A Strategy for the

Expansion of Flexible Learning in the Trades in British Columbia

Business Plan

A report prepared on behalf of the Ad Hoc Flexible Learning in the Trades steering committee

Commissioned by the Industry Training Authority of B.C.

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Vancouver Community College

ita industry training authority

The following members served on the Ad Hoc Flexible Learning in the Trades Steering Committee:

- o Randy Bruce, Director - Operations, BCcampus
- o Alan Davis, Vice-President Education, Vancouver Community College (Chair)
- o John English, Dean School of Construction and the Environment, British Columbia Institute of Technology
- o Ralph Finch, Dean Trades and Technology Division, Thompson Rivers University
- o Lynn Jacques, Vice-President Academic and Director Institute for Teaching and Learning, College of New Caledonia
- o Jan Jonker (alternative), Dean Trades Division, College of New Caledonia
- o Bill Parker, Manager Regional Institutions Unit, AVED
- o Geoff Stevens, Vice President Industry Relations, Industry Training Authority
- o Kate Tognotti, Instructional Dean, Selkirk College
- o Randy Werger, Associate Dean, Trades and Apprenticeship, Okanagan College
- o Debbie Yule, Director Industry Training, go2HR

Hans van der Slagt (Hans van der Slagt & Associates Consulting Services) acted as the lead consultant on the project. Dr. Tony Bates (Tony Bates Associates Limited), an internationally recognized consultant in the field of flexible learning, provided valuable expertise and advice in the development of the Business Plan.

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EXECUTIVE SUMMARY

This Business Plan flows out of a decision by the Board of the Industry Training Authority to request the development of a Strategy to provide alternative modes of delivery for trades training (generally referred to, in this document, as Flexible Learning (FL) with the intent of increasing access for trainees and improving their success and completion rates. A Strategy was developed (accessible on the web at www.itabc.ca) and approved by the Board in September 2007, followed by a request to develop a Business Plan to move the project forward.

Over 34,000 apprentices were registered in BC in 2007 in 130 programs. The 15 trades with the highest level of enrolment account for 77% of BC's registered trainees. Forty-two percent of BC's apprentices complete their programs. While most technical (in-school) apprenticeship training is delivered in a face-to-face mode, some colleges have developed high quality flexible learning materials. However, funding has been sporadic and the development of flexible learning materials has been driven more by individual teacher and institutional initiative than by a strategic, provincial focus.

Research has demonstrated that many parts of the world have undertaken extensive development of flexible learning in the trades with some of the leaders including Australia, United Kingdom and many parts of Europe. Recently, new technologies have helped to make flexible learning materials more interesting for students as well as more effective as learning modes. Moreover, employers expect their employees to be ready and able to learn new material and technologies in a flexible learning mode.

In particular, the challenges facing trades trainees and employers in BC include: limited access to training in remote areas; limited flexibility for students to pursue training in other than a face-to-face mode; a tight labour market leaving little free time for training; limited opportunities for students at the high school level, ACE-IT programs and for trainees in remote locations to complete their training.

The Strategic Plan report (completed as a separate study) recommendations include:
- o A Province-wide strategy to expand flexible learning
- o A collaborative approach through a "Virtual Network" organization involving ITO's/employers, development/delivery institutions and teachers
- o Elimination of barriers to alternative modes of training for trainees
- o Development of and adherence to Provincial standards
- o Use of a Business Plan approach including a full assessment of revenues and costs

Goals for the expansion of flexible learning include: increasing the percentage of apprentices who complete their programs, increasing trainee and employer satisfaction rates, attracting more people into the trades; reducing barriers for

EXECUTIVE SUMMARY, continued

trainees and employers including financial hardships. The Business Plan identifies a number of specific objectives over a five-year time span.
A number of options for the organization of the Virtual Network (VN) were proposed and analyzed as part of the Strategic Plan. Factors influencing the selection of the best option include the need for a fast start, the desire to build on resources already available in the community and cost containment. The result, as reflected in this Business Plan, is the recommendation that the Virtual Network function be contracted out to a third party with a provincial focus and already offering many of the skills and resources required by the VN. Search for the "Host" organization will be accomplished initially through an "Expression of Interest" process to be followed by a more formal "Request for Proposals" process.

The Virtual Network is expected to operate as an independent unit within the Host organization, headed by a Director who, while technically employed by the host organization, will be responsible directly to a Management Committee formed exclusively to lead the flexible training initiative. The Management Committee will be accountable to the Industry Training Authority but will, otherwise, operate as an independent body providing policy-level guidance and advice to the Director and staff associated with the VN.

The VN's key functions include:
- o Facilitating the expansion of flexible learning in the trades
- o Establishing province-wide standards for development and delivery
- o Establishing processes to solicit proposals from development/delivery consortia
- o Facilitating partnership and collaboration among interested organizations
- o Acting as a central source of information about FL in the trades including the provision of educational and technical support
- o Carrying out research to assess the effectiveness of flexible learning in the trades

Project Assessment Committees (PAC, Sub-Committee of the Management Committee) will be formed for each of the trades to be converted to flexible learning. The PAC's will provide advice with respect to the preparation and review of requests for proposals for FL materials development and delivery. PAC's will include representation from the VN Management Committee, ITO's and VN staff.

This Business Plan includes a Delivery Model and outlines the following elements within the Model: Process, Submissions, Funding/Development, Funding/Delivery, Ongoing Evaluation, Intellectual Property Issues, Other Issues, Potential Development/Delivery Organizations.

EXECUTIVE SUMMARY, continued

It is acknowledged that, for the VN and the Delivery Model to be successful, four key, over-riding conditions need to be met:
- o Support from the ITO's and the employers they represent
- o Take-up of the provincial flexible learning mode by a significant number of trainees
- o An enthusiastic response from development and delivery organizations interested in leading innovation in learning
- o A positive feeling among development/delivery organizations that this initiative provides an opportunity to enhance in-house FL skills

This Business Plan reflects a Delivery Model that is quite different from the current model:
- o Certain trades will be identified as candidates for the conversion of some portion of their curriculum (primarily, but not exclusively, technical or in-school theoretical training) to a flexible learning mode (Provincial Flexible Learning Mode or PFLM) to distinguish this from other flexible learning material that some colleges may be using (and will be free to continue to use)
- o A Request for Proposal (RFP) process will be used to identify a consortium of organizations which will, collectively, take responsibility for the development and delivery of the PFLM for a particular trade for the entire Province; the resulting PFLM will become the standard for the Province
- o Funding will be provided by the Virtual Network for the costs of development; delivery costs will continue to be funded at the same level as currently
- o The successful consortium (CO) becomes the organization responsible for all PFLM trainees for that trade for the entire Province, both for the material delivered in a flexible mode as well as for the hands-on or face-to-face learning
- o Trainees will be given the option of pursuing their studies through an individual college (these colleges will generally provide learning in a face-to-face mode although some may incorporate some level of flexible learning) as is the present case; or trainees may opt to take their program in a PFLM mode, in which case they will register with the organization designated within the consortium as the principal or lead institution (PI)
- o The PI takes responsibility for all registration and record-keeping activities for all PFLM trainees in that trade across the Province; this includes training at other institutions within the CO as well as training through the PI
- o The CO members will jointly negotiate the disbursement of the development and delivery funds among themselves, acknowledging each members' relative contributions to development, delivery and administration of the flexible learning project

EXECUTIVE SUMMARY, continued

The Business Plan includes an outline of a "Communications Plan" to ensure that the various stakeholders, ITA, ITO's, employers, trainees, development/delivery organizations and teachers potentially involved in the implementation of PFLM, are fully engaged and informed as the Plan unfolds.

The Instructional Plan acknowledges that the greatest challenge of introducing flexible learning for trades training is the assurance of a high quality of delivery throughout the Province. The Instructional Plan includes a set of principles as well as issues to be considered under the headings of Development, Delivery, Assessment and Standards.

In particular, the following principles are proposed to guide the development of PFLM:
- o Learning outcomes (knowledge and skills) must be at least as good as, if not better than, learning outcomes from traditional training
- o Trainees in a FL mode should receive at least the same quality of guidance and support from teachers as traditional students
- o Institutions providing the face-to-face portion of a program must be involved in the planning and management of FL projects to ensure that the two aspects of learning are fully integrated

A draft set of Standards has been prepared for the development and delivery of flexible learning in the trades acknowledging such critical issues as:

- o Ongoing and frequent communication between trainees and teachers
- o Trainee access to a community of learners
- o Adequate trainee support to ensure success
- o Instructional design that reflects best practices
- o Opportunity for trainee feedback about their learning experiences
- o Provide mixed modalities to address different student learning styles
- o Frequent and ongoing assessment

Funding for development has been approved by the Province in the amount of $1.5 million per year for five years for a total of $7.5 million. The Federal government has been approached for funding, through the Workplace Skills Initiative, and is currently considering funding in the amount of $4,750,000 over three years.

It is acknowledged that the implementation of this Business Plan will yield both qualitative and quantitative improvements. Key qualitative improvements include:
- o Increased trainee and employer satisfaction resulting from alternative ways of completing studies
- o Reduction in barriers for trainees in remove locations

EXECUTIVE SUMMARY, continued

- o Enhanced economic competitiveness for the Province through increased enrolment and completion rates
- o Development of a body of flexible learning expertise in the Province

On the quantitative side, it is expected that the availability of alternative modes of learning will attract additional trainees. Projections have been prepared under each of two scenarios: Provincial funding only (Scenario A) and combined Provincial and Federal funding (Scenario B). Under Scenario A, it is projected that, by the end of the 5th year, an additional 1893 trainees will be attracted to apprenticeship training who would otherwise not have participated and that, again by the end of the 5th year, a total of 4672 trainees will be involved in Flexible Learning. It is also expected that completions will increase as a result of the availability of flexible learning with a total of 492 additional completions by the end of the fifth year.

Under Scenario B, at the end of the 5th year, an additional 3604 trainees will be attracted to apprenticeship training with a total of 8260 trainees participating in Flexible Learning and completions increasing by 506.

The cost per trainee of developing flexible learning material has been calculated at just over $500 per trainee by the end of the 5th year acknowledging that per unit costs are higher in the early implementation years and decline as additional trainees take advantage of the new learning mode.

The Business Plan identifies a number of risks associated with its implementation as well as measures that will be taken to ensure that such risks are, to the greatest extent possible, controlled and minimized.

The Plan concludes with an Action Plan and Timetable which sees the creation of a Virtual Network organization (within a Host organization) by June 15, 2008, the negotiation of agreements with consortia to develop PFLM's by September 30, 2008 and the first offering of PFLM material by May 31, 2009.

BACKGROUND

In the Spring of 2007, the Board of the Industry Training Authority called for the development of a Strategy to develop alternative modes of delivery for trades training with the intent of increasing access for trainees and improving their success and completion rates.

More particularly, the factors influencing this decision include:

- o Need to increase the percentage of apprentices who complete their programs
- o Desire to increase the satisfaction rates of trainees with their programs
- o Desire to attract more people into trades training
- o Recognition that many trainees live at a considerable distance from traditional delivery sites and need more convenient access to training
- o Recognition that block placements cause a financial hardship for trainees because of commuting and housing costs and loss of normal employment income
- o Recognition that block placements cause a scheduling and business interruption hardship for employers
- o Successful introduction of flexible learning in many programs across Canada including some trades in BC

A Strategy was developed and approved by the ITA Board in September, 2007. The Strategy can be accessed on the web at www.itabc.ca .

The ITA Board expressed a keen interest in pursuing the strategy as quickly as possible and requested the development of a Business Plan to move the project forward.

TRADES AND APPRENTICESHIP TRAINING IN B.C.

As of April 30, 2007, over 34,000 apprentices were registered in BC in 130 programs, 72 of which are national in scope (45 "Red Seal" and 27 other trades). Registrants in the 15 trades with the highest enrolment levels account for 77% of BC's registered trainees. The completion rate in BC is 42%, i.e. the percentage of registrants who eventually complete their programs.

Most of the technical ("in-school") training takes place in a "face-to-face" mode, i.e. trainees take part in classes at their local training institution, attending a combination of theoretical and shop/laboratory based training classes.

A number of training institutions in BC have initiated other modes of learning that provide more flexibility for trainees. However, these initiatives have been sporadic and based, largely, on the interest of individual institutions or teachers rather than in response to Provincial priorities. To this point, at least one of the

factors inhibiting the development of a Provincial strategy has been the lack of sufficient and consistent funding.

CHANGING REALITIES

In Canada, Nova Scotia is the only province to have developed a provincial strategy to enhance the development and delivery of flexible learning in the trades. This has been helped, in no small part, by the reality that the Nova Scotia college system consists of a single legal entity with 13 campuses spread across the province. The province offers 21 trades programs of which 11 have been developed in a flexible mode. In Alberta, the Province has supported the development of Individual Learning Modules (ILM's), essentially paper-based curriculum material which, nevertheless, has been used by a number of institutions, including some in BC, to form the basis for the development of flexible learning materials.

Internationally, particularly Australia, New Zealand, the United Kingdom and much of Europe, there has been a very significant investment in the development and delivery of flexible learning in the trades. Research carried out in those jurisdictions report considerable success, both in the development and delivery of flexible learning material but, more importantly, in the acceptance by trainees to adapt to new learning modes.

The research, carried out as part of the Strategy that preceded this Business Plan, identified several key findings that argue for the expansion of flexible learning in the trades in British Columbia:

- o Flexible Learning is growing at a steady, sustainable rate in all areas of education including the trades; this growth is evident in Canada and throughout the world, particularly Australia, U.K, Europe, New Zealand, United States
- o New flexible learning technologies are being continually developed, opening up opportunities for new applications in trades training that were previously unavailable
- o Employers make extensive use of flexible learning modes for the ongoing development of their employees; they expect new employees to be ready and able to learn using these new modes
- o When all conditions are taken into account, flexible learning can be at least as effective as face-to-face learning and has the added advantage of providing educational opportunities to trainees who would otherwise have difficulty accessing learning resources

CHANGING REALITIES, continued

- o Many of BC's training institutions have a long and successful record in developing flexible learning materials; building on this history and reputation, the Province can become a leader in this field

While the factors identified above make a case for the expansion of flexible learning in the trades in BC, there are a number of other factors, more particular to the situation in BC, that also support the case for expansion of FL:

- o Access to trades learning, in the remote areas, is limited by the lack of training facilities in the immediate, surrounding area and the long distances to access the appropriate training facilities; this impacts particularly hard on aboriginal people whose communities are often located in the more under serviced areas of the province
- o A tight labour market heightens the need to attract as many people into the trades as possible; flexible learning opens up opportunities for trainee candidates who might not otherwise consider entering a trade; immigrants, for example, will appreciate the opportunity to pursue at least a portion of their training in a flexible mode, thereby allowing them to reduce time away from work and family
- o Over 2300 high school students are enrolled each year in apprenticeship activities through the ACE-IT program; however, many of these students are in remote areas and, because there are often only one or a few students in each program, they must travel some distance to training institutions in other areas in order to pursue their studies; flexible learning provides an opportunity for these students to take a portion of their studies in a flexible mode in their own home territory thereby reducing the time away from home and the job as well as avoiding the expense of travelling to another area

STRATEGY REPORT RECOMMENDATIONS

The Strategy report (available on the ITA website: www.itabc.ca) identifies a number of issues and developments in the field of apprenticeship training, flexible learning and future trends. Several models are examined as alternatives to support the expansion of flexible learning in the trades in BC. The report concludes with the following recommendations:

1. The Province should pursue a collaborative approach to the expansion of flexible learning in the trades by establishing a Virtual Network (VN) model, fully involving the Province/ITA, ITO's/employers, development/delivery institutions and teachers.

