

# Enriching our Future

A Strategic Plan for Saint John Post-Secondary Education,  
Research / Development and Commercialization



## **EXECUTIVE SUMMARY**

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Under the knowledge society paradigm, economic prosperity is inextricably linked to an innovative, entrepreneurial culture dependent on human knowledge, skills and talent. Excellence in post-secondary to propel higher levels of educational attainment is a critical success factor in developing a globally competitive economy and community.

Achieving post-secondary excellence is neither simple nor inexpensive; the marketplace, crowded with both public and private providers, is intensely competitive with jurisdictions, institutions and companies investing millions. Saint John achievement of national, let alone international, positioning based on current capacity is unrealistic. To get a foothold, the Greater Saint John Region and its post-secondary sector must be bold and dramatic in engineering massive transformation in a very short time. And even then, sustainable success will be contingent on significant supports by the Government of New Brunswick and new, robust and meaningful relationships and partnerships with industry and business.

The proposed Saint John post-secondary strategy is premised on creation, development and management of a unique, singular *Knowledge and Technology Institute* that merges current UNB Saint John, NBCC Saint John Campus and Saint John College with an education and research focus on Energy/Advanced Manufacturing and Health Sciences. Key differentiators of the *Institute* to advance national positioning are seamlessness of degree, diploma and certificate programs, year round 24/7 accessibility, embedded technology, innovation, entrepreneurship and leadership, integration of carefully structured community engagement/work/research experiences that culminate in high employability prospects and four integrated applied research Centres of Excellence.

Commitment to higher education is not an option for Saint John, it is a necessity. Mediocrity is, likewise, not an option: global competitiveness demands excellence as a community and excellence in higher education.

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## **STRATEGY CONTEXT**

## STRATEGY CONTEXT

Communities around the world recognize that economic competitiveness and social integrity are inextricably linked to a highly skilled and educated workforce. Under the knowledge society paradigm, education is the vital link to generating human talent and innovative ideas required for a community to compete in the global environment. Specifically, *excellence in post-secondary education and knowledge discovery*, are the distinguishing features of communities positioned to excel in the evolving knowledge and technology era. New Brunswick has only to look at select models of economic success: Ireland, for example, was one of Europe's poorest countries but today is as prosperous as the European average and continuing to improve for a host of very strategic reasons. In particular, Ireland focused on developing a well-educated workforce especially at the upper end and today possesses a much higher proportion of people in their 20's and 30's with post-secondary qualifications. Education is such a high priority that teachers are paid more in relation to average earnings than in any other OECD country<sup>1</sup>. Innovation and technology have been critical to Finland's success as the 2<sup>nd</sup> most competitive economy in the world<sup>2</sup>: a result of good institutions and macro economic management coupled with world class primary and higher educational attainment.

While the causative concepts surrounding a knowledge economy are well understood, few appreciate the underlying need for *excellence* in knowledge discovery and development of human capital. Mediocrity is a poor, costly and sluggish strategy that flies in the face of today's requirements for an entrepreneurial culture that embraces innovation and technology.

Entrepreneurial human talent is the key resource today that attracts other forms of capital investment and economic growth. Competitive pressures are global in scope and both developed and evolving economies are competing for the best people and best ideas. Indeed, excellence in today's world is not just a good idea – it is a necessity.

Saint John recognizes this global reality and is looking to position itself within the highly competitive global context. As such, Saint John has identified excellence in post-secondary education as elemental to its long range success.

## THE IMPACTS ON POST-SECONDARY

The urgency for ever-increasing higher levels of education and knowledge discovery at the very point in time as developed countries are experiencing declining and aging populations is putting incredible social and economic pressure on post-secondary institutions. Intensity of the highly competitive

national and international post-secondary markets is expected to escalate even further in the continuous search for the best students, educators and researchers to fuel 21<sup>st</sup> century economies.

Achieving post-secondary excellence requires **unprecedented** collaborations, partnerships and investments. Lead post-secondary institutions/schools that **pull** first class, competitive and diverse students succeed because of eight integrated factors:

- A global orientation: not limited to a community, a region, a province/state or country.
- A **unique focus** that is sustainable.
- Transformational learning experiences
- Superlative educators and researchers with global knowledge, experience and connections.
- State-of-the-art infrastructure that is a competitive edge.
- Strong local, national and international relationships into/across educational, research/development and innovation spheres.
- Scholarship funding to recruit top students.
- Aggressive leadership to drive excellence.

## **IMPLICATIONS FOR SAINT JOHN POST-SECONDARY**

The Saint John post-secondary sector has a formidable challenge: New Brunswick has niche recognition related to UNB Fredericton and Mount Allison but UNB Saint John is one of the least known university campuses in the country as is the NBCC Saint John Campus. National recognition is, however, probably as much a reflection of limited national awareness of Saint John as the critical mass/presence of UNB Saint John and NBCC Saint John Campus.

In terms of sector capacity to excellence benchmarks, Saint John lags on a number of fronts and does not effectively communicate its post-secondary capabilities message either well or further afield than the Saint John Region or New Brunswick.

Greater Saint John and its post-secondary sector need to do something dramatic – large enough in scale and importance to catch national and global attention – and need to know in advance that what both are trying to do is truly unique. Investors and governments are not much interested in communities/regions that are not aggressive. Time frames are short and decisions are framed by global opportunities and alternatives. Excellence, productivity, competitiveness and **real** accomplishments are key determinants of economic success and self-sufficiency.

