchrotron, its users and clients; as well as promoting positive relationships with internal and external stakeholders, the media and the public. The CLS is recognized by its peer facilities for the professional and innovative nature of its strategic marketing and communications activities.

1. Manage and conduct crisis communications.

Effective crisis communications and issues management is important to maintain employee, stakeholder and public confidence in the CLS and ensure that CLS communications are prompt, accurate and fair.

Deliverables/Milestones:

- Implement crisis communications plan
- Generate detailed issue-specific communications management plans and response lines as required

2. Plan and conduct successful events (workshops; press conferences, etc).

The CLS is often the centre piece of high profile events, ranging from international conferences and workshops to press conferences and visits by dignitaries.

Deliverables/Milestones:

- Effective coordination between stakeholders
- Logistical coordination
- Speechwriting
- Promotional plans and advertising

3. Develop and implement a strategic branding plan.

The CLS will continue to convey a uniform brand image in support of positioning the facility as a national scientific asset.

Deliverables/Milestones:

- Audience survey to assess branding effectiveness
- Standardized marketing materials
- Visual Identity guidelines
- Website development
- Explore developing bilingual promotional materials for Quebec audiences

4. Conduct media relations to publicize CLS successes and achievements.

The primary conduit for communicating the successes of the CLS and its users is through the media, with an average of 1 million people reading, watching or listening to news about the CLS and the research performed here each month (see Appendix I). Media relations involves not only talking with reporters, but also building relationships with them and working with CLS staff to cultivate their ability to effectively communicate through the media.

Deliverables/Milestones:

- Media training for management and staff
- news releases, media backgrounders and science highlights
- interview and photo opportunities
- media pitches to media contacts

5. Produce informational/marketing products targeted to public, academia, and industry.

Deliverables/Milestones:

- Brochures
- Corporate Annual Report
- Monthly E-Newsletter
- Annual Activity Report
- Classroom Resources
- Tours posters
- InnoVision
- Explore utilizing emerging social networks like Facebook and Twitter

6. Conduct internal communications to inform and involve staff in achieving CLS objectives.

Deliverables/Milestones:

- In the Loop staff newspaper
- Science Highlights
- Facility-wide inclusion in career-focused educational activities
- Advice on specific management-staff communications issues
- Informational sessions on commercialization of research and working with industry

7. Manage Website promoting all CLS services and activities.

Deliverables/Milestones:

- providing access to CLS resources for users, media, educators, students and the general public
- inform and celebrate successes to all stakeholder groups
- coordinate team of website administrators
- ensure consistent messaging throughout

5.4 Develop and implement a fundraising and stakeholder relations strategy

The future development of the CLS depends on building and maintaining effective relationships with current and prospective stakeholders. This includes fostering financial and resource support for capital projects and sustaining ongoing support for operations funding and reform by recognizing the contributions of our many partners.

1. Engage current and new stakeholders with creative opportunities to solicit new funding for capital projects

Deliverables/Milestones:

- BMIT Facility goal = \$5M
- Other projects tied to strategic plan
- Improved communications mechanisms with funders
- Establish CEO fundraising strategies development advisory committee

2. Develop Donor/Funder Recognition

Identify a process for gift acknowledgement and receipting, recognizing the donor/funder within the CLS community, and identification of stewardship of funders throughout the period of time after the gift/transaction so that there may be opportunity for a second solicitation for their next funding cycle.

Deliverables/Milestones:

- Develop and design a 'donor recognition wall' at the CLS facility
- Update the donor banners
- Publicity considerations
- Conventions regarding naming of CLS facilities, beamlines, etc.

3. Consider the option of creating a Foundation.

Deliverables/Milestones:

- In accordance with other strategic plans, develop overall strategies for fundraising activities at the CLS. Consider the pros and cons of a CLS Foundation.

5.5 Establish an enterprise risk management system

CLS has identified a number of strategic, enterprise-level, risks within the University of Saskatchewan enterprise risk management (ERM) process and risk register. The risk management model and process utilized in the U of S ERM program is based on the AU/NZ 4360:2004 *Risk Management Guideline*, which was in turn used as a basis for the new ISO 31000 *Risk Management Guideline* (2009).

Certain elements of a comprehensive risk management system are in place as they are required for safe and reliable operation of the facility. For example, Health, Safety and Environment policies and procedures, a document control system and a quality assurance program are well developed and implemented at the CLS. Its governance and management systems are in place to ensure control over strategic and financial risks to the organization.

However, it is necessary to ensure that these risks are evaluated with reference to the overall strategic plans of the CLS. Consideration of interdependencies and mitigation strategies need to be documented to enable regular review and evaluation by management and the Board of Directors. Over the coming year, CLS will use the existing ERM process included in the U of S plan to develop a more detailed risk register for CLS. To ensure that the plan is comprehensive and well documented, services of the University of Saskatchewan consultant will be utilized to identify the ERM framework and implementation plan.

1. Develop and document a detailed risk register and mitigation strategies.

Deliverables/Milestones:

- Identify key risks that could have a significant impact on the ability of CLS to achieve its objectives.
- Define the underlying risk drivers, including financial, operational, compliance, reputational and strategic risks.
- Assess the probability that a given event will occur and consider the impact of the potential risk.

- Identify the risk management strategy to mitigate each potential risk:
- Identify the points of reliance within the organization that are in place that may change that probability.
- Identify actions required and accountabilities.
- Develop priority ratings that will enable risks to be assessed and prioritized in terms of importance to the success of the CLS to meet its strategic goals (financial and non-financial).
- Conduct ongoing reviews and evaluation of the risk management system.