STRATEGY REPORT RECOMMENDATIONS, continued

2. The VN should develop a transparent selection process (for the development of flexible learning materials) that has the full input of major stakeholders.
3. Trainee accessibility to flexible learning material should be maximized by eliminating barriers, including ensuring that trainee costs are equivalent to face-to-face modes.
4. Maximize trainee uptake of flexible learning by ensuring that material is of a high quality and follows Provincial standards.
5. Use a Business Plan approach to the development and delivery of flexible learning materials including a full assessment of benefits and costs.
6. Province/ITA to provide annual funding on a 50/50 matching grant basis, in the amount of $2-4 million per year.
7. Develop Provincial standards for development and delivery.
8. Ensure that implementation of the Strategy includes a thorough process of consultation, promotion and orientation, with the result that all stakeholders are involved, informed and engaged.
9. Establish specific, milestone targets for the implementation of FL and monitor results to measure progress and success.
10. Initiate a quantitative and qualitative, longitudinal research project to study the impact of flexible learning on student outcomes as well as benefits and costs.
11. Implement the Strategy cautiously, building on the positive results of initial developments.

These recommendations formed the starting point for the development of a Business Plan. The Plan has been further informed through discussions with a variety of stakeholders including the ITA Board, ITO representatives, a number of development and delivery organizations and other organizations with an interest in trades training.

A Steering Committee, chaired by Alan Davis, Vice-President, Education, Vancouver Community College, has guided the development of the Business Plan.

PRIMARY GOALS FOR THE EXPANSION OF FLEXIBLE LEARNING IN BC

The following goals (in rough order of priority) were identified in the strategy document and form the basis for the development of the Business Plan.

o Increase percentage of apprentices who complete their programs
o Increase satisfaction rates of trainees with their programs
o Attract more people into trades training by offering alternative modes of delivery

PRIMARY GOALS FOR THE EXPANSION OF FLEXIBLE LEARNING IN BC, continued

- o Reduce barriers to learning caused by the need for some trainees to commute to obtain in-school portion of training
- o Reduce financial hardships for apprentices who need to pay for housing and/or transportation costs to attend training
- o Reduce hardship to businesses by reducing the need for trainees to be away from work for extended periods of time for training
- o Enhance computer skills that can be used in other aspects of the trainee's career and, thereby, improve industry competitiveness
- o Develop flexible learning products that can be marketed nationally and internationally

ASSUMPTIONS AND OBJECTIVES FOR THE EXPANSION OF FLEXIBLE LEARNING IN BC (5-year)

The following assumptions and objectives have been identified in order to guide the development of the Business Plan as well as to provide specific, measurable targets. While the objectives may be modified over time, and with the addition of new information and experience, they should represent a reasonable starting point for this stage of the Business Plan:

- o At the time of the preparation of this Business Plan, Provincial funding for development of flexible learning material for the trades in BC had been approved in the amount of $1.5 million for five years for a total of $7.5 million; this amount does not include delivery costs; a request has been submitted through the Federal Government's Workplace Skills Initiative for funding in the amount of $4.75 million spread over three years; it was not known, at the time of the writing of this Plan, whether the funding has been approved.
- o As a result, two activity and financial projections have been prepared: Scenario A reflecting Provincial funding only and Scenario B reflecting both Provincial and Federal funding
- o It is estimated that development/conversion costs will be in the region of $650,000 for each trade allowing for the development of 2 trades per year under Scenario A and 4 Trades under Scenario B, dropping to 2 in the fourth year when Federal funding ceases; the estimated development/conversion costs do not take into account the potential to reduce costs by adapting existing material nor do they take into account cash or in-kind contributions from bidding organizations and their partners
- o Projected enrolment for 2007/08 is 39,500 trainees; historical growth has been well into the double digits for several years; it has been assumed, for the purpose of projections in this Business Plan that growth will begin to level off and, thus, a compounded rate of 5% per year has been used

ASSUMPTIONS AND OBJECTIVES FOR THE EXPANSION OF FLEXIBLE LEARNING IN BC (5-year), continued

- o It has also been assumed that, in addition to the "normal" growth pattern, other trainees will enrol in the trades, attracted by the availability of training in a flexible mode; for projection purposes, a compounded rate of 5% per year has been used; thus, the overall growth rate reflecting both growth elements is projected at 10% per year
- o The top 15 trades account for 26,000 of a total of 34,053 trainees (2006/07) or 76%; thus, the 15 trades represent an average of approximately 1700 trainees each; this average will be used for activity projections since it is expected that the larger trades will be the first to be developed/converted although it is not known in which order this development will take place
- o Thus, by the 5th year of this Business Plan, with 14 trades converted to a Flexible Learning mode, approximately 75% of all BC apprenticeship trainees will have the option of taking a portion of their training in the new mode
- o It has been assumed that trainees will convert from traditional learning modes to flexible learning modes at the rate of 10, 15, 20 and 25% in each of years 2-5 of the period covered by this Business Plan (the first year is a development year)
- o In the longer term, other trades, i.e. those trades with smaller enrolments will be considered for development on the basis of one or a combination of the following criteria:
  - major issue of trainee access to delivery institutions
  - major issue of skill shortages that could be addressed by F.L.
  - significantly low completion rates that could be addressed by F.L.
  However, the conversion of these trades is not directly reflected in the activity and financial projections covered by this Business Plan
- o Cost to trainees of taking their training in the Flexible Learning mode will be identical to existing (largely Face-to-Face mode) except for hardware costs which will be the responsibility of the trainee (these, in turn, will be offset by savings in travel and time away from work)
- o The current completion rate for Apprenticeship programs is 42%; it is expected that completion rates will improve as a result of trainee access to flexible learning modes; for projection purposes, it has been assumed that completion rates will increase at 1 percentage point per year which translates to 2.4% per year
- o Target Satisfaction rates for students pursuing F.L. mode equal to or better than students pursuing training in F-F mode
- o Target 10% cumulative improvement in employer satisfaction rates (with learning mode alternatives provided to trainees) at end of first five year period compared to baseline year satisfaction levels

ORGANIZATIONAL PLAN

The following outlines the elements of an Organizational Plan for the proposed Virtual Network and the various stakeholders that will have key roles in the functions of the VN.

The elements of the Organizational Plan are organized under the following headings: VN Mandate, Argument for a Central, Province-Wide Focus, Organizational Options, Management Committee, Role of ITO's, VN Functions, Project Assessment Committee (PAC), Role of Key Stakeholders, Staff/Functions, Space.

VN MANDATE

To provide cost-effective development and delivery of flexible trades training, throughout the province of British Columbia, through central co-ordination and decentralized development and delivery, working in partnership with the Industry Training Authority, ITO's or other employer training organizations (where ITO's are not available) and development/delivery institutions.

ARGUMENT FOR A CO-ORDINATED PROVINCE-WIDE FOCUS

There has been a certain amount of debate and discussion about the rationale for a co-ordinated, province-wide focus for the expansion of flexible learning, as opposed to allowing the current situation to continue (individual institutional initiative) or delegating development to a number of organizations in the Province.

The following summarizes the most cogent arguments for a co-ordinated approach:
- o Provides a <u>focus</u> to encourage the development of more FL materials in the trades
- o Creates a <u>central resource</u> for the support and enhancement of FL in the trades
- o Provides an opportunity to implement a Province-wide FL strategy based on <u>Provincial priorities</u>
- o Adoption of <u>Provincial standards</u> will generate a <u>higher quality</u> of development and delivery of FL materials
- o Co-ordinated, Provincial effort will enhance opportunities to <u>attract funding</u>
- o Enhances <u>consistency</u> in the development and delivery of FL materials
- o A high-profile, Provincial strategy will facilitate the <u>active participation of trainees and employers</u>

ORGANIZATIONAL PLAN, continued

ORGANIZATIONAL OPTIONS

The creation of a focal point for the expansion of FL in the trades could be accomplished, organizationally, in several ways (the pros and cons were discussed at length in the Strategy document):

1. Create a Virtual College for FL training; this would be a new, Provincial organization with a mandate to develop and deliver FL for the trades areas
2. Create a Virtual Network* combining the notion of centralized co-ordination with decentralized development and delivery

The Strategy document recommended the second option for a number of reasons including the opportunity to build on the strengths of existing organizations as well as anticipated lower costs compared to Option 1.

Within the second option, there are several ways to organize the Virtual Network, each with its own advantages and disadvantages:

1. Create a separate legal structure with sufficient staffing (four positions were suggested in the Strategy) to deliver the primary VN functions; secondary VN functions would be contracted to an organization(s) with a Provincial mandate and resources/services to support the VN
2. Create a separate legal structure with minimal staffing (say a CEO and several part-time positions), contracting out a number of primary and all secondary VN functions to a Provincial organization(s)
3. Contract out the entire VN function to an organization with a Provincial mandate (or the potential to develop a Provincial mandate) ensuring that the staffing and resources within the Provincial organization meet the requirements of the Provincial FL initiative

The following chart outlines the major advantages and disadvantages associated with each option:

* The name "Virtual Network" is a working title and subject to discussion around other naming options. Suggestions for other names include:

- o Virtual Network for Trades Training, B.C.
- o Industrial Training Virtual Network, B.C. (INTRAVINE)
- o Flexible Learning in the Trades, BC (FLINT BC)
- o The B.C. Industrial Training Network
- o FLEXTRADE BC
- o TRADES ONLINE BC

ORGANIZATIONAL PLAN, continued

OPTION	ADVANTAGES	DISADVANTAGES
1. Separate Legal Structure with "full" staffing as recomm'd in Strategy document; secondary functions are contracted out	* Organization fully focussed on the objectives * Staff are fully dedicated to the VN functions * Accountability and control is directly with a governing structure (Board) * Controls if and which functions are contracted out * Can contract with more than one organization to take advantage of external expertise	* Potentially more costly * Staff may be underutilized * May be more difficult to tap into the broader skills/knowledge of another organization * Need for a separate legal entity; separate financial, HR, etc. requirements * Creates potential problems in terms of ITA guidelines for "Admin" positions, "controlled entity" issue and resulting inability to retain a surplus * requires time to create a legal structure, hire staff, build up organizational expertise
2. Separate Legal Structure with minimal staffing; some primary and all secondary functions are contracted out	* Organization fully focussed on the objectives * Staff are fully dedicated to the VN functions * Accountability and control is directly with a governing structure (Board) * Controls if and which functions are contracted out * Can contract with more than one organization to take advantage of expertise * Potentially less costly than Option 1 * Permits control to remain with an independent organization * Combines central direction and control with ability to tap into another organization's expertise	* Need for a separate legal entity * Creates potential problems in terms of ITA guidelines for "Admin" positions, "controlled entity" issue and resulting inability to retain a surplus * Control over staff selection, priorities, timing (i.e. in the operating partner organization) becomes more difficult * requires time to create a legal structure, hire staff, build up organizational expertise
3. Fully Contracted Out	* Broader base of expertise and, possibly, experience * Potential for more efficient use of staff and, therefor, lower costs * Avoids the complications of a separate legal entity, separate financial, HR, etc. requirements * Avoids the potential problems re ITA guidelines re "Admin" positions and surplus issue * Existing legal structure, staff and organizational expertise permits a faster start	* Focus on FL in the Trades becomes subsumed within the broader goals of the contracted organization * Steering Committee/ITA control over staff selection, priorities, timing becomes more difficult * Ability to provide separate direction through, say, a Steering Committee becomes more indirect and, potentially, less effective

ORGANIZATIONAL PLAN, continued

RECOMMENDATION

While any of the three options could work, it has been determined that the following factors carry significantly more weight than others in coming to a recommendation:

1. There is an expectation, on the part of the ITA Board and senior staff, that the FL initiative should be started quickly; Options 1 and 2 would require some time, perhaps as much as a year, to create a separate legal structure, hire staff and develop the kind of organizational expertise that would be needed to precede the initiation of the strategy.
2. The costs for a separate structure would be significantly in excess of the ITA Board's internal guidelines that no more than 10% of the total budget is to be devoted to "Administrative" functions. The entire costs of the VN structure would be interpreted as "Administrative" for internal ITA purposes.
3. Provincial guidelines do not permit organizations such as ITA and its "controlled entities" to carry a surplus forward into succeeding years. The VN would be treated as a controlled entity and would, thereby, lose a significant degree of operational flexibility as a result.

It is, therefor, recommended that the VN be organized under Option 3, i.e. contract the entire service out to a third party. The successful third party will be referred to as the "host" organization. It is further recommended that a two stage process be undertaken for the selection of the host organization:

(1) a call for "Expressions of Interest"
(2) a "Request for Proposals"

The Expression of Interest process will ensure that the committee to select the "host" organization (assumed for now to be the Steering Committee) will make the most profitable use of its time by dealing only with organizations that, at least initially, possess the requisite resources to act as a viable host for the VN. The Expression of Interest process will also permit the selection process to start earlier, i.e. before the completion of the Business Plan, because the proponents' responses are not contingent on access to a Business Plan as they would be for a more formal "Request for Proposal" process.

ORGANIZATIONAL PLAN, continued

A number of organizations have come forward to indicate their interest in fulfilling the role of "host" organization.

It is expected that the Virtual Network function would be operated as an independent unit within the host organization and that it have a high profile, as opposed to being subsumed within the other activities of the organization. It is also expected that one individual will be given executive responsibility for the operation and success of the VN (Director level). Provision also needs to be made for the creation of an independent Management Committee which will guide and advise the VN function in much the same way as an independent Board would oversee a separate legal entity. The host organization should have representation on the VN Management Committee as a non-voting member.

MANAGEMENT COMMITTEE

The Management Committee (MC) referred to above should incorporate the following structure and operating guidelines
- o Similar to ITO Boards
- o Accountable to the ITA (at least for the first, say, 3 years)
- o Appointments to be handled through the ITA
- o MC members are to be volunteers, i.e. unpaid
- o MC membership is to be drawn from a combination of industry representatives (could be cross-appointments from ITO Boards or nominated by ITO's), individuals with knowledge and expertise in flexible learning and finance; there should be one ex-officio ITA member on the Board
- o Other stakeholders that might be considered for representation on the MC include: trainees, Aboriginals
- o The VN Director will attend all MC meetings but will not be a member nor have a vote
- o A representative of the Host organization will attend all MC meetings but will not be a member nor have a vote
- o MC Members to be appointed for a term of three years with an option for one term renewal
- o MC responsibility:
  - to provide vision and direction for F.L. in the trades in BC
  - to oversee the process for the allocation of funding for FL
  - to ensure accountability and quality of activities managed through the VN
  - to hire and evaluate the Director
  - to provide direction to the Director
  - to liaise with and represent key stakeholders and other organizations involved in the VN; in particular, to liaise with the Host organization and ensure a smooth working relationship between the Director and the

ORGANIZATIONAL PLAN, continued

> Host organization staff
> - to evaluate the effectiveness of the activities funded through the VN
> - to seek development funding for FL in the trades

ROLE OF ITO'S

It is understood that the ITO's have a critical interest in the activities of the VN; it is intended that the interests of the ITO's will be maintained through representation on the Management Committee and the Project Assessment Committees that will monitor the RFP process.

VN FUNCTIONS

The following have been identified as functions that should be carried out by the VN organization.

1. Facilitate the expansion of the development and delivery of FL for trades training in BC (It is expected that the process will allow for the conversion of 2-4 trades per year over a five-year period)
2. Establish a set of high standards for the development of FL in the trades, building on existing best practices.
3. Establish processes to solicit and encourage development/delivery organizations to respond to requests for proposals
4. Establish review mechanisms to assess responses to RFP's, recognizing that there is a need to involve key players such as the Industry Training Organizations
5. Act as a central source of information about FL opportunities in the trades in BC for learners, employers and other institutions within BC and for enquiries from outside the Province
6. Facilitate partnership and collaboration opportunities between BC organizations as well as organizations outside BC for the development and/or delivery of FL
7. Ensure the establishment of review processes to evaluate the impact on trainee access, success and satisfaction; evaluate employer satisfaction; evaluate the impact of FL on the percentage of employers participating in apprenticeship training; evaluate the impact of the introduction/expansion of FL on delivery organizations
8. Provide educational and technical support and training in FL in the trades, as requested or needed
9. Advise BC organizations on copyright and intellectual property issues regarding FL in the trades
10. Negotiate province-wide agreements on the purchase or sale of appropriate FL materials or support software, in partnership with and on behalf of provincial institutions involved in FL

ORGANIZATIONAL PLAN, continued

11. Assist in marketing materials developed by individual organizations
12. Create a portal for all FL programs in the trades and ensure ongoing maintenance
13. Ensure technical inter-operability and transferability of learning materials throughout the BC vocational and trades flexible learning system
14. Provide advice on new technology developments likely to impact on FL in the trades and the installation, testing and operation of relevant hardware/software networks

It may not be possible for the host organization to provide all of the functions included in the list above, although it is hoped that it can meet most of these functions. The successful proponent may, therefore, sub-contract some of the above functions to a third party if some in-house capacity is lacking.