## **TRANSFORMING POST-SECONDARY**



## TRANSFORMING POST-SECONDARY

A Saint John Post-Secondary Sector Strategy must not extend current modest Saint John realities. Rather, a bold strategy and equally bold leadership are required to transform Greater Saint John into a competitive global economy and a healthy, vibrant community. Likewise, in and of itself, a post-secondary strategy is not a panacea for the challenges New Brunswick and Saint John face: post-secondary is one socio-economic driver for success but there are other critical elements that need to be articulated and **executed** by Greater Saint John and the Government of New Brunswick.

## REQUISITE GREATER SAINT JOHN SUPPORTS

The historic synergy between Greater Saint John and its post-secondary sector is a major advantage and it must be exploited in every way. Saint John post-secondary institutions will succeed or fail based on the Region's commitment to be fully engaged directly in post-secondary capacity development and in **executing critical** community development strategies that complement/support post-secondary success including:

- A strategic long term approach to workforce forecasting, planning and integration of **multiple** workforce attraction, development and retention strategies.
- A **long-term** holistic poverty reduction strategy that incorporates education as one key component and engages multiple provincial and community partners including post-secondary institutions.
- The *Growth Strategy for the Health Sciences Sector of Saint John*<sup>3</sup> to establish Greater Saint John as a centre of excellence for health research, care and education.
- A broad environmental strategy that encompasses biological, physical, chemical, social and economic interactions and establishes community benchmarks, policies, processes and programs.
- Arts/cultural and heritage preservation as key economic strategies.
- A strategy to develop an innovation/entrepreneurial culture, leadership and requisite levers to support knowledge and technology transfer, new product/service commercialization and new/expanding business export capacity.

## **TRANSFORMING NEW BRUNSWICK POST-SECONDARY**

The Government of New Brunswick has a significant role in creating an economic climate that supports prosperity and self sufficiency. For a host of strategic reasons, Saint John is the foci for New Brunswick energy, advanced manufacturing and health sciences: sectors that require constant physical and human capital investments to be current and grow. Based on historic, current and projected public and private investments in these sectors to the benefit all New Brunswick, sound judgment would dictate investments be made in post-secondary to produce people with the knowledge, employability skills and talent to advance sector competitiveness. For a Saint John Post-secondary Strategy to have a reasonable opportunity for successful implementation, the New Brunswick Government must:

- Recognize that post-secondary is **not** a community development tool but an economic engine that must be market-driven.
- The current New Brunswick post-secondary public policy environment to encourage innovation is severely lacking. Without external policy incentives, few universities and colleges are proactive, particularly from an education perspective and, to a somewhat lesser degree, research. Base level stable funding and strategic investment funds to test and encourage new educational technologies and pedagogies are necessary to significantly impact institutional cultures and innovation<sup>4</sup>.
- Make post-secondary an economic priority with appropriate investments to achieve excellence at national and international standards.
- Eliminate current “one size fits all” post-secondary approach in favour of a New Brunswick strategy that emphasizes broad sectoral goals but structural freedom and flexibility for regions to identify/develop their own economic priorities/niches and to marshal the necessary resources to achieve their objectives.
- Create a singular, over-arching New Brunswick post-secondary system that contains all providers be they degree, diploma or certificate granting; public or private; French or English; bricks-and-mortar, distance or on-line. Current linkages between funding sources and regulatory/approval processes on the one hand and the variety of post-secondary providers on the other, results in extraordinarily difficult

coordination, duplication, lack of accountability system-wide and non-existent strategic planning in its broadest provincial context. A single structure need not compromise institutional integrity, identity or branding. There are numerous examples where individual institutions flourish within a macrostructure: the California State University system contains 23 institutions, serves over 400,000 students with a faculty/staff complement of more than 45,000 and the Kentucky Council on Post-secondary Education encompasses public and independent post-secondary and adult education institutions. Both these examples operate on scales markedly larger and far more complex than New Brunswick.

- Establish and manage **minimum** provincial public and post-secondary education **entrance and exit** standards that elevate New Brunswick to a national position of excellence.
- Link post-secondary strategic planning to realistic but ambitious financial planning that enables excellence. Post-secondary requires a diversity of funding sources (i.e., provincial and federal governments, students, partnerships, private sources, etc.): under a new more efficient and effective provincial public post-secondary model, and presumably, new and flexible institutional models, unique and more innovative funding approaches must be explored – for example:
  - Benchmarking to other jurisdictions to determine provincial government median level of funding/student.
  - One-time matching provincial government endowments to support specific initiatives such as hiring ten world class researchers/educators.
  - New provincial programs to leverage federal dollars such as graduate student federal scholarship “top-ups”.
  - New Brunswick, national and international institutional partnerships: shared infrastructure (e.g., Korea House/UBC House, multiple institutions/1 campus, etc.), joint faculty appointments, joint programs, marketing and recruitment of students (e.g., Canadian Ivy), combined library systems, technology transfer offices, high speed computer networks, etc.
  - Partnerships with industry/business: shared infrastructure (technology, laboratories, learning labs, etc.), joint industry-institutional educator/researcher appointments, integrated New Brunswick/Atlantic Canada recruitment, etc.
  - Aggressive New Brunswick/Atlantic Canada international student recruitment.