PROJECT ASSESSMENT COMMITTEE (PAC)

The Project Assessment Committee (PAC), a sub-committee of the Management Committee, will act as an advisory group to VN with respect to the following:
   o Review RFP's for development/delivery of flexible learning to ensure agreement with regard to approach, content, etc.
   o Adjudicate RFP process by reviewing responses and recommending successful candidates
   o Recommend funding allocation to the Management Committee

A separate PAC will be created for each trade.

Membership of the PAC will include:
   o VN Director (Chair)
   o ITA representative
   o ITO representative for the trade under consideration
   o VN Management Committee representative (education)
   o VN FL specialist (or comparable position),
   o VN Administrator (or comparable position)
.
ROLES OF KEY STAKEHOLDERS

   o ITA
      - contributes to overall vision
      - sets policy (e.g. intellectual property)
      - approves and takes responsibility for Provincial quality standards
      - provides development funding for FL and operational funding for VN
      - monitors activities
      - participates on VN Management Committee

ORGANIZATIONAL PLAN, continued

- o ITO'S and other industry organizations in trades not represented by ITO's
    - set priorities for FL within their own trades areas
    - provide advice to VN re the development of RFP's. the responses to RFP's and subsequent negotiations with development/delivery Organizations (through the Project Assessment Committee)
    - participate in ongoing monitoring of delivery of FL within their areas of responsibility
    - liaise and communicate with learners and employers about FL matters

- o DEVELOPMENT/DELIVERY ORGANIZATIONS
    - develop FL material
    - deliver FL material
    - market FL programs outside the Province

STAFF/FUNCTIONS

Option 3 (as outlined in the section above, "Organizational Options") permits the most effective use of staff in that the host organization will likely include staff that can fill some or all of the functions that are contemplated to be required to make the VN successful.

While negotiations with the successful host organization may generate a number of staffing options, it is expected that the VN function will be assigned to a full-time "Director" position. The Director will be directly accountable to the Management Committee. While the host organization may manage the selection process for the Director, the appointment will be subject to the review and approval of the Management Committee. For payroll purposes, the Director will be an employee of the Host organization.

It is also expected that the host organization will need to provide staffing to fulfill certain functions that are described below as "Administrator", "Flexible Learning Specialist", "Technology Specialist". These services may be provided by staff of the host organization which might combine the VN functions with other host organization functions.

The following is a list of functions that are expected to be performed within various positions:

- o DIRECTOR
    - responsible to the Management Committee for day-to-day management and operation of the VN
    - incumbent will have experience in trades training and flexible learning
    - incumbent should have a strong vision and enthusiasm for FL in the Trades

ORGANIZATIONAL PLAN, continued

- good leadership and interpersonal skills essential
- key liaison with major stakeholders

o ADMINISTRATOR
- responsible for the general administration, financial, human resource and space management issues of the VN
- in particular, responsible for the administration of the

  VN development fund including disbursement, tracking and reporting of the use of the fund

o FLEXIBLE LEARNING SPECIALIST
- responsible for educational advice and support with respect to funding proposals, training, developing a community of practice and project evaluation
- needs a strong, operational understanding of FL in the trades
- key liaison with development/delivery institutions
- good interpersonal skills

o TECHNOLOGY SPECIALIST
- responsible for developing a web-site for the VN, providing technical advice and assistance to development/delivery institutions and for ensuring that the VN is at the leading edge of FL technologies
- will work with the development/delivery organizations to provide province-wide training for individuals working in the FL trades field

The Organizational Plan below for the Virtual Network provides an overview of the relationships between the various entities as it relates to the delivery of the Provincial Flexible Learning Mode:

ORGANIZATIONAL PLAN, continued
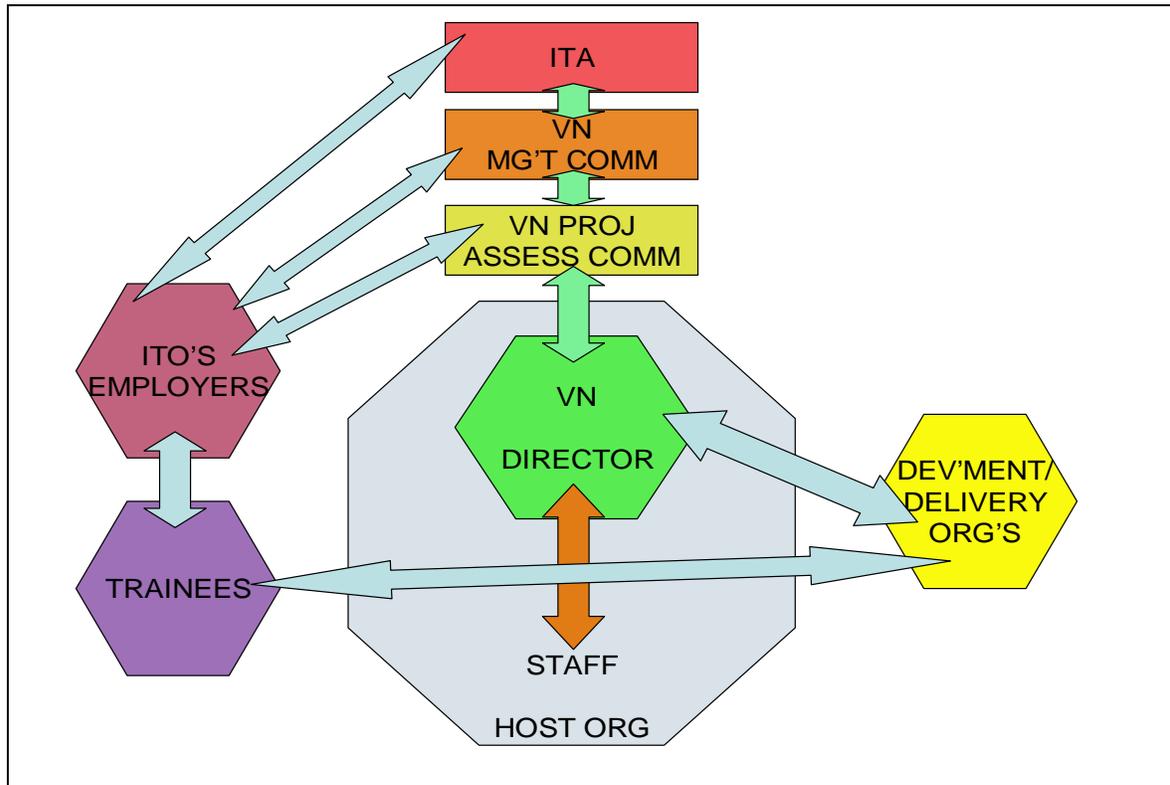
SPACE

Space requirements for the VN organization will be influenced, to some extent, by the space available within the host organization. However, it is expected that the following space requirements are a minimum:

- o Accessible space to accommodate
  - office for Director (125 sq ft)
  - offices for any other VN "dedicated" staff (100 sq ft per staff member)
  - access to a meeting room (200 sq ft)
  - kitchenette or access to same
  - washrooms or access to same
  - reception/waiting area (100)
  - some potential for future expansion

DELIVERY MODEL

This Business Plan and the Delivery Model described in this section will be judged successful only if four over-riding conditions are met:

- ✓ **ITO's and the employers they represent support this initiative and encourage trainees to participate**
- ✓ **A significant number of trainees actually choose to pursue their training in a flexible mode format**
- ✓ **Development and delivery organizations take up the challenge to deliver high quality flexible learning materials for Provincial use**
- ✓ **Development/delivery organizations, both small and large, see an opportunity to participate in the initiative and use the opportunity to enhance their flexible learning expertise and infrastructure**

It is critical, therefor, that the Delivery Model described in this section is supportive of each of these conditions.

INTRODUCTION

For clarification and reference purposes, it is recognized that trades training is delivered in one of three modes:

(1) On the job training, under the supervision of a journeyperson; while some of this training could be delivered in an FL mode, it is likely minimal
(2) Technical or "in-school training" that generally takes place in a classroom and that could be described as theoretical; this is the area that is most likely to lend itself to conversion to a FL mode.
(3) Technical or in-school training that generally takes place in a laboratory, shop or simulated "real" environment; some of this training may lend itself to conversion to a FL mode

DELIVERY MODEL, continued
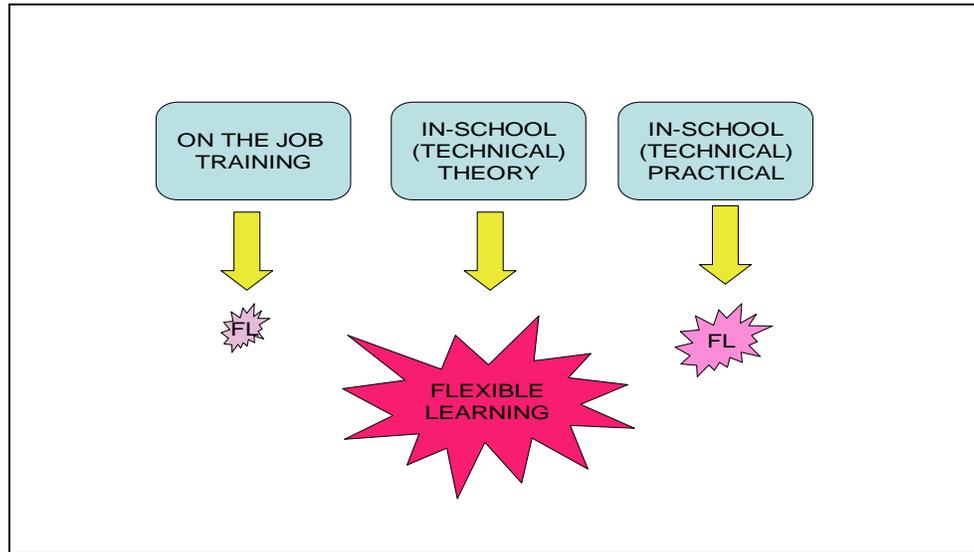
The current model for delivering Apprenticeship training to adults (other models exist for training high school students under the ACE-IT structure) is that each college negotiates with the Industry Training Authority for training activities within its respective jurisdiction, depending on a shared vision of need and the potential to fill one or more sections. Funding is provided by ITA for the agreed-upon number of sections and each college delivers all of its own training, whether in a face-to-face, distance or blended mode. While most delivery institutions provide the in-school (technical) training in a face-to-face mode, some colleges have created or adapted other modes, including flexible learning in various forms. Regardless of the delivery mode, ITA funds each trainee at the same rate.

This Business Plan contemplates a different delivery model for those trainees who choose to register in the Provincially-based flexible learning mode of a particular trade:

- o Certain trades will be identified as candidates for the conversion of some portion of their curriculum to a Flexible Learning mode on a Province-wide basis, henceforth described as Provincial Flexible Learning Mode or PFLM to distinguish this learning material from other flexible learning material that some colleges may be using
- o Expression of Interest (EOI) and, then, a Request for Proposal (RFP) process will be used to identify a consortium of organizations that will take responsibility for the development and delivery of the PFLM for a particular trade for the entire Province; the resulting PFLM will become the standard for the Province
  (henceforth the consortia contemplated in this Business Plan will be referred to as "Project Consortium" to avoid confusion with other Provincial consortia that are unrelated to this Business Plan)

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DELIVERY MODEL, continued

- o The project consortium that bids for and obtains the PFLM contract for a particular trade becomes the organization responsible for all PFLM trainees for that trade for the entire Province, both for the material delivered in a flexible mode as well as for any hands-on training
- o Trainees will be given the option of taking their program in a PFLM mode, in which case they will register with one organization designated within the project consortium as the principal or lead institution (PI).
- o The PI takes responsibility for all registration and record-keeping activities for all PFLM trainees in that trade across the Province; this includes training at other institutions within the project consortium as well as training through the PI
- o Each project consortium wishing to be the PFLM developer and deliverer for a trade will need to indicate which of the project consortium members are responsible for development of materials, and for each form of delivery (online, face-to-face, other), across the province
- o Project funds will include grant money allocated by VN, tuition fees and ITA funding for trainees within the project, and any other sources of funding identified by the project consortium (e.g. revenues from sales of materials outside the province).
- o The members within each project consortium will jointly negotiate the disbursement of total project funds between the project consortium members for PFLM administration, development and delivery, dependent on the project consortium members' relative contributions to development, delivery and administration of the project. This will need to be negotiated and agreed to and form part of the RFP submission.

Trainees will continue to have the option to take their program at the College of their choice (although not the PFLM mode). It is recognized that a number of colleges currently offer some form of flexible learning to trainees enrolled in certain programs at these colleges. This Delivery Model does not apply to those programs nor the trainees enrolled in them although there is certainly potential for these colleges to become a member of the project consortium and, thereby, become a Provincial supplier of flexible learning training. Otherwise, these colleges will continue to offer their programs in the same fashion as they do currently.

The elements of the Delivery Model included below outlines how the expansion of FL could work within the VN format. Clearly, there are a number of variations to the recommended structures and procedures that could also work, perhaps equally well. However, the suggested Model is an attempt to outline those structures and processes that are likely to have the highest chances for success.