- Eliminate post-secondary duplication: there are no sound economic or pedagogical reasons for replicate courses/programs delivered by multiple provincial institutions other than institutional and/or faculty protectionism.
- Upgrade and create state-of-the-technology infrastructure and incent public and private post-secondary providers to go beyond the traditional classroom model to distance and on-line modes of delivery to both import and export education content. Athabasca University has well demonstrated the benefits of cutting-edge delivery systems.
- Eliminate the outmoded and invidious distinction between “education” and “training”: outmoded because the role of post-secondary should be to best prepare students combining both education and training and invidious because it reinforces a status hierarchy implying that education is more worthy, better and more important than *mere* training. The inherent bias toward the traditional university and against traditional public colleges and private providers enables the university community to deny responsibilities for economic growth and college compatriots to feel undervalued. What is important is producing people with higher levels of education and employability skills so that they can make meaningful contributions to the economy and society.
- Expedite transferability of credits to overcome difficulties students experience moving among provincial public and private institutions and even within specific institutions (UNB Saint John to UNB Fredericton). Further, expand block credit transferability throughout all of Atlantic Canada.
- Eliminate all barriers between universities and community colleges and incent institutions to merge operations.
- Eliminate visible and invisible barriers (e.g., public policies, inherent biases, etc.) that preclude accredited private colleges/institutions from fully participating in the post-secondary sector.
- Support complete autonomy for UNB Saint John ( within the proposed New Brunswick system model) to forge its own relationships, create relevant programs, expand delivery modes, source and manage resources and address Greater Saint John development goals.

- Extricate NBCC Saint John Campus from the NBCC network with autonomy, within the proposed New Brunswick post-secondary system, to manage as an educational institution responsive to market demands.
- Press for and bridge New Brunswick post-secondary strategy into an Atlantic Canada post-secondary strategy that tackles the challenges of vested, parochial, siloed stakeholders competing head-on and negating regional progress.
- **Overhaul** the K-12 public education system to establish academic and career education excellence standards and system accountabilities that address tomorrow's civic and workplace expectations and support individual success in transitioning to higher education. Simply tweaking the system will not suffice.
- Invest heavily and over the long-term in comprehensive New Brunswick literacy and numeracy in keeping and proportionate scale to other successful jurisdictional literacy initiatives (e.g., UK National Literacy Trust).

## **SAINT JOHN POST-SECONDARY MODEL**

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### **VISION**

Higher education is integral to Saint John prosperity, global competitiveness, community health and vibrancy. Saint John fully supports sustainable growth and development of its post-secondary sector to prepare people for the challenges of the 21<sup>st</sup> century and to further Regional and provincial innovation through research/development and commercialization.

### **MISSION**

Saint John is committed to facilitating development of its post-secondary sector by:

- Enabling access to the best possible resources and conditions for education, innovation and research.
- Incubating, nurturing and demanding post-secondary excellence and accountability.
- Developing domestic and international relationships that enhance post-secondary capacity.
- Resourcing and executing critical community development support elements (see page 3).

### **STRATEGY GOALS**

10 Year Goal (2008-2018): To develop Saint John as a nationally recognized centre of post-secondary education and research excellence.

20 Year Goal (2018-2028): To sustain Saint John post-secondary national presence and to substantively expand its international presence.

### **SECTOR POSITIONING**

To secure provincial, national and, ultimately, global attention and reputation, the Saint John post-secondary sector must not replicate what other institutions do/do better nor attempt to be “all things to all people”. To achieve focus, the sector must leverage specific Saint John opportunities that:

- Have critical mass.

- Provide a strong foundation for wealth creation for the Greater Saint John Region **and** New Brunswick
- Are unique and sustainable in the national context.
- Require innovative higher education solutions for both next generation workers and current workforce.
- Have a clear link to research, preferably commercializable, that is aligned with Saint John and New Brunswick growth.
- Have potential to attract significant and immediate domestic and international partners/investors.

**Recommendation:** The True *Growth* priority sectors of Energy/ Advanced Manufacturing and Health Sciences must be the focus of the Saint John post-secondary sector.

## **SECTOR MODEL**

The Saint John post-secondary sector model and strategy is premised on four key principles that must guide development and operations:

### **Focus:**

- Human sciences-technology as opposed to the hard sciences that are highly competitive and well beyond Saint John financial capacity.
- Energy/Advanced Manufacturing and Health Sciences
  - Integrated academic and technical/occupational education.
  - Business and professional education for current workforce.
  - Core competencies in innovation, entrepreneurship, technology and leadership.
  - Research/development and innovation in target sectors/related areas with a focus on commercialization.

### **Excellence:**

- Adherence to national and international education and research standards.
- Superior educators and researchers.
- State-of-the-art infrastructure and equipment.
- Cutting edge programs/services based on an interdisciplinary approach.
- Domestic and international industry/business partners.

### **Responsiveness:**

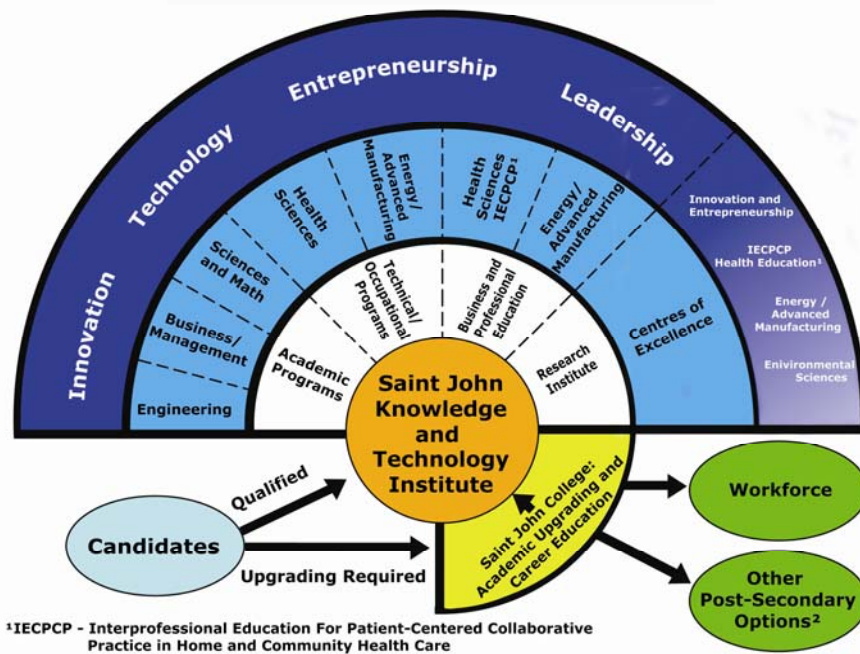
- To changing environments, learner needs and technology.
- To Saint John economic and community growth.