DELIVERY MODEL, continued

The elements of the Delivery Model are grouped into the following sections: Process, Submissions, Funding/Development, Funding/Delivery, Ongoing Evaluation, Intellectual Property Issues, Other Issues, Potential Development/Delivery Organizations:

PROCESS

- o Determination of priorities for development of flexible learning will rest with each of the ITO's or, if a trade is not represented by an ITO, an appropriate industry association; development of FL modes of delivery will only be pursued if it is strongly supported by the ITO and its employer members
- o Each year, the VN will issue a Request for Proposals (RFP) for support funding for PFLM development projects
- o Management of the RFP process will be carried out by the VN in close consultation with the ITO within which the trade is located (or appropriate industry organization(s) if the trade is not housed within an ITO)
- o As outlined above, a project consortium of organizations (CO) will be invited to take responsibility for the development and delivery of the PFLM for a particular trade for the entire Province but only for those trainees who have elected to enrol in a PLFM program; trainees who wish to train at their local institution will continue to have the option to do so
- o One organization, the Principal Institution (PI) in the consortium, will take responsibility for all registration and record-keeping functions
- o The CO is expected to develop a five year Business Plan that will demonstrate the financial viability of its proposal, combining both the development and delivery aspects of the training process
- o In order to contain costs, CO's are encouraged to negotiate arrangements with other organizations that may have resources or course material that can be used/adapted for BC purposes; these arrangements will be made directly between the CO and the "other" organization; however, the CO will be responsible to the VN for the total financial projection in its five year business plan and all of the resulting commitments
- o There will need to be a close and ongoing working relationship between the flexible learning development and delivery organizations for a particular trade to ensure that there is a seamless and complete coverage of all learning material required in the trade to meet Provincial (and, by definition, national) standards
- o A Project Assessment Committee (PAC), part of the VN structure, will adjudicate the proposals and recommend fund allocation to the VN Management Committee; the ITO affected will have representation on the Committee for the trade(s) in their area

DELIVERY MODEL, continued

- o PAC may include: VN Director (Chair), ITA representative, ITO representative (for the trade), VN Management Committee representative (Education), VN FL specialist (or comparable position), VN Administrator (or comparable position)
- o Priority will be given to:
  - proposals will normally be considered only for all years of an entire trade
  - proposals that have the potential to impact on a minimum of 400 Trainees, annually, at the end of the initial five-year period
  - proposals that demonstrate the potential to improve access to training by learners in remote communities
  - proposals demonstrating that the project consortium partners have the experience and capacity to develop and deliver high quality, flexible learning
  - proposals that demonstrate an ability to become completely self-financing within five years
  - proposals that include partners with the potential to provide additional funding and/or material that has already been partially developed

SUBMISSIONS

- o Submissions are to be based on a Business Model approach including a five-year financial plan that discloses all revenues and expenditures related to the development and delivery of the flexible learning material for all PFLM trainees; the plan must show how the organization will ensure the long-term sustainability of the PFLM without further, supplementary VN or other government funding
- o In addition to the 5-year financial plan, the response to the RFP must include at least the following:
  - Names of all institutions included in the project consortium
  - Identification of Principal Institution and name of individual acting as "lead" on the project
  - signature of Presidents of each of the institutions in the project consortium signifying approval of the RFP response
  - trade to be developed
  - a market analysis of the demand for flexible learning in the trade under consideration
  - precise description of the process to identify conversion of the trade to a Provincial flexible learning mode including both flexible and face-to-face delivery; reference to be made to the Provincial Program Outlines for the trades
  - method of materials/course/program development
  - precise description of the nature of the digital flexible learning material to be developed including a "typical" flexible learning lesson

DELIVERY MODEL, continued

- demonstration that the material to be developed will be of a high quality and conform to Provincial standards
- provision for adequate "maintenance" costs for the FL material
- method of delivery including support services
- demonstration that project consortium institutions have a protocol and process in place for joint development of material
- demonstration that the CO will ensure that trainees have equitable access to the proposed PFLM modes of learning that do not put them at a disadvantage in comparison with trainees pursuing traditional modes of learning (with the exception that trainees will be expected to provide their own computer hardware)
- proposed methods of evaluation
- the target trainee population, an estimate of the % of the population that is expected to convert to a flexible learning mode and an outline of how the CO intends to promote enrolment

o Estimated costs for the development portion of the project are expected to be reasonable and based on prior experience wherever possible; costs will be subject to audit at the conclusion of the development portion of the project
o The CO may wish to give consideration to developing one or more alternative learning modes to suit the learning styles of individual trainees (e.g.lower-tech modes)

FUNDING/DEVELOPMENT

o VN funding will, in general, be directed to the development of new, high quality digital learning materials
o CO's will be expected to make a substantial, in-kind contribution to PFLM projects; this may be in the form of developer time, existing online materials, support (e.g. labs, equipment) and/or other administrative overheads
o CO's will be entitled to up to 100% of sales/lease revenues outside the Province, depending on the size of their in-kind contribution to the project; a prorated schedule for revenue sharing will be developed to recognize varying levels of in-kind support
o CO's are encouraged to seek supplementary funding for the development portion of their projects from industry organizations, partner organizations and other sources, either as cash or in-kind contributions

DELIVERY MODEL, continued

FUNDING/DELIVERY

- ITA funding for delivery of course material will be identical for F-F and FL learning modes
- Annual negotiations for seats/sections for PFLM trainees will be a joint discussion between the ITA/ITO's and project consortium members (ITA currently handles the negotiations with the intent that this function be migrated entirely to the ITO's)
- It will be the responsibility of the project consortium partners to negotiate an appropriate split of funding (ITA grant and trainee tuition fee) to reflect the appropriate share of development and delivery costs; for instance, other FL consortia in the Province have split operating revenues based on the percentage of hours taught by each of the institutions

ONGOING EVALUATION

- The VN will establish a series of evaluative processes to assess the success and effectiveness of the PFLM strategy
- These evaluative processes will focus on:
  - trainee responsiveness
  - trainee success and satisfaction; trainee success will be measured in terms of overall grade results as well as completion rates
  - institutional responsiveness
  - employer support and satisfaction
- As an independent exercise, ITA will establish an evaluative process to assess the overall viability and effectiveness of the FL strategy

INTELLECTUAL PROPERTY ISSUES

- Ownership of the flexible learning material will remain with the Province, through ITA; CO's will need to provide assurance, through the PDF, that their institutions' collective labour agreements will permit this arrangement
- CO's will be given the exclusive right to deliver the flexible learning portion of the trades for a period of five years with a renewal option for a further five year period; this right will be subject to the CO developing and delivering the program as outlined in the response to the RFP including the quality of the material as well as the scope of trainees involved in flexible learning; by extension, CO's will have exclusive right to the use of the PFLM material for the duration of their contract

DELIVERY MODEL, continued

- o After the completion of the contract, the PFLM material will become available free of charge to all institutions within BC; institutions outside BC will be charged a fee for the use of the material
- o Flexible learning material developed in collaboration with another organization outside the Province will be governed by the arrangements negotiated between the VN, the CO and the outside organization; these arrangements will be documented as part of the RFP process

A number of potential student and consortium scenarios have been developed and included in Appendix A to illustrate how students and prospective project consortia might organize themselves to take advantage of this Provincial initiative. Several scenarios outlining the benefits of flexible learning for students are also included.

OTHER ISSUES

- o It is critical to ensure that the entire development, delivery and monitoring process around the Provincial strategy engages all stakeholders on a continuing basis
- o It may be helpful, in the early stages of the introduction of PFLM to a particular trade, to provide financial incentives to prospective trainees by waiving tuition fees or providing assistance with the acquisition of computer hardware and software
- o It is also important to ensure that potential risks are identified and processes are put in place to contain and minimize those risks

The following diagram illustrates the relationship between the various entities contemplated in the Delivery Model:

DELIVERY MODEL, continued
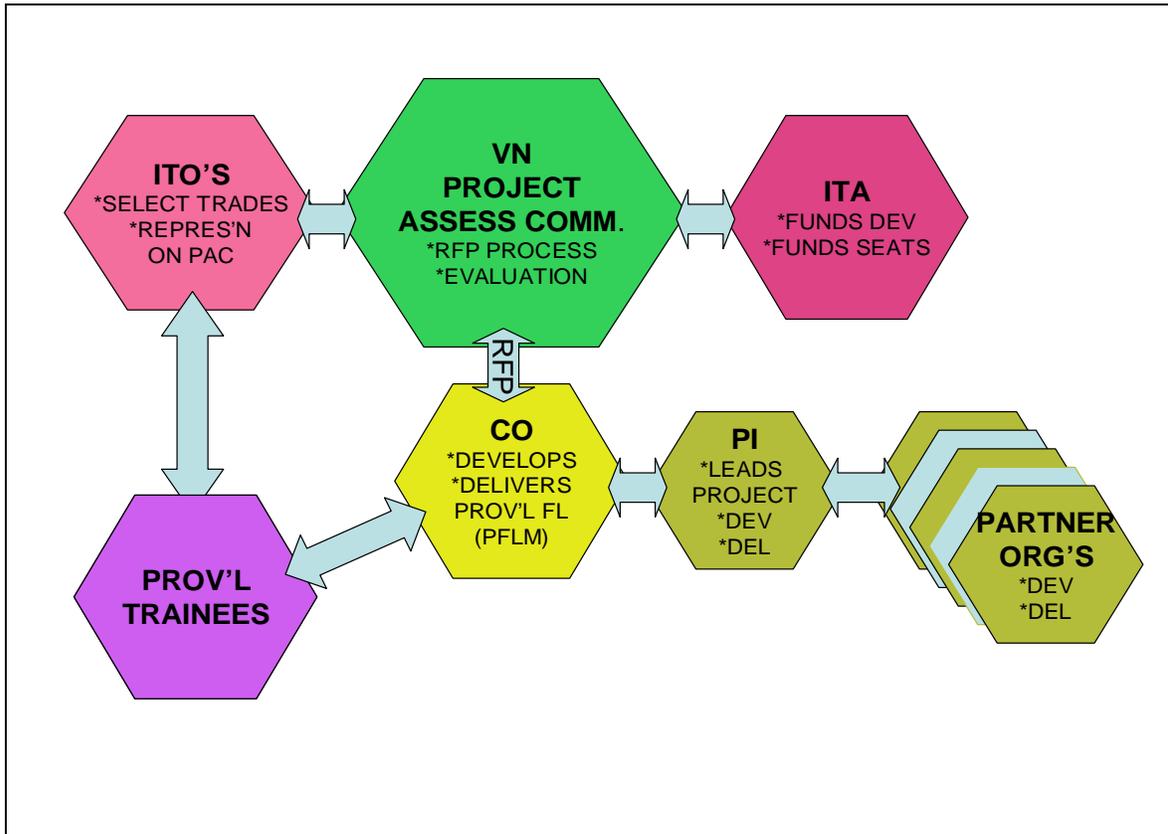
POTENTIAL DEVELOPMENT/DELIVERY INSTITUTIONS

From interviews that were carried out as part of the development of the Strategic Plan, it is fair to say that most, if not all of the post-secondary institutions in BC will have an interest in being considered prospective Development and/or Delivery Institutions.

Outside the Province as well, several organizations demonstrated both an inventory of flexible learning materials and a keen desire to partner with the BC initiative on development and, possibly, delivery of FL:

COMMUNICATION PLAN

It is critical to the success of this project that the various stakeholders: ITA, ITO's, employers, trainees, development/delivery institutions, teachers, involved in the implementation of the FL Business Plan be fully informed and engaged as the Plan unfolds.

A Communication Plan needs to be developed to accomplish this with the following elements:

- o A general press conference accompanied by a media release
- o A short, attractive brochure outlining the new strategy with a mailing to all trade/apprentice employers and trade/apprentice trainees
- o Letters to interested agencies and organizations with copies of the media release and brochure
- o Meetings with key stakeholder groups: ITO staff, ITO Boards, heads of development/delivery institutions, major industry associations (particularly where ITO's don't exist)
- o Ongoing press releases, information sessions, etc. as the Virtual Network is put in place and begins operations
- o A separate section of the ITA web-site should be devoted to the new initiative
- o In addition, the VN will need to develop its own web-site

The Communication Plan should be initiated through ITA and, once the VN is in place, taken over by that function.

INSTRUCTIONAL PLAN

The greatest challenge of FL for trades training is the assurance of high quality delivery of training throughout the Province. Each Prime Institution and its team will need to find its own solution to this challenge and the solutions will vary depending on the specific trade, the nature of the material to be learned, the geographical distribution of trainees and other factors.

The following material will act as a general guide to the development and delivery of FL material:

PRINCIPLES

- o Learning outcomes (knowledge and skills) must be at least as good, if not better than, learning outcomes from traditional training
- o Trainees in a FL mode should receive at least the same quality of guidance and support from teachers as traditional students

INSTRUCTIONAL PLAN, continued

- o Institutions providing F-F portion of program must be involved in the planning and management of FL projects to ensure that the two aspects of learning are fully integrated

DEVELOPMENT

- o CO's are expected to carry out a detailed analysis of the knowledge, skills and competencies to be developed within a particular trade and to identify which lend themselves to a FL and which to a F-F mode
- o CO's are expected to demonstrate that they have collaborated with, at least, two organizations that will be providing the F-F delivery with regard to the detailed analysis referred to above
- o CO's are expected to document the results of the analysis and collaboration above
- o The VN will give priority to proposals for the development or use of advanced technologies such as digital simulations, Web 2.0 tools and incorporation/creation of open content, provided it can be shown that the proposed methods are relevant to training needs

DELIVERY

CO's are expected to select methods of delivery that best lend themselves to the nature of the topics being studied and will include the following:

- o Online delivery over the internet including:
  - asynchronous delivery of academic content in the form of text, animations, simulations, digital audio and video, discussion forums, the use of Web 2.0 tools (e.g. YouTube) by which students can demonstrate their skills
  - synchronous delivery in the form of demonstrations of the operation of equipment (both instructors and learners) and discussions through the use of web cams and audio
- o Use of "stand-alone" computer simulations and video demonstrations using CD-ROM's
- o Use of digital materials developed by other organizations delivered locally in colleges

INSTRUCTIONAL PLAN, continued

ASSESSMENT

- o Again, this needs to be evaluated at the outset of a project. Will the flexible delivery courses have the same learning outcomes/skills as traditional courses? (The use of technology may allow for the development of new skills, e.g. computer management of equipment). It will be important for the ITO's to be fully involved if either the form or content of assessment is to be changed to ensure that quality is as high, if not higher than, for traditional training. At the same time, assessment must reflect any new goals (e.g. a shift of emphasis from comprehension to problem-solving).
- o Secondly, how will students be assessed? Will the assessments of FL be carried out entirely on-line or will assessments take place in a supervised environment in co-operation with organizations close to the trainees' home?

STANDARDS

Standards for the development and delivery of flexible learning are critical to ensure a high level of content and presentation that responds to the unique needs of apprentice trainees.

Appendix D includes a draft set of standards that provide benchmarks for both the development and delivery of flexible learning in the trades. The standards have been developed specifically for the BC trades environment but heavy reliance has been placed on existing documentation:
- o Standards for Delivery of K-12 Distributed Learning in British Columbia (March 2006)
- o Canadian Recommended E-learning Guidelines, developed for HRDC Canada, January 2002

For example, the development section include standards that:
- o Utilize a variety of instructional approaches
- o Build on prior knowledge
- o Respond to the appropriate cognitive and memory load of the intended learner
- o Support the development of critical thinking skills
- o Include formative and summative assessment of learning
- o Include designs that capture the attention of the trainee
- o Include designs that promote the active engagement of the learner
- o Ensure that the structure of the interface and navigation is simple and intuitive

INSTRUCTIONAL PLAN, continued

The delivery standards include such critical issues as:
- o Ongoing and frequent communication between trainees and teachers
- o Trainee access to a community of learners
- o Adequate trainee support to ensure success
- o Instructional design that reflects best practices
- o Opportunity for trainee feedback about their learning experiences
- o Provide mixed modalities to address different student learning styles
- o Frequent and ongoing assessment

It is recommended that the Standards reflected in Appendix F be used as an interim document. Once the VN is in place, one of its first tasks will be to establish a process with all key stakeholders for reviewing, amending and validating the Standards.

KEY PROJECT OUTCOMES AND DELIVERABLES

The implementation of this Flexible Learning Business Plan will yield a significant number of qualitative and quantitative improvements in apprenticeship education.

On the qualitative side, these improvements include:

- o Increased satisfaction of trainees because they will, at least for a portion of their program, have an alternative way of completing their studies in a manner that reduces their time away from work, reduced expenditures for travel and accommodation and a much more flexible way of accessing and completing their course material
- o Reduction in the barriers to learning for those trainees who, because of distance or location, are unable to access course material through the normal channels available through various training institutions
- o Increased satisfaction for employers by reducing the need for trainees to be away from work for extended periods of time for training
- o Enhanced levels of computer skills for trainees that will be helpful to them both in their day-to-day work as well as in pursuing further levels of study; many courses and programs are now available primarily in a flexible learning mode
- o Enhanced economic competitiveness in the Province by increasing both the number of trainees enrolling in skills training as well as increasing success and completion rates (due to the availability of alternative modes of learning)
- o Development of a body of flexible learning expertise in the Province that will encourage partnerships and collaboration with other jurisdictions and, ultimately, enhance the Province's reputation nationally and internationally

KEY PROJECT OUTCOMES AND DELIVERABLES, continued

Evidence from the introduction of flexible learning into other forms and levels of education suggests that significant <u>quantitative</u> improvements can also be expected in the area of skills training. Appendices B and C provide what are considered to be relatively conservative estimates of the impact of the expansion of flexible learning on the number of trainees who will switch their learning preferences to a flexible mode, the number of additional trainees who will be drawn into apprenticeship training because of the availability of flexible learning and the increased number of completions.

The ultimate impact will be dependent on the number of programs that are developed/converted which, in turn, is dependent on levels of funding. Two scenarios have been developed: the first Scenario A reflects provincial funding only and the second Scenario B reflects funding at both the provincial and federal levels.

Projected results can be summarized as follows:

Scenario A Provincial Funding only	07/08 Base year	08/09	09/10	10/11	11/12	12/13
Number of FL programs **offered** (development work takes place a year earlier)	0	0	2	2	2	2
Base enrolment and normal growth at 5%/yr	39500	41475	43549	45726	48012	50413
# Trainees in programs offered in FL mode (included above)	n/a	n/a	3579	7353	11344	15570
# Trainees (base plus normal growth) converted to FL mode 0/10/15/20/25%	n/a	n/a	358	1103	2269	3893
Additional trainees drawn by availability of FL, 5%/yr	n/a	n/a	179	368	567	779
Total trainees in FL mode	**n/a**	**n/a**	**537**	**1471**	**2836**	**4672**
Increased completions resulting from availability of FL, 1 percentage point per year compounded on base of 42% and 4100 completions in 07/08	**n/a**	**n/a**	**113**	**233**	**359**	**492**

Thus, reflecting Provincial funding only, in the fifth year and with 8 programs developed/converted and offered to students, it is expected that 4672 trainees

KEY PROJECT OUTCOMES AND DELIVERABLES, continued

will be taking part of their programs in a Flexible Learning mode. There will be 492 more completions than would have been the case without a Flexible Learning mode.

Scenario B Provincial and Federal Funding	07/08 Base year	08/09	09/10	10/11	11/12	12/13
Number of F.L. programs offered (development work takes place a year earlier)	0	0	4	4	4	2
Base enrolment and normal growth at 5%/yr	39500	41475	43549	45726	48012	50413
# Trainees in programs offered in F.L. mode (included above)	n/a	n/a	7157	14707	22687	27534
# Trainees (base plus normal growth) converted to F.L. mode 0/10/15/20/25%	n/a	n/a	716	2206	4537	6883
Additional trainees drawn by availability of F.L., 5%/yr	n/a	n/a	358	735	1134	1377
Total trainees in F.L. mode	**n/a**	**n/a**	**1074**	**2941**	**5671**	**8260**
Increased completions resulting from availability of F.L., 1 percentage point per year compounded on base of 42% and 4100 completions in 07/08	**n/a**	**n/a**	**114**	**235**	**366**	**506**

Thus with both Federal and Provincial funding, in the fifth year and with 14 programs developed/converted and offered to students, it is expected that 8260 trainees will be taking part of their programs in a Flexible Learning mode. There will be 506 more completions than would have been the case without a Flexible Learning mode

While these projections represent goals at this stage, this Plan includes mechanisms to ensure that outcomes are achieved and measured.

PROJECT BUDGET AND FUNDING

Appendices D and E include a project budget under two funding scenarios:

Scenario A: Provincial funding only

Scenario B: Provincial and Federal funding

Scenario A reflects approved Provincial funding in the amount of $1.5 million per year for five years. Project management costs are estimated at $200,000 per year leaving $1.3 million per year for development. This level of funding is expected to permit the development and/or conversion of flexible learning material for 2 trades each year for a total of 10 trades.

The budget also reflects the cost of delivery for those trainees engaged in flexible learning activities, using an estimated cost of $1995. per trainee per year.

The cost of developing flexible learning materials per trainee can be calculated as follows:

Scenario A Provincial Funding only	07/08 Base year	08/09	09/10	10/11	11/12	12/13
A Development funding (expressed in $000's)	n/a	$1.3	$1.3	$1.3	$1.3	$1.3
B Carried forward to year program offered and cumulative	n/a	n/a	$1.3	$2.6	$3.9	$5.2
C Total trainees in F.L. mode, in year	n/a	n/a	537	1471	2836	4672
D Total trainees in F.L. mode, cumulative	n/a	n/a	537	2008	4844	9516
E Cost per trainee/year	**n/a**	**n/a**	**$2421**	**$1295**	**$805**	**$546**

PROJECT BUDGET AND FINANCING, continued

Scenario B Provincial and Federal Funding	07/08 Base year	08/09	09/10	10/11	11/12	12/13
A Development funding (expressed in $000's)	n/a	$2.6	$2.6	$2.6	$1.3	$1.3
B Carried forward to year program offered and cumulative	n/a	n/a	$2.6	$5.2	$7.8	$9.1
C Total trainees in F.L. mode, in year	n/a	n/a	1074	2941	5671	8260
D Total trainees in F.L. mode, cumulative	n/a	n/a	1074	4015	9686	17946
E Cost per trainee/year	**n/a**	**n/a**	**$2421**	**$1295**	**$805**	**$507**

Thus, costs per trainee/year decline as additional trainees enter the flexible learning environment. This will be offset, somewhat, as costs rise due to the need to upgrade and otherwise revise flexible learning materials..

RISKS AND MANAGEMENT OF RISKS

RISKS

While flexible forms of learning exist in the trades throughout the world and while many jurisdictions claim to have pursued this field successfully, a number of these initiatives are in the early stages of development. Moreover, each jurisdiction is motivated by differing factors with the result that delivery modes and quality vary greatly from one jurisdiction to another. In New Zealand, for example, flexible delivery is driven, at least partially, by the fact that the population is thinly scattered across the country with few trainees having ready access to a delivery institution. In the United States, the delivery of flexible learning has largely been assumed by large, national, private organizations. BC's aspirations in the expansion of flexible learning are unique and need to be driven by a model that serves the specific purposes of the Province and its citizens.

Just as BC will pursue a development and delivery model that will serve its own unique purposes, so will it face unique challenges and risks. Many of these risks revolve around institutional responsiveness, employer/ITO interest and support, quality of learning material, costs and the degree of uptake on the part of trainees. Expanding on each of these:

- o INSTITUTIONAL RESPONSIVENESS: Delivery institutions in BC have been pursuing flexible learning largely on their own, according to their own

RISKS AND MANAGEMENT OF RISKS, continued

- o assessment of the market and driven, at least partially, by the enthusiasm and expertise of individual teachers. The consortium approach contemplated in this Business Plan may not be an appealing model to BC's institutions in that it will require some measure of compromise: willingness to follow a Provincial assessment of priorities, adherence to Provincial standards, sharing of responsibility for support with a centralized agency; in other words, being part of a collective effort rather than autonomous
  action may be less than appealing to some institutions
- o EMPLOYER/ITO INTEREST AND SUPPORT: Employers/ITO's may be unwilling to support an investment in learning modes that may not be well understood by them and that may divert some portion of Provincial funding away from direct support for training through traditional modes of delivery.
- o QUALITY OF LEARNING MATERIAL: The quality of learning material varies across the Province and elsewhere and there has not been a long history of successful flexible learning, at least at the caliber contemplated by this Business Plan. There is a risk that the quality of the learning material developed under this initiative will be not be sufficient to move the Province forward in a significant way.
- o COSTS: There has not been a successful history of tracking of costs in the development of flexible learning material. The literature is filled with the reasons for this lack of cost accountability but the fact remains that few institutions are able (or perhaps willing) to provide a complete accounting of their costs and so there is some uncertainty about the full cost implications of developing quality, flexible learning materials.
- o TRAINEE UPTAKE: There is an expectation that the major benefits of the advancement of flexible learning accrues to trainees: more flexibility in pursuing their studies, less time away from work and the like; employers will enjoy the benefit of having their employees on the job longer. These benefits will only be realized if a sufficient number of trainees choose to pursue a portion of their studies in this way and there are few studies available (at least that have come to light to date) that project the degree to which trainees will take advantage of new forms of training.

MANAGEMENT OF RISKS

It is believed that each of the risks noted above can be managed so as to minimize its impact.

- o INSTITUTIONAL RESPONSIVENESS: The VN approach contemplates identifying consortia of institutions to take the lead on developing flexible learning material in one or more trades. This is likely to prove attractive to institutions that will enjoy the status of being part of a project consortium selected to provide leadership in a particular trade for the entire Province.

It is likely to raise their profile and reputation in the area of flexible learning. Also, the institutions will benefit from exposure to provincial standards which should help to inform other flexible learning developments within their own organizations. Finally, it is important to select institutions which have shown a strong interest in flexible learning and a willingness to work in a collaborative environment.

o EMPLOYER INTEREST AND SUPPORT: This Business Plan contemplates a process whereby all stakeholders, including employers, will be consulted, informed and engaged as the implementation of the Business Plan unfolds. Employers, through the ITO's, or other employer organizations where ITO's do not exist, will be requested to provide feedback on the proposed Business Plan. They will be kept informed through a series of meetings and other forms of communication. Once the Business Plan is in place, ITO's and employers will stay involved through the VN Management Committee as well as the proposed Project Assessment Committees for each trade. The initial focus for development should be with those industry clusters/ITO's that show the greatest amount of interest.

o QUALITY OF LEARNING MATERIALS: The quality of learning materials is expected to be high and there are a number of control mechanisms that will be in place to ensure this happens: (1) the institutions chosen to lead the development and delivery of flexible learning materials will be selected on a number of criteria including their expertise and history of success in developing such material (2) provincial standards for flexible learning in the trades will be in place to guide the selected institutions (3) focus on those trades where the unique features of flexible learning can best be exploited to improve the quality of training

o COSTS: Costs can be contained by focussing initially on a limited number of trades and by selecting those trades with substantial numbers of trainees. Budgets will be developed for each project based on a thorough analysis of benefits and costs using data from other projects within BC and from other jurisdictions. Contracts with successful bidding consortia will be clear on allowable costs and the deliverables associated with the project.

o TRAINEE UPTAKE: Trainee uptake will be encouraged through a number of avenues: information will be sent directly to trainees and their employers, information will be provided through various media releases; consideration may be given to providing incentives to trainees willing to try alternative modes of learning.

ACTION PLAN AND TIMETABLE

The following "Action Plan and Timetable" identifies the major tasks that need to be completed to implement the Flexible Learning Business Plan, the purpose of the task, who is responsible for ensuring completion and the date by which the task is to be completed.

The Schedule is very ambitious, particularly with regards to the activities to be accomplished by the Virtual Network within the first few months of its existence. It is expected that this Schedule will be refined and modified as the implementation phase progresses.

TASK	PURPOSE	RESPON-SIBILITY	COMPL'N DATE
Develop Business Plan, lst draft	Business Plan to incorporate: Operational Plan, Communications Plan, Funding Plan, Budget Plan, Action Plan and Timetable	Consultant	Jan 31/08 (done
Issue Expression of Interest document	Identify potential Host organizations	ITA/VCC	Feb 29/08 (done)
Presentation to Funding Sources	Solicit support, including funding	SC/ Consultant	Feb 29/08 (done)
Business Plan, 2nd draft	Business Plan to incorporate more specific growth targets	Consultant	Mar 19/08
Preparation of Summary Document of Strategy & related Business Plan (graphics, photos, etc.)	Provide a brief, informative, attractive overview of the Strategy to share with stakeholders and the general public	Consultant/ Graphics Profess'l (VCC?)	Mar 31/08
Presentations and mailings to various stakeholder groups: ITO's, Employers, Trainees, Development/Delivery Organizations	Ensure Business Plan has support	SC	Ongoing
Presentation to Board	Approval	Geoff Stevens	April 24 /08
Announce funding support	Funding approved to support implementation of Strategy/Business Plan	Funding source(s)	April 30/08

ACTION PLAN AND TIMETABLE, continued			
Issue Request for Proposals	Select Host organization	SCA/ITA	April 30/08
Create VN Management Board	Board oversees establishment of VN organization	SC/ITA	May 15/08
Create Virtual Network (within an existing "host" organization)	To provide structure to implement Strategy	Host Organization/ Mg't Comm.	June 15/08
Host organization hires/assigns staff	Ensure appropriate level and number of staff are hired/assigned to initiate planning processes	Host organization	July 15/08
Develop Protocol for the development and delivery of flexible learning	To set process in place to facilitate the development and delivery of flexible learning	VN	Aug 31/08
Develop Process for the identification of First Round of trades to be considered for the development of flexible learning	Specific trades identified	VN	Aug 31/08
Negotiate agreements with consortia to develop flexible learning materials in identified trades	RFP's issued/Consortia identified	VN	Sept 30/08
Learning management software acquired Infrastructure to support flexible learning material in place	Infrastructure in place to support flexible learning	VN	Dec 31/08
Flexible learning materials developed in 2 or 4 trades	Timely preparation of flexible learning materials	Dev/Del Institutions	Mar 31/09
Flexible learning options are offered in identified trades	Timely offering of alternative modes of learning	Delivery Institutions	May 31/09
Second Round of trades to be considered for the development of flexible learning	Build on experience of first round to expand number of trades in flexible learning mode	VN	June 30/09

STUDENT AND CONSORTIUM SCENARIOS

INTRODUCTION

The following are imaginary scenarios, designed to indicate possible ways in which the Virtual Network for Flexible Learning in the Vocational and Trades areas might work, both from a student and consortium perspective. However, in the end, the actual implementation will depend on the arrangements made by the consortium partners within a project, and may well vary considerably from the scenarios below.

SCENARIO A "ROBERT"

Robert is driving to the NorthWest Community College campus at Terrace to take his final examination in the Automotive Service Technician flexible learning programme. This is the culmination of five years hard work, starting first with high school completion done online through BC EdOnline, followed by flexible delivery of the Automotive Apprenticeship programme. It started when his Band education advisor drew his attention to the flexible learning programme. At the time, he had dropped out of school and was working part-time repairing tires at a tire company in Terrace. However, he had always wanted to be a 'proper' car mechanic.

When he finished his online high school courses, he enrolled in the NWCC/VCC/UCFV Consortium flexible learning program. He did most of the theory program online, initially using a computer in the band education centre, then later from home when he got his own computer. This was important, as he now had a wife and two children, and studying from home gave him more time with his family. Much of the problem-solving and fault diagnosis was also done online, using animations and simulations. He would drive into Terrace every Saturday afternoon for a four-hour practical workshop in NWCC's auto shop at the Terrace campus, with 11 other students in the flexible learning programme. He had an online instructor from VCC, as well as his workshop instructor from NWCC. His band counselor had also been valuable, especially when he was on the point of giving up because of the hard work.

NWCC/VCC/UCFV Consortium had, before applying for funding for the program from the VN, established a partnership agreement with 12 First Nations bands across the province. The First Nations bands would identify potential apprentices, provide local counseling and support, and technical assistance (computers, Internet access) where needed.

As soon as Robert was accepted into the programme, NWCC, working through the Automotive ITO, managed to place Robert as an apprentice with a GM car franchise in Terrace. Robert also found, through a social networking site provided

APPENDIX A, SCENARIOS, continued

as part of the course design, that there were almost 40 other First Nations students taking this program from around the province. Both he and his employer SCENARIOS, continued

were now looking forward to his becoming a fully qualified automotive service technician in a few weeks' time – provided he passed this final, supervised exam.

SCENARIO B "NANCY"

Nancy works for the Prince George branch of a 'handygal' company, called Mommas with Hammers, a 'gal owned, gal managed,' home and business repair and maintenance company. She had always been the 'handygal' in the family, but had not been able to combine a full-time apprenticeship program with being a single mother.

As soon as her daughter started school, Nancy went back to work. She is now taking the BCIT/College of New Caledonia/Northern Lights flexible learning electrician apprenticeship program, which is offered across the province, while working. Her boss at Mommas with Hammers set up the apprenticeship for her, when her boss learned about the programme from the local employers' organization.

Nancy does all the theory and some of the applications (using simulations of electrical circuits and equipment) online, and goes one evening a week to practical, hands-on sessions at the Prince George campus of the College of New Caledonia. This is her biggest challenge, because she needs to find a baby-sitter for the Tuesday night sessions. However, one night a week away from home is manageable.

Also, she lives in Quesnel, so being able to do the online study from home in evenings and weekends is really important. When she is qualified, with her boss's encouragement, she wants to extend the 'handygal service' into Quesnel and Williams Lake.