**Accountability:**

- Balanced scorecard measures of success including, but not limited to, student recruitment and retention, graduate employability, reputation of leaders, educators and researchers, research funding, patents, licenses and royalty revenues, spin-off commercialization initiatives, significance of contributions to Saint John socio-economic growth, etc.
- Strategic management to maximize resources.
- Quality of partnerships to develop the Saint John post-secondary sector as a nationally recognized centre of education and research excellence.

**CONCEPT**



<sup>1</sup>IECPCP - Interprofessional Education For Patient-Centered Collaborative Practice in Home and Community Health Care

<sup>2</sup>Other public or private institutions, military and apprenticeships, etc.

**Recommendations:**

1. Saint John must start fresh, free from the traditions, structures and mandates of existing institutions to create a unique, singular *Knowledge & Technology Institute*\* that consolidates current UNB Saint John, NBCC Saint John Campus and Saint John College capacity but under a wholly new, innovative and nimble model for post-secondary that enables flexibility for the *Institute*, students/learners and industry/business partners.
2. The mandate of the Saint John *Knowledge & Technology Institute* is to provide cutting edge interdisciplinary academic and technical/occupational education, continuous business and professional education and research/development with a focus on Energy/Advanced Manufacturing and Health Sciences.
3. The *Institute* supports individuals who require career education and/or academic upgrading to enter the workforce or the post-secondary option of their choice.
4. Underscoring the *Knowledge & Technology Institute* mandate must be:
  - Humanistic skills of reading, understanding history and appreciating culture to develop critical thinking, problem defining/solving, prudent risk-taking, citizenship and leadership capabilities of learners
  - State-of-the-technology education to enable learners and researchers to thrive in 21<sup>st</sup> century work environments
  - An entrepreneurial culture dedicated to innovation
5. The *Knowledge & Technology Institute* be located at Tucker Park with satellite capacity where required and availability of resources.
6. The *Institute* must reflect at all levels (administration, pedagogical and personal development support, resources, etc.) the innovation and entrepreneurial vision, philosophy and culture it espouses.

*\*ad hoc term Knowledge & Technology Institute for the purposes of this report only*

## **KNOWLEDGE & TECHNOLOGY INSTITUTE COMPETITIVE STRATEGY**

Clearly, continuation of the post-secondary status quo is not advantageous in that it has no competitive features. Attempts to compete based on cost, speed or lowering standards may offer short term market advantages but are rife with long term excellence and marketing issues such that end results are highly questionable.

Likewise a customization/niche strategy while popular today with many institutions, demands niche consumer critical mass, high investments in establishing a position that may not be sustainable and, too often if not of real value or accomplished well, reflects an air of desperation.

**Recommendation:** The Saint John *Knowledge & Technology Institute* must compete based on significant differentiation in the national market by providing a truly unique education and research experience. The key differentiators should be:

- Focus on Energy/Advanced Manufacturing and Health Sciences.
- Opportunity to transfer across degree, diploma and certificate programs.
- Cutting edge, interdisciplinary programs that fully enable student accessibility and flexibility year round, 24/7 and offer the best content available.
- Technology application throughout **all** aspects of a learner's program to produce graduates with the capability of understanding markets, applying current technology skills to the workplace, identifying business opportunities, etc.
- Integration of carefully structured community engagement/work/research experiences specific to individual student career interests that culminate in high employability prospects.
- 1:1 career planning and professional mentoring by educators and employer/workplace personnel.
- A culture of innovation, entrepreneurship and leadership embedded in all educational programs.

**Value Proposition for Students, Educators and Researchers:**

- Vanguard *Institute* offering exciting, leading-edge education-industry/business interface.
- Real innovation in experiential study-education-research.
- Full engagement in a dynamic, responsive and supportive community.

**SAINT JOHN *KNOWLEDGE & TECHNOLOGY INSTITUTE*  
STRATEGY**

## **SAINT JOHN KNOWLEDGE & TECHNOLOGY INSTITUTE STRATEGY**

In creating the *Knowledge & Technology Institute* there will be numerous components that, if not interfused, will result in failure. No one component, in and of itself, will be dramatic enough in scale and importance to catch national, let alone, global attention.

### **SAINT JOHN COLLEGE**

New Brunswick post-secondary enrollment, dropout and graduate rates are a reflection of a host of challenges but in particular, K-12 readiness (academically and career education), individual socio-economic barriers and institutional barriers, all of which require long term commitments by governments, educational institutions, community organizations, etc.

National and provincial post-secondary is mired in declining entrance standards, lagging student performance and too many graduates lacking core skills for employability success and full engagement in society. Not only must Saint John address these challenges but there is opportunity to create a competitive advantage.