APPENDIX A, SCENARIOS, continued

SCENARIO C "AUTOMOTIVE SERVICE TECHNICIAN TRAINING CONSORTIUM"

The Automotive Training Standards Organization (ATSO) has determined that Automotive Service Technician Training will be the priority area for training by flexible learning. This is partly because the ATSO has negotiated a collaborative agreement with two large car manufacturers to work together on developing flexible learning for the automotive trades within the province.

A total of ten small colleges across the province and one larger urban college have developed a consortium to bid for the training contract. The larger college and three of the small colleges have in-house capacity for developing e-learning materials, but the proposal envisages out-sourcing most of the planned simulation material to a private e-learning company in Michigan that specializes in automotive industry training.

The consortium is requesting $500,000 from the VN, plus another $1.5 million from external sources (Federal grants, car companies), to build high-end simulations for fault-finding and repairs. The aim is to deliver approximately 70% of the automotive service technician training fully online, with the remaining 30% being delivered hands-on in shops in the colleges. (The urban college has negotiated agreements with several service companies and their employees to supervise trainees and use their facilities if the urban college cannot cope with local numbers). The 10 colleges will provide all the online instructors, as well as the hands-on instructors.

All of the VN funding will be used for the development of online training materials. Operating costs will be covered by the normal flow of funds from ITA and student tuition fees. The colleges have negotiated a revenue-sharing agreement to ensure that local delivery costs are covered. There is a complex revenue sharing agreement for royalties with all the partners (consortium members, car companies, province) on the sale of the materials that gives the colleges approximately 15% of royalties of out-of-province sales, and free use of materials within the province.

SCENARIO C "COOK TRAINING CONSORTIUM"

go2, the ITO for the tourism industry in B.C., has decided that cook training will be the first priority for funding for flexible learning within the industry. This is because of the shortage of qualified cooks within the province, the need to improve standards across the province, and because go2 has already developed curriculum and some online materials for cook training.

APPENDIX A, SCENARIOS, continued

A consortium of BC colleges and institutes involved in tourism and hospitality education have formed a consortium "LINKBC" with the intent of collectively developing.cook training materials using college instructors and a small e-learning training company that will provide specialist help with the design of the online materials, particularly animation, simulation and video demonstration. The on-line delivery will be coordinated by LINKBC through one of its partners, and all the member colleges will provide local cook training equipment, facilities and hands-on instructors. The colleges have agreed that they will be allocated 50% of the FTE funding and tuition fees for their local students. The remaining 50% will be used for the payment of online instructors.

go2 is requesting $500,000 from VN for the following:

- adaptation of existing online materials
- creation of new digital materials, including animations, simulations and video demonstrations
- formative evaluation

Some of the VN grant will be used to reimburse the e-learning company for their services.

The go2 online materials will be freely available to all colleges in BC wishing to use them for cook training, and the consortium will receive, and divide among themselves, 100% of the royalties for out-of-province sales.

SCENARIO D "CONSTRUCTION OPERATIONS CONSORTIUM"

BC Construction Industry Training (CITO), the construction industry ITO, has identified construction operations as the priority program area for flexible delivery, partly because of the need to recruit more people to the industry, partly to ensure that those without previous construction industry training understand basic site operations, and partly because this program area lends itself best to fully online delivery. Based upon a submission by CITO, the program has been approved by ITA as a new recognized Industry Training Program. Persons successfully completing the program will receive an ITA-issued Certificate of Qualification.

An institute of technology is already offering a multi-level studies program designed specifically for people who:
- wish to enter the construction industry,
- have industry experience and want to upgrade their skills,
- are active in some facet of the industry and wish to enhance their career potential, or
- wish to continue their ongoing education.

APPENDIX A, SCENARIOS, continued

Currently, this program is offered by the institute of technology only in the city and immediately surrounding areas, on a part-time basis, requiring attendance at the institute's main campus. The institute has applied to CITO and the VN to offer the program throughout the province of B.C. It has also signed a consortium agreement with 10 regional colleges in B.C.

The bulk of the new flexible learning program will be offered fully online. The institute and two of the regional colleges have already developed, between them, about 120 hours of online materials, used to supplement their on-campus programs. However, some elements of the program, such as site processes in construction, require local site visits, and "Computers in Construction", a short introductory course, will be available through supervised on-campus labs on an optional basis, aimed particularly at trainees who lack confidence or experience in using computers. Outside the city, the regional colleges and local employers provide supervised access and supervision for site visits and computer labs. In addition, students sit supervised examinations at the local regional college.

The consortium has established a curriculum development team, consisting of three instructors from the institute of technology, and one instructor from each of the two regional colleges that have already developed some flexible learning materials in this area. Also on the curriculum development team is an instructional designer and a web designer from the institute of technology, another instructional designer/web designer from one of the regional colleges, and a designer from a partner video games company. Finally, two of the other regional colleges have provided instructors for input and advice on delivery of the program. The task of the curriculum development team is to identify which of the current online material can be used or adapted, what new online material needs to be developed, and what competencies will be developed through site visits. The team works mainly online, using asynchronous and synchronous communication tools.

The consortium will use a learning management system that is common to two of the consortium partners who have already developed online materials. The material from the third college will need to be moved over to the common LMS.

The consortium has signed an agreement with a Vancouver video games company. The company will build a game based on a simulation of a construction site. Players accumulate points for successfully completing tasks covered in the curriculum. The game places a heavy emphasis on health and safety in the workplace. If a player breaks one of the health and safety rules in completing the tasks, the game is over, and the player must start again. The company aims to sell the games to construction companies across North America. The consortium gets access to the video company's simulation and animation expertise, and access to advanced games software (such as graphics for the construction site),

to support the development of the digital teaching materials, and access to the game when completed, which is then used as a form of continuous assessment during the program. In return the company gets some seed funding, access to content and opportunities to test the game with trainees.

The consortium is aiming for 800 enrolments in the first year, and therefore requires 30 online instructors, who will be drawn from the institute of technology and the 10 regional colleges. Construction sites for trainee site visits will be identified by the CITO, and the local colleges will work with the local construction company to arrange for on site training (on Saturday afternoons).The local colleges will also offer access to computer facilities on campus to local trainees who wish to use these facilities.

The consortium has requested $650,000 from the Virtual Network, for the following:

- to move materials from one of the colleges into the common LMS
- to develop new digital material not covered by existing materials
- to develop specific animations and simulations to improve the quality of existing and new materials
- to provide some seed funding for the video games company.

The consortium has agreed that one of the regional colleges, which already has an online registration system, will hold and maintain all student registrations for the program, and will provide 'shadow' registration data for each of the regional colleges indicating their 'local' students. The institute of technology will be responsible for marketing the program. All colleges in the consortium have agreed to recognize the credits from this program.

The consortium has also agreed to pool all revenues, including VN grant, FTEs, and tuition fees, and to reimburse each college according to their contribution to the project in terms of work hours/days, based on a business plan prepared as part of the request for funding to the VN. Royalties from the sale of materials outside the province are split between consortium members pro-rata to their contribution. The consortium receives 10% of royalties from the sale of the game in return for the seed funding provided by the VN and content contributions from consortia members.

SUMMARY, FLEXIBLE LEARNING GROWTH ACTIVITIES   APPENDIX B

SCENARIO A PROVINCIAL FUNDING ONLY	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
TOTAL ENROLMENT						
A BASE ENROLMENT	39500	39500	39500	39500	39500	39500
B NORMAL GROWTH, 5%/YR, CUM 5/5/5/5/5%	N/A	1975	4049	6226	8512	10913
C ADDIT'L "NEW" F.L. TRAINEES, 5%/YR, CUM 0/5/5/5/5	N/A	0	179	368	567	779
D TOTAL ENROLMENT A + B + C	39500	41475	43728	46094	48579	51192
ENROLMENT IN FLEXIBLE LEARNING						
E1 TRAINEES IN PROGRAMS CONVERTED TO F.L. INCL. GROWTH, 0/2/2/2/2 PROGRAMS @ 1700 PER PROGRAM	N/A	N/A	3579	7353	11344	15570
E2 TRAINEES CONVERTED TO F.L. BASE PLUS NORMAL GROWTH, 0/10/15/20/25	N/A	N/A	358	1103	2269	3893
F ADDITIONAL TRAINEES ATTRACTED BY F.L., 5% COMP'D	N/A	N/A	179	368	567	779
G TOTAL TRAINEES IN F.L., E2 + F	N/A	N/A	537	1471	2836	4672
H TOTAL TRAINEES IN TRADITIONAL MODE, D - G	N/A	N/A	43191	44623	45743	46520
I GAIN TO TRADITIONAL MODE H - A	N/A	N/A	3691	5123	6243	7020

J INCREASED COMPLETIONS RESULTING FROM

GROWTH AND "NEW TRAINEES"	N/A	205	439	684	942	1214
K INCREASED COMPLETIONS RESULTING FROM AVAILABILITY OF F.L.; 1 PERCENTAGE POINT PER YEAR (CURRENT COMPLETION RATE = 42%)	N/A	N/A	113	120	126	133
L INCREASED COMPLETIONS RESULTING FROM AVAILABILITY OF F.L., CUMULATIVE	N/A	N/A	113	233	359	492
M COST PER ADDITIONAL "NEW" F.L. TRAINEE (DEVELOPMENT/CONVERSION COSTS APPLIED IN YEAR PROGRAM IMPLEMENTED)	N/A	N/A	2421	1295	805	546

SUMMARY, FLEXIBLE LEARNING GROWTH ACTIVITIES   APPENDIX C

SCENARIO B / PROVINCIAL AND FEDERAL FUNDING	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
TOTAL ENROLMENT						
A BASE ENROLMENT	39500	39500	39500	39500	39500	39500
B NORMAL GROWTH, 5%/YR, CUM 5/5/5/5/5%	N/A	1975	4049	6226	8512	10913
C ADDIT'L "NEW" F.L. TRAINEES, 5%/YR, CUM 0/5/5/5/5	N/A	0	358	1093	2228	3604
D TOTAL ENROLMENT A + B + C	39500	41475	43907	46819	50240	54017
ENROLMENT IN FLEXIBLE LEARNING						
E1 TRAINEES IN PROGRAMS CONVERTED TO F.L. INCL. GROWTH, 0/4/4/4/2 PROGRAMS @ 1700 PER PROGRAM	N/A	N/A	7157	14707	22687	27534
E TRAINEES CONVERTED TO F.L. BASE PLUS NORMAL GROWTH, 0/10/15/20/25	N/A	N/A	716	2206	4537	6883
F ADDITIONAL TRAINEES ATTRACTED BY F.L., 5% COMP'D	N/A	N/A	358	735	1134	1377
G TOTAL TRAINEES IN F.L., E2 + F	N/A	N/A	1074	2941	5671	8260
H TOTAL TRAINEES IN TRADITIONAL MODE, D - G	N/A	N/A	42833	43878	44569	45757
I GAIN TO TRADITIONAL MODE H - A	N/A	N/A	3333	4378	5069	6257

J INCREASED COMPLETIONS RESULTING FROM **GROWTH AND "NEW TRAINEES"**	N/A	205	457	760	1115	1507
K INCREASED COMPLETIONS RESULTING FROM **AVAILABILITY OF F.L.; 1 PERCENTAGE POINT** **PER YEAR (CURRENT COMPLETION RATE = 42%)**	N/A	N/A	114	121	130	140
L INCREASED COMPLETIONS RESULTING FROM **AVAILABILITY OF F.L.,** **CUMULATIVE**	N/A	N/A	114	235	366	506
M COST PER ADDITIONAL "NEW" F.L. TRAINEE **(DEVELOPMENT/CONVERSION COSTS APPLIED** ** IN YEAR PROGRAM** **IMPLEMENTED)**	N/A	N/A	2421	1295	805	507

FINANCIAL PROJECTIONS   APPENDIX D

SCENARIO A / PROVINCIAL FUNDING ONLY

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
			(figures expressed in $000's)			
Project Preparation	150	0	0	0	0	0
Project Management	0	200	200	200	200	200
Program Develop/ Conversion	0	1300	1300	1300	1300	1300
Flexible Program Delivery*	0	0	1071	3292	6749	11541
Research, Eval'n Dissemination	0	0	0	75	75	75
Total, ITA funding	150	1500	2571	4867	8324	13116

* Delivery costs have been estimated at $1995. per trainee per year

FINANCIAL PROJECTIONS   APPENDIX E

SCENARIO B, PROVINCIAL AND FEDERAL FUNDING

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
			(figures expressed in $000's)			
Project Preparation	150	0	0	0	0	0
Project Management	0	500	450	400	200	200
Program Develop/ Conversion	0	2600	2600	2600	1300	1300
Flexible Program Delivery*	0	0	2143	6582	13496	20922
Research, Eval'n Dissemination	0	50	150	150	75	75
Total	150	3150	5343	9732	15071	22497
ITA cont'n	150	1575	3743	8157	15071	22497
Federal (WSI) cont'n	0	1575	1600	1575	0	0

* Delivery costs have been estimated at $1995. per trainee per year

Standards for
Flexible Learning for Trades Training
in British Columbia

Industry Training Authority   *December, 2007*

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Preface

Flexible learning (FL) is a choice within the current trades and vocational training system that responds to the unique learning needs of individual learners. FL combines traditional classroom or lab/shop experience with online learning, when a learner is primarily at a distance from the instructor and teaching institution. Learners may choose to enrol in flexible learning because they are living in remote locations and courses are not available to them, or due to scheduling conflicts for required courses. Learners may have previously started an apprenticeship programme, but not completed it. Flexible learning enables them to complete their qualification without giving up full-time employment. Lastly, some learners may prefer a flexible learning programme to a traditional programme. Learners in flexible learning programmes or courses usually have a choice of schedule, as course calendars are not bound by time and space. Recent years have seen an increase in the use of emerging electronic technologies in flexible learning such as simulations and the Internet, offering the possibilities for sophisticated, interactive, and engaging learning opportunities.

The standards in this document are intended to serve as a way to explain the fundamental components of flexible learning to deliverers and the public. It is also intended to serve as a guide for educators and content developers to understand the necessary considerations for developing quality resources for the flexible learning environment.

Introduction

Flexible learning (FL) standards in British Columbia for the delivery of FL and development of digital content to support that delivery are intended to explain fundamental components of flexible learning and to serve as a guide for educators and those developing quality resources for the flexible learning environment. These standards draw heavily on standards developed for K-12 Distributed Learning in British Columbia: http://info.sd42.ca/DL/PDFs/DL_Standards1.pdf. This document also draws on the Canadian Recommended E-learning Guidelines (CanREGs) developed for HRDC Canada in January 2002: http://www.futured.com/pdf/CanREGs%20Eng.pdf. The standards from the B.C. K-12 system and from HRDC Canada's document have been adapted in this document to the vocational and trades training sector.

Processes to create the B.C. K-12 standards began in the spring of 2005 after consultation identified that standards were necessary to guide and improve the quality of distributed learning in British Columbia. Development of the K-12 distributed learning standards began with an environmental scan of published standards for quality and content. Two working groups were created, one to develop standards for the fundamental components of a distributed learning program and one to develop standards for digital content used in a distributed learning environment. Both working groups researched standards developed globally and then chose a 'made in BC' approach that included involvement from DL school principals, educators, education content providers, the postsecondary sector, and industry. The standards were then vetted through distributed learning practitioners, focus groups, and posted publicly for review and feedback.

The Distributed Learning Standards were first published in June 2006 (version 1.7), and became part of the 2006/07 Distributed Learning Agreements signed between boards offering DL programs and the Ministry. In Spring 2007 a new

Review Team was formed to provide suggestions for further refinement and revisions. The review process included distribution of a revised draft document to all registered 2006/07 DL schools in the province.

The first section of the document identifies the fundamental components and standards for delivering a quality flexible learning program. The second section focuses on digital learning content standards for both educators and content providers. The standards are based on the literature available at the time of publication, and existing practice in the province. A full list of references used in the development of the standards can be found at the end of the document, and appendices provide reference and links to standards bodies.

This first draft is designed as a working document for further revision and amendment to fit the needs of the vocational and trades training areas in B.C.

Delivery Standards for Flexible Learning

Purpose

The delivery standards for flexible learning (FL) are intended to serve a variety of audiences and purposes:

For students, they will:

- clarify roles and responsibilities for instructors, students, and employers, and

- provide a framework to assist in the selection of a flexible learning course or program.

For instructors, institutional administrators, other delivery agencies and ITO's/employers, they will:

- assist delivery agencies in focusing on results-based decision making,

- provide a framework for accountability and continuous improvement,

- assist in communicating with the public,

- identify the elements of quality programs, and

- support professional growth in areas related to flexible learning.

For the Industry Training Authority/VN, they will:

- ensure FL is a quality option for BC students,

- inform the legislative, policy, and funding framework,

- focus on continuous improvement for quality programming,

- assist with evaluation of the program,

- assist in communicating with the public.

Organization

The Delivery Standards for Flexible Learning are organized into four categories, each of which reflects a critical aspect of education program delivery:

1. Student Services

2. Student Learning

3. Governance and Leadership

4. Regulatory and Legal Compliance

Each category is further divided into sub-categories within which standards are defined. Supporting evidence statements are included to illustrate how the standard could be applied. Quality flexible learning practice in vocational and trades training should meet or exceed these standards.

Delivery Standards for Flexible Learning

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
1. Student services	**1. 1 Communication - students**	1.1.1 Communication between students and instructors is ongoing and frequent.	*Two-way communication between instructors and students is ongoing and individualized.* *Communication utilizes a variety of modes including email, telephone, face-to-face, computer-mediated conferencing, discussion boards, and learner work submissions.*
		1.1.2 Students are provided with required educational program information prior to enrolment.	*Prospective students are informed of the skills required to be successful as flexible learners.* *Students are provided advance information about course requirements and resources.* *Expectations, roles and responsibilities of the employer, student and instructor are written and communicated to students.* *Information is posted on the Virtual Network web site.* *Opportunities for awards, scholarships, and work-based training options are communicated to students.*

Delivery Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
1. Student services (cont.)	**1. 1 Communication – students (cont.)**	1.1.3 Students are provided access to a community of learners. .	*Students have opportunities to work with peers on an ongoing basis (e.g. online through virtual classrooms, forums and discussion boards, and/or during face-to-face meetings and events).* *Group work activities are incorporated into flexible learning program instruction.*
		1.1.4 Effective strategies are used to engage students.	*Instructors monitor learner progress and engagement.* *Strategies are in place to encourage engagement of all students in their learning program.* *Additional strategies that include consequences for non-participation are used.*
	1. 2 Communication – employers	1.2.1 Communication between the student's employer and instructor is ongoing and frequent.	*The student's employer is provided with program information and expectations, and given the opportunity to provide feedback on the student's flexible learning experience.*
		1.2.2 The employer of a student in a flexible learning program is provided with required educational program information prior to enrolment.	*The student's employer is provided advance information about course requirements and resources.* *Expectations, roles and responsibilities of the employer, student and instructor are written and communicated to the employer.* *Information is posted on the VN web site.*

Delivery Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
1. Student services (cont.)		1.2.3 Strategies are in place to engage an employer in their employee's learning.	*Consultative meetings and two-way dialogue between employer and instructor occurs during such times as enrolment and reporting.* *Employers of students know about and have the opportunity to be involved in planning activities of flexible learners*
	1.3 Instructional Support	1.3.1 Students are provided with instructional support to be successful in a flexible learning environment.	*Registration, advising and program planning support are provided for all students, and a process for accessing services and resources is clearly communicated.* *Students are assessed for their ability to succeed in a flexible learning environment.* *Employers and students are aware of the process for accessing local and remote services and resources and that information is clearly communicated (e.g. an orientation handbook).* *Students access support services provided through the VN web site* *Students access program-approved resources and/or services, including counselling services, linked to their student learning plan.* *Students with unique needs are provided appropriate resources and services.*

Delivery Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
1. Student services (cont.)	**1.3 Instructional Support**	1.3.2 A clearly articulated student learning plan created by an instructor is in place for each student. The student learning plan references provincial and ITO approved learning outcomes and resources required to meet them.	*Registration processes include opportunities for students to complete a student learning plan or include reference to an existing student learning plan.* *Student learning plans are on file for all active students.*
2. Student Learning	**2.1 Pedagogy**	2.1.1 Instruction reflects current best and promising practices to enable quality learning experiences.	*Research is used to guide and influence the selection of instructional strategies for flexible learning programs.* *Instructors examine and adapt their instructional practice to maximize the benefits of the flexible learning environment.* *Student achievement and completion meets or exceeds provincial averages.* *Students are engaged in their learning program as active learners and demonstrate responsibility for their own learning.* *Student satisfaction survey results meet or exceed provincial averages for FL and F-F students.*

Delivery Standards for Flexible Learning, continued

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
2. Student Learning (cont.)	**2.2 Learning Environment**	2.2.1 The learning environment supports active engagement among learners and between student and instructor through asynchronous and synchronous strategies.	*Educational technologies are effectively deployed to support learning engagement and achievement.* *Regular instructor/student and student/student interaction occurs through a variety of means (e.g. face-to-face engagement, online synchronous and asynchronous communications, telephone, text/audio/video exchange, or instant messaging).*
	2.2 Learning Environment (cont.)	2.2.2 The flexible learning program provides learners with opportunities for face-to-face interaction as part of the student learning program as required, and if the student and/or employer identifies a need or opportunity.	*Student learning programs make use of, and learners have access to, learning institution, work-place, and/or community-based resources (e.g. workshops, equipment).* *Instructors use onsite, face-to-face instructional strategies where appropriate and possible.*
		2.2.3 Students have frequent opportunities to provide feedback on their learning experience.	*Formal student satisfaction feedback is used to improve the flexible learning program.* *Informal student feedback is solicited regularly.*
	2.3 Learning Activities	2.3.1 Instructors plan the learning activities for students.	*Activities are adapted and modified to meet individual needs and enable learners to represent their work in various forms.* *Activities address a variety of learning styles and provincial and ITO approved learning outcomes.*

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
			Delivery Standards for Flexible Learning, continued

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
2. Student Learning (cont.)	**2.4 Modalities**	2.4.1 Instructors incorporate mixed modalities to address different student learning styles.	*Instructors select and use content and activities that include multiple modalities (e.g. visual text and auditory options are provided).*
	2.5 Assessment	2.5.1 A qualified instructor assesses and evaluates student progress and, where appropriate, input from employer and student is incorporated in the assessment.	*A variety of formative and summative assessments are used.* *A range of strategies is used to evaluate student learning and assessment is integrated with learning activities.*
		2.5.2 Assessment is frequent and ongoing, and addresses provincial learning outcomes.	*Assessment makes use of appropriate technologies, is consistent with the BC Performance/ITO Standards where appropriate and supports learning by guiding instruction.*
		2.5.3 Assessment is practice and work-based, where this is appropriate	*Assessment makes use of community and employers' facilities wherever possible, under the supervision of local journeymen trained in assessment methods*
		2.5.4 Assessment balances continuous assessment with independently supervised end-of-course performance assessment	*An invigilation policy is in place for standardized tests, national or provincial assessments, and final exams.*

Delivery Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
3. Governance and Leadership	**3.1 Provincial management**	3.1.1 The Industry Training Agency (ITA) has a rationale and a vision for flexible learning for trades training	*The ITA includes flexible learning in its strategic planning process* *The ITA provides support and resources for flexible learning*
		3.1.2 The VN uses student, employer and provincial-level data to improve program quality	*The VN considers student, employer and provincial level data when refining the flexible learning program choices and experiences for learners.*
		3.1.3 The VN works closely with employers, through the ITOs, to set priorities and to improve the quality of flexible learning for the trades area	*The VN establishes appropriate consultative and decision-making mechanisms with the ITOs for deciding priorities and resources for flexible learning* *The VN seeks feedback from employers on the quality of flexible learning programs*
		3.1.3 The VN works closely with the provincial colleges and private sector organizations to facilitate the implementation and evaluation of flexible learning programs	*The VN establishes appropriate funding mechanisms to enable colleges and private sector organizations to develop and deliver high quality flexible learning programs within the province* *The VN establishes or approves appropriate mechanisms for the evaluation of flexible learning programs within the province*

Delivery Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
3. Governance and Leadership (cont.)	**3.1 Provincial management (cont.)**	3.1.4 Instructors have sufficient skills and knowledge to effectively meet the flexible learning standards	*Program directors and instructors understand the skill sets, processes and resources required to deliver a quality flexible learning program* *A requirement of project funding is that the program director and lead instructors are familiar with teaching and learning in a flexible learning environment* *Project funding is limited to colleges and private sector organizations that have provided professional learning opportunities relevant to flexible learning*
		3.1.5 Flexible learning programs follow best practice in project management	*Funding for program development and delivery is allocated to projects that have a defined target audience, a clear description of the methods of and schedule for program development, delivery, maintenance and evaluation, and a budget that includes possible revenues as well as expenditures over a five year period.*
		3.1.6 The ITA establishes a governance mechanism for facilitating flexible learning within the province	*The ITA has identified and appointed appropriate partners and organizations to manage the implementation of a flexible learning strategy,* *The ITA has established a Management Committee with responsibility for managing the ITA's strategy for flexible learning* *The Management Committee has engaged a full-time Director who meets on a regular basis with key stakeholders, who oversees the management of funds, who supervises any additional staff, and who provides an annual report to the ITA on flexible learning activities within the province.*

Delivery Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
3. Governance and Leadership (cont.)	**3.2. Regional operations**	3.2.1 Site, equipment and learning resources are sufficient to meet the flexible learning standards.	*Projects have the regional infrastructure and resources to support flexible learning program requirements (e.g. hardware and software purchases and upgrades, funding to support unique needs of instructors and local supervisors)*
		3.2.2 Records administration process, budget, and staffing are sufficient to support the flexible learning program.	*The majority of funds generated through enrolment in flexible learning programs are used to support the learning program and obtain resources for it.* *Where program funding applies, there is evidence of additional services or support provided to the flexible learning student.* *Flexible learning projects are appropriately staffed to support student demand.*
		3.2.3 Project directors ensure that the collection, use, and disclosure of personal information are in compliance with the Freedom of Information and Protection of Privacy Act.	*Policies and processes that ensure compliance with the Freedom of Information and Protection of Privacy Act and other pertinent legislation are in place.* *Freedom of Information requests are administered in compliance with the Freedom of Information and Protection of Privacy Act.*

Delivery Standards for Flexible Learning, continued

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
4. Regulatory and Legal Compliance	**4.1 Ministry Policy and Legislation**	4.1.1 Each flexible learning project complies with Ministry legislation, policy and requirements, and ensures all the requirements of college and employer regulations are met.	*The Industry Training Act, FL policy, and FL Agreement requirements are met by the FL project* *Student learning plans demonstrate how required areas of study at each training level will be, or have been, met.* *Student achievement data is submitted to ITA and student reports and permanent records cards are maintained.* *Students participate in examinations, Foundation Skills Assessments and Satisfaction Surveys.*

Digital Learning Content Standards for Flexible Learning

Purpose

Digital learning content encompasses electronic learning resources developed for use in both flexible learning environments and regular classrooms. It is comprised of individual "learning assets" that are linked to specific learning outcomes in the curriculum. The digital learning content standards set out a procedure for the development or procurement of learning assets in course materials suitable for flexible learning. The standards are intended to guide development and design of new content and the evaluation of existing content. The intended audience includes:

- Instructors to assist with the selection, adoption and use of the most appropriate digital learning content to meet student needs;
- Students and employers to support understanding of flexible learning materials in use in flexible learning programs;
- Digital learning content providers (e.g., commercial and non-commercial publishers) to guide the development of digital content;
- Digital learning content developers (e.g., publishers, institutions and educators) to ensure that products developed meet digital learning content standards and requirements;
- Distributors (e.g., course management software companies) to ensure digital learning content provided conforms to the standards and requirements; and
- Procurement officials, to ensure the efficient and cost-effective obtainment of digital learning content for use in teaching and learning.

These standards form a baseline and foundation within an evolving and changing digital learning environment in British Columbia, Canada and internationally. Accordingly, the standards will be subject to review and refinement.

Organization

Digital learning content standards have been organized into four categories:

5. Instructional Design
6. Visual Design
7. Copyright
8. Technical

Each category is further divided into sub-categories within which standards are defined. Supporting evidence statements are included to illustrate how the standard could be applied. Digital learning content for use in BC trades and vocational training programmes should meet or exceed these standards.

Digital Learning Content Standards for Flexible Learning

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
5. Instructional Design	**5.1 Content**	5.1.1 Presentation utilizes a variety of instructional approaches appropriate to intended learning outcomes and audience.	*Design elements offer the learner variety in their engagement with the content.* *Design varies and includes a variety of instructional approaches.*
		5.1.2 Design addresses the principles of learning.	*Design enables active participation, accommodates a variety of options for the learner including individual and group activity (see British Columbia Principles of Learning for more information).*
		5.1.3 Design addresses Provincial/ITA approved learning outcomes.	*Content addresses appropriate BC Program Outlines (curriculum).*
	5.2 Learner performance	5.2.1 Design activates prior knowledge of the learner.	*Content uses advance organizers to trigger prior knowledge and create previews of material.*
		5.2.2 Design is suitable to the cognitive and memory load of the intended learner.	*Content is designed to avoid overload of cognitive processes/ memory load of the learner.* *Content uses visuals or audio to replace text where appropriate and possible, and words or graphics alone are used when material is self-explanatory.*

Digital Learning Content Standards for Flexible Learning, continued

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
5. Instructional Design (cont.)	**5.2 Learner performance (cont.)**	5.2.3 Design supports the building of mental models.	*Content uses appropriate media (organizational, transformation, relational, interpretive) to assist the learner in building deeper understanding.*
		5.2.4 Design supports the transfer of learning.	*Content uses representational media to support transfer of learning to applied or personal contexts.*
		5.2.5 Design meets cognitive, emotive and psycho-motor requirements of training	*Content uses appropriate media (animation, simulations, hands-on access to equipment, social contact, etc.) to assist learner to develop appropriate cognitive, emotive and psycho-motor competencies*
		5.2.6 Design supports development of critical thinking skills	*Content encourages learners to think analytically and apply intellectual standards.* *Content promotes the use of problem solving, questioning, analysis and reasoning.*
	5.3 Assessment	5.3.1 Design includes formative and summative assessment of the learning using a variety of methods.	*Assessment is frequent and linked to provincial learning outcomes.* *Criterion referenced, self and peer assessments are used.* *Summative assessment and criteria of that assessment provide learners the opportunity to demonstrate appropriate skills and understandings, meta-cognitive and reflection strategies.*

Digital Learning Content Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
5. Instructional Design (cont.)	**5.4 Supporting information**	5.4.1 Information and support materials for learners and educators are provided.	*Implementation strategies for use of the content are articulated and provide detailed information, instructor direction and support information, such as help files and documentation.* *Design includes responsibilities of learners and the relationship of activities and assessments to learning outcomes.*
	5.5 Engagement	5.5.1 Design captures the attention of the learner.	*Content uses prompts to draw attention and reveal complex content gradually.* *Visual and auditory stimuli (e.g. still and moving images, diagrams and illustrations, animations, simulations, narrations, music and/or sound effects) are employed to promote student interest.*
		5.5.2 Design promotes the active engagement of the learner.	*Active engagement is supported through the use of a variety of media and resources.* *Design enables ongoing interaction between learner and content, among learners and between the student and educator.* *Design stimulates student creativity and imagination through a variety of approaches (e.g. through humour, challenge, and/or relevancy).*