#### **Recommendations:**

1. Teaching at an open-entry institution that provides legitimate and vitally important remedial education and transition assistance is not consistent with post-secondary excellence in education and research market positioning. Saint John College should be a structural component of the *Knowledge & Technology Institute* but branding and marketing should reflect its specified mandate.
2. Expand the mandate of the Saint John College to provide:
  - Comprehensive prior learning assessment and recognition (PLAR) services for all New Brunswick educational institutions and occupational regulatory bodies.
  - Post-secondary readiness for domestic and international students to enter the workforce, the *Institute* or other public/private post-secondary options.
3. Develop flexible and integrated education/workforce transition programs deliverable in the classroom, via distance education and online.
4. Innovate programs and delivery modalities for marginalized learners (i.e., aboriginals, single parents, new immigrants, etc.) to facilitate their transition into post-secondary or workforce.
5. Integrate mandatory study-work and community engagement into all programs regardless of student location.
6. Position Saint John College as the Atlantic Canada centre for international credentials competency assessments, recognition and upgrading.

## **ACADEMIC AND TECHNICAL/OCCUPATIONAL PROGRAMS**

By obliterating the largely artificial barriers amongst current, siloed post-secondary institutions and those imposed by the traditional classroom delivery model, the Saint John *Knowledge & Technology Institute* has the opportunity to offer flexible, responsive degree, diploma, certificate programs, etc. for students, employers and employees 24/7, 12 months of the year. Programming should be based on core Sciences/Maths, Business/Management, Engineering and Technical/ Occupational with a focus on Energy/Advanced Manufacturing and Health Sciences employability. Programming, however, should not be so exclusive as to preclude employability opportunities in other fields.

### **Recommendations:**

1. The *Knowledge & Technology Institute* be developed to support a **minimum** 6-8,000 full time/part time students and professional education clients through flexible campus and on-site (industry/business) classroom-based, distance education and e-learning by 2018.
2. At a minimum, expand technical/occupational capacity to 3-4,000 full time/part time students and professional education clients by 2018.

**Transformational Learning Experiences:** The *Knowledge & Technology Institute* must innovate cutting edge learning experiences that are competitive advantages for students/learners, employers and employees.

### **Content Recommendations:**

1. Formally engage industry/business in articulating education priority areas for workforce employability as rationale for program modifications and to identify new programming opportunities.
2. Outsource respected world class curricula, courses and programs readily available through partnerships with highly respected national and international post-secondary institutions. Not only is this a more expedient approach but it quickly leverages *Institute* capacity to be nationally competitive.
3. Forge partnerships with national and international industry, business and institutions that excel to develop and deliver Energy/Advanced Manufacturing and Health Sciences curricula and programs (e.g., Gas Technology Institute, Centre for Advancement of Process Technology, US National Science Foundations Advanced Technological Education, Atomic Energy of Canada, UNB Chairs in Nuclear Engineer Environmental Design Engineer Advanced Instrumentation and Control, McMaster University Health Sciences, Michener Institute, etc.) and to create/further student exchanges, co-op/directed field placements and dual certification.

4. Focus on select sector dimensions and develop applied degrees/diplomas in Energy/Advanced Manufacturing and Health Sciences (e.g., Integrated Advanced Manufacturing Technologies, Science-Environmental Management, Interprofessional Health Care, etc.).
5. Create and market collaborative degree/diploma/certificate programs with national and international post-secondary institutions, industry associations, etc.
6. Mandate a first year course(s) to develop student competencies in writing, research, critical thinking, communication (oral and written), presentation skills, data analysis, etc.
7. Expose students to the best possible **problem-based, experiential and interdisciplinary** curricula that ensures workplace readiness and, as close as possible, a guarantee of employability.
8. Link student course work assignments to specific Saint John/New Brunswick industry and business workplace issues/case studies.
9. Integrate mandatory community engagement/work experiences into all programs.
10. Develop student capstone experiences: multi-disciplinary student teams tasked with applied industry/business/community development projects, clinical practice, etc.
11. Develop mutually beneficial employer-student programs that bridge study-work to career prospects.

**Delivery Mode Recommendations:**

1. Commit to and invest in state-of-the-technology distance education and e-learning infrastructure as core to the *Knowledge & Technology Institute's* service delivery and business model.
2. Outsource the very best educators in conjunction with sourcing the most respected curricula, courses and programs to deliver via distance education/e-learning.
3. Develop credit and non-credit programming with high schools through structured opportunities to take *Institute* courses and participate in workplace learning activities.
4. Collaborate with employers to conduct joint *Institute*-workplace programs on-site in real-time, real-place plant settings.
5. Develop on-campus mock/virtual installations of refineries, reactors, manufacturing plants, hospital/health center, etc.

**Global Orientation Recommendations:**

1. Integrate global perspectives into curricular planning/sourcing, teaching practices, education/research collaborations, student work-study options, etc.
2. Develop comprehensive international education strategy with focus on **targeted** international students with match to *Institute* offerings and entrance standards and domestic student exchange programs.
3. Enhance capacity to recruit foreign students by:
  - Eliminating foreign student differential fees.
  - Marketing *Institute* differentiators, particularly year round, 24/7 access, work-study and community engagement that enhance employability prospects.
  - Aligning Saint John immigration and international education branding, niche marketing/promotion and recruitment.
4. Enable foreign investments in the *Knowledge & Technology Institute* (facilities, technology, research, etc.).
5. Develop *Study/Work in Saint John* incentives to **pull** high caliber international students, faculty and researchers to Saint John.



**Niche Program Opportunities:** There are select niche post-secondary program opportunities that may evolve but will require detailed, point-in-time feasibility assessment to measure potential based on:

- Atlantic Canada and national competitive programs.
- Size and sustainability of market demand.
- Export potential.
- Clear links to *Knowledge & Technology Institute* research capacity.
- Availability of program curricula, delivery and marketing partners.
- Contributions to Saint John and New Brunswick socio-economic growth.

**Recommendations:**

1. The *Knowledge & Technology Institute* should monitor and assess niche education/professional education opportunities that match the *Institute's* mandate.
2. High potential niche opportunities that deserve assessment at this point in time include:
  - Bridging the gap between commerce and science
  - Industrial design
  - Community engagement, mobilization and transformation building on current Saint John CURA project/research
  - Heritage studies\* (museology, conservation, preservation, cultural site and building analysis and planning, management and administration, policy development, facility management, programming and interpretation, etc.)
  - Innovation in the public service

\*The Arts and Culture and Heritage sectors are highly complementary to Saint John development. Not to be undersold, evidence clearly shows that the sectors contribute tremendously to the economy, significantly impact community vibrancy and provide magnetic appeal to attract and retain employers and people to live and work in the Region. Saint John's greatest competitive advantage is its history, especially the historic built environment in the Uptown. For Saint John to fully execute heritage as an economic driver, it requires a supply of post-secondary educated artisans, professionals, etc. Unique Heritage Studies satellite programming that utilizes the Uptown as a "laboratory" has strong potential and needs to be assessed for viability. In the short term, develop elective course offerings in Heritage Studies with the national Cultural Human Resources Sector Council and community organizations to test market potential.

Likewise, as the arts/culture sector evolves and matures, there is potential to identify niche opportunities that are viable based on the feasibility criteria noted above.

## **BUSINESS AND PROFESSIONAL EDUCATION PROGRAMS**

Post-secondary has, in general, done poorly in responding to post-degree and workforce employment needs. The Saint John *Knowledge & Technology Institute* has an opportunity to differentiate itself by aggressively pursuing this market in keeping with the same focus content, delivery modes and global orientation approaches recommended for Academic and Technical/Occupational programs.

### **Recommendations:**

1. The *Institute* establish a Business and Professional Education unit that is governed by a 50:50 public-private Board of Directors with a mandate to address industry/business workforce development needs and to generate a revenue stream from a variety of channels.
2. The Business and Professional Education unit source/develop modularized content for delivery via multiple modalities (on campus, on site, distance education, e-learning, etc.) to allow employer and student flexibility to match content and accessibility to need. Modules must aggregate into full course credits and, in turn, into diplomas, degrees, post-degree certificates.
3. Modularized content should be developed, where relevant, with professional accreditation bodies.
4. Redevelop learning programs for existing untrained workforce with skills and experiences as sectors mature and intensify.
5. Business and Professional Education modules/programs should be aggressively marketed globally to target jurisdictions, institutions, associations, etc. as well as online.

## RESEARCH, DEVELOPMENT AND INNOVATION

Research capacity, particularly applied research with strong commercialization potential, is key to Saint John priority economic sectors but also to strengthening and broadening the Region's economic base.

### **Recommendations:**

1. Applied research must be an equally important mandate of the *Knowledge & Technology Institute*.
2. Vest intellectual property rights in the *Institute*, the researcher(s) and the industry/business partner(s) proportionate to contributions.
3. Create four Centres of Excellence: Innovation and Entrepreneurship, Interprofessional Education for Patient-Centred Collaborative Practice in Home and Community Care, Energy/Advanced Manufacturing and Environmental Sciences.
4. Centres of Excellence must be collaborations with local, provincial, national and international industry, business, governments, communities, etc.
5. Centres of Excellence be fully engaged in *Knowledge & Technology Institute* academic/technical and professional education programs.
6. Centres of Excellence be supported by an umbrella Research Institute to:
  - Initiate new partnerships between industry/business, health sciences, and other relevant post-secondary institutions to undertake collaborative research.
  - Conduct research proof of concept to reduce risk of comprehensive research and development investments.
  - Ensure cross-pollination of research by the Centres.
  - Connect researchers to financial supports.
  - Facilitate transfer of knowledge and technology to an existing company or creation of a new company.
  - Create collaborations between final year undergraduates/ teams and industry/business to address specific problems that require the application of knowledge, technical skills and technology to innovate a solution(s).
  - In partnership with industry/business, create scholarships to support student researchers to work in industry/academic facilities with renowned leaders/educators/researchers world-wide.
  - Employ national on-ground presence/expertise (e.g., Ottawa, Calgary, Toronto, etc.) to position the *Institute* to funding agencies, investors, government, industry, etc.
7. Research business model reflects revenue generation and requisite re-investment in *Institute* education and research capacity.

## **Environmental Sciences Centre of Excellence**

The advantages of a Centre of Excellence in Environmental Science are numerous:

- Abruptly alter the perceived Saint John brand as industrial centre to one in which economic development is visibly inclusive of concrete measures to ensure environmental protection and sustainability.
- Focused consortium of academic, government, industry, NGO partners to engage/collaborate with national and international centres with required/complementary expertise.
- Leverage multi partner resources to establish state-of-the-science infrastructure to serve education, research, industry and government needs.
- Develop and export globally-sought environmental sciences expertise.
- Leverage Saint John energy/advanced manufacturing developments into exportable longitudinal environmental impacts research, post-secondary education/training programs and public education initiatives.
- Create differentiated post-secondary programs that integrate theoretical and applied research and work-study options.
- Significant magnet for high caliber researchers/educators.
- Spin off new business opportunities by commercializing environmental science products, new methodologies, environmental literacy education, etc.