Digital Learning Content Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
6. Visual design	**6.1 Interface**	6.1.1 Structure of the interface and navigation is simple and intuitive	*Navigation aids (menus, icons, identifying graphics) are consistently and clearly positioned on-screen, predictable and consistent in style and function.* *Mouse-over icon information and help files for learners and educators are included.* *All clickable objects are identified through the use of labels, borders, or instruction in text as appropriate.*
	6.2 Layout	6.2.1 Content layout is consistent, and material is accessible and clear to learners.	*Content uses colour to support visual search and minimizes decorative visuals to avoid divided attention of the learner.* *Content layout design elements (rules, borders, headings, captions, etc.) are consistent and white space is used to provide visual relief.* *Graphics are relevant as well as consistently identified, labelled, and described.* *Text is organized into readable paragraphs and colors are legible over background colors.* *Font formats that interfere with screen readability are avoided and no more than three universally accessible fonts are used within the content.*

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE

Digital Learning Content Standards for Flexible Learning, continued

CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
7. Copyright	**7.1 Information**	7.1.1 Content is used in accordance with the Copyright Act and other legally recognized licenses and permissions, and the information required under the Act is included with the content.	*Content is used in accordance with the Copyright Act, and any other legally recognized licenses and permissions that have been entered into in regards to the content, notwithstanding the exceptions to the Act* *Content licensing details are stated in easily understood wording, including a description of when the license expires, where it may be used and by whom.* *Content includes complete information about the rights that the copyright owner has assigned in regards to the content, and the content contains complete information on the author(s) of the content, respecting the right of authors to use a pseudonym or to remain anonymous if so desired.* *Content includes information about the location and nature of source code required to modify the content.*

	Digital Learning Content Standards for Flexible Learning, continued		
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
7. Copyright	**7.2 Licensing**	7.2.1 Licensing allows instructors and students to store and share content, and for educators to distribute content in a British Columbia.	*Licensing uses appropriate licensing structures such as Creative Commons, BCcampus' BC Commons, or other licensing approach.* *Users have the right to modify the content to meet individual learner and educator needs, except where third party agreements restrict this.* *Educators and students have the right to use the content in the classroom or at home.* *Users have the right to make one copy of the content in any medium such as print or CD for the purposes of research or private study.*
		7.2.2 Content provides the terms of use for the user license.	*A User License to explain how the content may be used and any restrictions that might apply in its use is provided.*

Digital Learning Content Standards for Flexible Learning, continued			
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
8.1 Technical	**8.1 Accessibility**	8.1.1 Hardware and software requirements for accessing and using content are explicitly stated.	*Information about content specifies minimum and recommended technical requirements.* *Required third party software and resources are either readily accessible or built into the content (e.g. links to media players, portable document format (PDF) readers, and Flash players are provided).* *Content is tested for conformity to* *W3C web content accessibility guidelines* *as required.*
		8.1.2 Media files are formatted for accessibility from commonly used computer platforms and commonly available internet connectivity.	*Media formats are those in common use.* *Video, animation, and sound file formats can be played on freely-available and commonly used plug-ins or players.* *Alternate versions of content are provided for required video or sound files.*
		8.1.3 Text files are formatted for accessibility to all learners.	*Learners can print or save text material.* *Learners can view text on a computer monitor or printed page.*
		8.1.4 Text displays within commonly used browsers.	*Learners can view text within their browser window.*

	Digital Learning Content Standards for Flexible Learning, continued		
CATEGORY	SUB-CATEGORY	STANDARD	SUPPORTING EVIDENCE
8.1 Technical (cont.)	**8.2 Interoperability**	8.2.1 Content has a consistent and specified electronic file structure for interoperability.	*Content is organized in a logical format, and a common electronic file structure is used consistently throughout to organize text and media objects.*
		8.2.2 Content is tagged and labelled for archival and retrieval purposes.	*Metadata tagging standards and specifications are used in labelling so that content is searchable from learning management systems, learning object repositories, and learning content management systems.*

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Appendix One: Glossary of Terms

For the purposes of this document, the following definitions are provided:

1. *Cognitive Load*: The mental work imposed by a learning environment or object. Since we have limited mental capacity, content needs to be designed so as not to overload our cognitive processes nor impose mental work that is irrelevant to the learning goals. For more information on cognitive load see *Efficiency in Learning* by R.Clark, F Nguyen and J. Sweller.

2. *Course*: An accredited unit of curriculum.

3. *Curriculum*: Covering an overall concept, curriculum is approved and specific content that covers knowledge, skills, and attitudes as prescribed learning outcomes, generally offered by an institution such as a college as a course.

4. *Guidelines*: Suggested or recommended approaches. Guidelines are speculative and assume certain conditions that may not apply in all situations. A guideline is a "suggest".

5. *Instructional Design*: Systematic method of planning, developing, evaluating and managing instruction to ensure competent performance by the learner.

6. *Learning Architecture:* Learning architecture refers to the technical structure of a learning system that enables the exchange of data with other data systems (interoperability).

7. *Learning Asset*: A reusable digital entity accessible to a learner

8. *Learning Content*: Assembly and aggregation of discreet learning objects designed to meet intended learning outcomes. Content is a specific package of material for use in an overall curriculum.

9. *Learning Object*: A learning asset or assets designed to address an intended learning outcome(s).

10. *Learning Outcomes:* The prescribed learning outcomes set the learning standards for the provincial trades training system and form the prescribed curriculum for British Columbia. They are statements of what learners are expected to know and do at the end of an indicated grade or course.

11. *Performance Standards:* A set of provincially-approved classroom assessment resources developed and tested by educators, which describe levels of achievement in key areas of learning. The standards focus exclusively on performance assessment. In performance assessment learners are asked to apply the skills and concepts they have learned to complete complex, realistic tasks. This type of assessment supports a criterion-referenced approach to evaluation and enables educators, students, and parents to compare student performance to provincial standards.

14. *Metadata:* Metadata is a set of words or phrases that summarizes the 'who, what, where, when and why' of a learning object (content). Metadata keywords label the ideas that are implicit in the learning object, much like a library classification system. Metadata information is not visible to a person looking at the learning object, but is to an LMS or LCMS.

15. *Modalities*: There are three basic modalities to process information to memory: visual (learning by seeing), auditory (learning by hearing), and kinesthetic (learning by doing). Most people have one predominant modality, but some have a balance between two or even all three. Many learners are aware of their preference, which helps them approach their own learning more efficiently. Effective teaching requires a variety of teaching methods which cover all three learning modalities. No matter what their preference, learners should have equal opportunities to learn in a way that is effective for them.

16. *Standards*: Document descriptions that have received a stamp of approval or accreditation from an authorized body. Standards tend to go through a relatively slow evolution, are conclusive and complete, and are criteria specific. A standard is a "must".

17. *Synchronous/Asynchronous:* Learners can collaborate through a variety of communication and conferencing tools in real time allowing them to connect at a single point in time, at the same time (synchronously), or in a series of independent exchanges over a period of time allowing them to connect together at each other's own convenience and own schedule (asynchronously).

Communication tools are used to send messages, files, data, or documents between people and hence facilitate the sharing of information.
Examples include:

        a. e-mail (asynchronous)

        b. instant messaging (synchronous)

        c. faxing (asynchronous)

        d. voice mail (synchronous)

        e. Web publishing (asynchronous)

Conferencing tools are used to facilitate the sharing of information, but in a more interactive way.
Examples include:

- data conferencing — networked PCs share a common "whiteboard" that each user can modify (synchronous)
- voice conferencing — telephones allow users to interact (synchronous)
- video conferencing (and audio conferencing) — networked PCs share video or audio signals (synchronous)
- Internet forums (also known as message boards or discussion boards) — a virtual discussion platform to facilitate and manage online text messages (asynchronous)
- chat rooms — a virtual discussion platform to facilitate and manage real-time text messages (synchronous)
- electronic meeting systems (EMS) — a conferencing system built into a room. The special purpose room will usually contain a large screen projector interlinked with numerous PCs. (synchronous)

18. *Visual Design*: Visual design of the user interface and layout of the content.

Appendix Two: Flexible Learning Standards and Specifications

The development of accredited standards reduces risk for organizations making investments in flexible learning technologies and content. Standards compliance assures data systems will be able to work together and that investment in time and intellectual capital is not lost. Standards ensure content is interoperable on any learning delivery system, enabling its reuse. Flexible learning standards and specifications define frameworks for enabling the sharing and exchange of learning objects (content) and management system information (data) – or the technical integration of learning objects and their interoperability within delivery platforms.

Standards Regulatory Organizations

There are a number of standards bodies. Several of the more prominent ones in the distributed learning and the e-learning field include:

- Canadian Core Learning Resource Metadata Application Profile (CanCore)
- Aviation Industry CBT Committee (AICC)
- IMS Global Learning Consortium (IMS)
- Advanced Distributed Learning Consortium (ADL) and Sharable Courseware Object Reference Model (SCORM)
- Institute of Electrical and Electronic Engineers Learning Technology Standards Committee (IEEE - LTSC)
- Schools Interoperability Project (SIF)

IMS is emerging as a superset of all of the differing standards and provides a structural framework for the development of learning architecture. SCORM, based on AICC and the IMS specifications, is emerging as the leading standard for content and provides a common technical framework that fosters the creation of reusable learning objects. While these standards guide common use of digital content, and how it is presented and used in flexible learning programs, strict adoption of these international standards can limit BC educators' ability to use a variety of instructional support materials for learners at a distance. Accordingly, it is intended that such standards guide the development of new, shared content, rather than limit educators in their ability to use a variety of resources to support learning in flexible learning programs.

Standards have been applied to the architecture of learning management systems (LMS) and learning content management systems (LCMS), as well as the development and metadata tagging of learning objects for presentation on these systems. Learning architecture standards set specifications for how to exchange data with other learning systems and database programs (library resources, demographic or records information systems), and providing an

environment to locate, manage and deliver learning objects. Learning object standards set specifications for metadata tagging (how to make information about the learning object visible such as name, publisher, learning objectives, description of the content), and how to integrate with a learning system (track learning, set mastery level, assess and report on the learning that occurs utilizing the learning objects). The benefits of learning architecture and learning object standards and specifications to date have been the ability to use learning objects from any compliant publisher or developer, data interoperability among different learning systems and database platforms, and the ability to easily use and manage learning objects as resources.

Appendix Three: Learning Standards Bodies

Aviation Industry CBT Committee (AICC)

http://www.aicc.org/index.html

- The Aviation Industry CBT Committee (AICC) is an international association of technology-based training professionals. The AICC develops guidelines for the aviation industry in the development, delivery, and evaluation of CBT and related training technologies. The AICC has developed methods that allow learning management systems to exchange information and track the results of contents.

Shareable Courseware Object Reference Model (SCORM)

http://www.adlnet.org/

- The Advanced Distributed Learning (ADL) initiative began in 1997 to develop an open architecture for online learning. Its purpose was "to ensure access to high-quality education and training materials that can be tailored to individual learner needs and made available whenever and wherever they are required." The ADL Shareable Courseware Object Reference Model (SCORM) specification provides a common technical framework for computer and web-based learning that will foster the creation of reusable learning content as "instructional objects." SCORM is based on AICC and the IMS Global Learning Consortium specifications. The ADL provides interoperability testing laboratories and will eventually establish a certification program.

Learning Technology Standards Committee (LTSC)

http://ieeeltsc.org/

- The Learning Technology Standards Committee (LTSC) is part of IEEE that is a formal standards body, meaning that they can produce standards with legal standing. The formal standardization process is generally based on existing process; in the case of the LTSC, the other organizations listed here provide input. The LTSC itself is comprised of several working groups that are developing technical standards, recommended practices, and guides for software components, tools, technologies and design methods that facilitate the development, deployment, maintenance and interoperation of computer implementations of education and training components and systems.

IMS

http://www.imsproject.org/

- The IMS Global Learning Consortium represents a number of large and small educational institutions, training organizations, government and software vendors interested in incorporating learning resource metadata into their software products. IMS is developing and promoting open specifications for facilitating online distributed learning activities such as locating and using educational content, tracking learner progress, reporting learner performance, and exchanging student records between

administrative systems.

Schools Interoperability Framework (SIF)

http://www.sifinfo.org/

- The Schools Interoperability Framework (SIF) is an industry initiative to develop an open specification for ensuring that K-12 instructional and administrative software applications work together more effectively. SIF is not a product, but rather an industry-supported technical blueprint for K-12 software that will enable diverse applications to interact and share data seamlessly, now and in the future.

Canadian Core Learning Resource Metadata Application Resource (CanCore)

http://www.cancore.ca/en/

- The CanCore Initiative was established in November 2000 to address common concerns regarding information management and resource discovery within a number of CANARIE-sponsored Elearning projects in Canada. The key concern was to synthesize efforts with respect to metadata creation and sharing. Since its inception, CanCore has conducted research into the field of learning object metadata, devised a workable, consensual sub-set of the IMS learning Object Meta-data Information Model, known as the CanCore Element Set, become a participant in IMS through the sponsorship of Industry Canada, developed informal ties with Dublin Core, written and presented numerous papers in the field of learning object metadata, created an XML-record bank showcasing sample CanCore records, and written The CanCore Learning Resource Metadata Profile Guidelines.

Appendix Four: Links to Other e-Learning Standards Websites

Centre for Educational Technology Interoperability Standards

http://www.cetis.ac.uk/

- CETIS represents UK higher education and further education institutions on international learning technology standards initiatives.

Eduspecs

http://eduspecs.ic.gc.ca/pub/overviewofspecifications/index.html

- Industry Canada's EduSpecs Initiative is Canada's contribution to technical specifications and standards for Elearning. The underlying vision is to provide Canadians with universal access to quality on-line education and training resources to support their individual and collective learning needs and interests.

e-Learning Standards Advisory Council of Canada

http://elsacc.ca

- The e-Learning Standards Advisory Council of Canada enables different provinces to work together to identify common requirements of their respective educational systems and to communicate requirements to those who develop standards. As there are multiple standards in development, eLSACC was intended to ensure standards being developed meet Canadian needs. eLSAAC was initially supported by the Minister of Education of Quebec and Council of Ministers of Education of Canada. Five provinces, including British Columbia, have agreed to fund eLSAAC for a five-year period.

International Organization for Standardization

http://www.iso.org

- The International Organization for Standardization (ISO) is a global network that identifies what international standards are required by business, government and society, develops them in partnership with the sectors that will put them to use, adopts them by transparent procedures based on national input and delivers them to be implemented worldwide. ISO standards specify the requirements for state-of-the-art products, services, processes, materials and systems, and for good conformity assessment, managerial and organizational practice.

Merlot

http://www.merlot.org/

- MERLOT is a free and open resource designed primarily for faculty and students of higher education. Links to online learning materials are

collected here along with annotations such as peer reviews and assignments.

National Institute of Standards and Technology

http://www.nist.gov/

- NIST is a non-regulatory federal agency within the U.S. Commerce Department's Technology Administration. NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

Open Geospatial Consortium

http://www.opengeospatial.org

- The Open Geospatial Consortium, Inc. (OGC) is a non-profit, international, voluntary consensus standards organization that is leading the development of standards for geospatial and location based services. OGC works with government, private industry, and academia to create open and extensible software application programming interfaces for geographic information systems (GIS) and other mainstream technologies.

The eLearning Guild

http://www.elearningguild.com/

- The eLearning Guild is a Community of Practice for e-Learning design, development, and management professionals. Through this member driven community high-quality learning opportunities, networking services, resources, and publications are shared. Members represent a diverse group of managers, directors, and executives focused on training and learning services, as well as e-Learning instructional designers, content developers, web developers, project managers, contractors, and consultants. All members share a common interest in e-Learning design, development, and management.

www.StandardsLearn.org

http://www.standardslearn.org

- Since its launch in 2002, www.StandardsLearn.org has become the premier online resource for public information e-learning programs that help to raise the awareness of standards and conformity assessment programs. Content on this site highlights the value and importance of participation in the national and international standards.

BusinessPlanRev080402.doc