### **Recommendations: Environmental Sciences Centre of Excellence**

1. The mandate of the Centre should be to focus on the effects of human activities on the sustainability of ecosystems by researching, developing and encouraging the adoption of environmentally responsible solutions.
2. Build the Centre on Saint John strengths that create significant partnership opportunities for integrated research and education including:
  - Canadian Rivers Institute (CRI) which opened state-of-the-science research facilities in October 2006 to carry out multi-disciplinary basic and applied research.
  - Links to current UNB Saint John undergraduate BSc degree and graduate studies (MSc and PhD) in environmental biology; complementary social sciences (economics) and business programs and complementary programming at UNB Fredericton.

- Links to current NBCC Saint John Campus Chemical Technology diploma and other college programs including technologist programs in aquaculture (St. Andrews), environment (Miramichi), engineering (Saint John and Moncton) and biotechnology (Edmundston).
  - Local industries that have an excellent track record in progressive environmental stewardship and funding research and development, as well as employing state-of-the-science equipment to ensure environmental sustainability.
  - Demonstrated ability by the three levels of government to work together to prioritize and fund environmental improvements (e.g., Saint John Harbour clean up).
  - Commitments from large industry (e.g., Irving companies), small to large businesses (e.g., environmental and engineering consulting companies), government energy agendas (e.g., Atomic Energy of Canada Limited) and the health care sector (e.g., Atlantic Health Sciences Corporation) to operate core businesses in the Saint John region.
3. The Centre should facilitate the development and execution of commercially viable environmental outcomes, including education.
  4. The Centre should focus its research and development activities on clean air, water, land technologies, waste management, resource management, alternative energy sources and community-driven environmental education and stewardship.
  5. In concert with Saint John College, establish and co-deliver middle-high school and community-based programs and website to introduce career opportunities in environmental science and to provide career education/information.

## **Interprofessional Education for Patient-Centred Collaborative Practice in Home and Community Care (IECPCP) Centre of Excellence**

An IECPCP Centre of Excellence based in Saint John offers significant benefits:

- Value-add advantage to Saint John strategy to position the Region as a centre of excellence for health, research, care and education.
- Immediate opportunity to leverage current Saint John IECPCP activity to Atlantic Canada and national presence/reputation.
- As there are only two such Canadian centres located at the University of British Columbia and the University of Toronto, the proposed Saint John Centre will be a flagship for eastern Canada.
- Integration of IECPCP into core health occupational education/training programs to differentiate the *Knowledge & Technology Institute*.
- Strong education export potential.
- Magnet to attract and retain both trained health care professionals and students.

### **Recommendations:**

1. The mandate of the Centre should complement the seven key health sciences sector growth opportunities<sup>3</sup> by focusing on:
  - Research, promotion and demonstration of the benefits of interprofessional education for collaborative patient-centred practice in Atlantic Canada.
  - Fostering changes that support IECPCP within health and education systems.
  - Promoting and delivering interprofessional education for knowledge translation, collaborative patient-centred practice across national health and education sectors, institutions and professionals.
  - Increasing opportunities, capacity and supports to teach and learn from an interprofessional perspective.
2. The Centre must build on the partnership by UNB Saint John, NBCC Saint John Campus, the Atlantic Health Sciences Corporation and Dalhousie University, Faculty of Medicine that are presently engaged in one of the 20 Canadian projects funded by Health Canada to improve collaborative patient centred practice through interprofessional education.
3. Integrate IECPCP Centre of Excellence activities with proposed Health Sciences Sector Strategy initiatives<sup>3</sup> including e-Health Research Centre with clinical research and access to health care

4. Collaborate with Innovation and Entrepreneurship Centre of Excellence to spin-off IECPCP related e-health companies.
5. In concert with Saint John College, establish and co-deliver middle-high school and community-based programs and website to introduce career opportunities in health sciences and to provide career education/information.
6. Greater Saint John take immediate steps to implement the proposed IECPCP Centre of Excellence<sup>5</sup>.

## **Energy/Advanced Manufacturing Centre of Excellence**

Saint John commitment to Energy/Advanced Manufacturing demands a Centre of Excellence to invest in and promote cutting edge research collaborations by post-secondary and industry to develop industrially and environmentally relevant processes and technologies.

The benefits to Saint John and New Brunswick are:

- Sustainability and expansion of the sector because of innovative productivity (technology, machinery, equipment and people) that enhances global competitiveness.
- The development of sector processes that adhere to community environmental benchmarks.
- The development and demonstration of innovative alternative energy technologies.
- High potential for commercialization of innovative knowledge, processes and technologies.

### **Recommendations:**

1. The mandate of the Centre should be to:
  - Forge applied research collaborations with industry and consortia.
  - Focus research efforts on policy development, markets (e.g., supply-demand, pricing, consumer behaviour, demand management, etc.), systems (e.g., energy transmission and distribution, etc), technologies (e.g., manufacturing drives and controls, etc).
  - Conduct collaborative applied research where the economic and environmental impact of technology, knowledge and commercialization will be greatest.
  - Provide extensive intellectual property commercialization, licensing and project management expertise.
  - Engage *Knowledge & Technology Institute* students in leading edge research.
2. The Centre should work in collaboration with the Centre of Excellence: Environmental Sciences with a joint focus on environmental stewardship, energy efficiency and conservation, alternative energy sources, etc.
3. In concert with Saint John College establish and co-deliver middle-high school and community-based programs and website to introduce career opportunities in energy/advanced manufacturing and to provide career education/information.



## **Innovation and Entrepreneurship Centre of Excellence**

While Saint John has a history of select global successes, the Region must elevate its innovation and entrepreneurial culture to a notably higher and internationally competitive level. This is a formidable challenge and expecting government to do this is one of the great non sequiturs in Canadian public life.

A collaboration by the *Knowledge & Technology Institute* and private sector industry and business to collaborate on a Centre for Innovation and Entrepreneurship is requisite to Saint John success.

### **Recommendations:**

1. The mandate of the Centre should be to:
  - Conduct research in various fields of entrepreneurship: causes and consequences, effects of entrepreneurial activity, venture capital, effective relationships, etc.
  - Conduct/support research and development activities in *disruptive* innovative processes and technologies with high potential to create new products/services, markets and start-up companies.
  - Provide coaching/mentoring services to new and expanding companies.
  - Active engagement collaboration, development (curricula, etc.) and execution (teaching, e-learning, etc.) of programs and activities within *Knowledge & Technology Institute* education and professional education spheres.
  - Encourage and support *Institute* students to create new business.
2. The Centre must be lead and managed by researchers/educators with strong, demonstrated, practical global experience in industry/business.
3. The Centre must work in collaboration with the other Centres to strengthen their innovation capacity and entrepreneurial capacity.
4. This Centre should be centrally located in Uptown Saint John with powerful virtual capacity to support broad face-face virtual consulting, mentoring, education and research services, access to global expertise, etc.

## **INSTITUTE INFRASTRUCTURE**

The current Saint John post-secondary sector is highly under-resourced to be infrastructure competitive. The Saint John *Knowledge & Technology Institute* is premised on a new and innovative model that is significantly less dependent on traditional bricks and mortar infrastructure to enable year round, 24/7 accessibility to best-in-class content and to maximize education export capacity.

### **Recommendations:**

1. The *Knowledge & Technology Institute* centralize operations at Tucker Park to maximize infrastructure capital investments, minimize operational costs and achieve education and research efficiencies. Invite accredited private colleges/institutes to locate to the Tucker Park knowledge hub to round out and provide more and flexible options for students/learners.
2. Institute satellite operations/campuses where appropriate/necessary. For example, the Innovation and Entrepreneurship Centre of Excellence must be located in Uptown Saint John as should a potential niche Heritage studies program.
3. Infrastructure design must include a central *Institute*-partners-students facility to foster networking, communication, recruitment, etc.
4. Infrastructure upgrades or build should adhere to environmental/green technologies. If marketed properly, this can provide a significant competitive advantage for both the *Institute* and Greater Saint John.
5. Capital investment in post-secondary infrastructure has traditionally relied on provincial allocations filtered through institutional operating budgets, targeted direct provincial allocations for specific capital projects, federal allocations for province-wide post-secondary infrastructure and revenue derived from student tuition. The *Knowledge & Technology Institute* is focused on Saint John economic growth that will benefit the private sector. As such industry/business must continuously invest in *Institute* infrastructure to ensure (economically) and justify (ethically) the revenue benefits they will accrue.
6. Capital investment by the private sector will require detailed structural analysis to ensure partnerships that do not sour: relationships, trust and true collaboration are not easy to define, build or sustain yet will be critical to building and sustaining the *Institute*.

## ATTRACTING AND RETAINING PEOPLE

All other investments aside, if Saint John cannot attract and retain superlative *Institute* leaders, educators, students and researchers it is unlikely to succeed.

### **Recommendations:**

1. **Attracting and Retaining:** superlative *Institute* personnel and students must be a collaboration by industry, business, Saint John community/government and the *Knowledge & Technology Institute*.
2. **Institute Leaders:** will be immensely critical to achieving post-secondary excellence and must be a priority:
  - Benchmark salary and compensation levels with comparable positions nationally.
  - Conduct **international** searches to identify best candidates.
  - Engage professional search firms with national and international reach to attract, recruit and contribute to selection.
  - Seek alternative sources of funding for key positions (i.e., NSERC Chairs, Canada Research Chairs, etc.).
3. **Educators/Researchers:** are instrumental to attracting students, research funding and enabling industry collaboration.
  - Develop a human resource plan based on *Institute* academic and research plans to facilitate strategic hiring of educators/researchers.
  - Outsource best educators to develop/deliver/support outsourced curricula, courses and programs.
  - Establish mutually beneficial performance based *Institute*-educator/researcher relationships.
  - Pursue alternative sources of funding:
    - Federally funded salary support programs- NSERC, Canada Research Chairs, etc.
    - Press for significant New Brunswick government-industry matching endowment fund (\$40+million) to support recruitment of world class scholars and researchers
    - Partner on joint appointments with other post-secondary institutions in Atlantic Canada
    - Partner with industry on joint appointments as a significant differentiator for the expertise and kinds of people the *Institute* industry needs.
  - Develop unique incentive programs that include child care, spousal employment, mortgage assistance/interest free mortgages with the Institute serving as the banker, tuition assistance for dependents, supplementary pension plan, library acquisitions in specific research areas, research start-up funds, graduate student to work with researchers, etc.

4. **Undergraduate Students:** to recruit top tier undergraduate students:
- Focus on Atlantic Canada and northeast US high school students that match *Institute* offerings.
  - Communicate/market key *Institute* differentiators: focused programs, mandatory community engagement/work-study program elements, distributed learning options, problem based, experiential learning, employability prospects, etc.
  - Develop “cool” student-friendly website.
  - Aggressively recruit Millennium Scholarship winners. The Canada Millennium Scholarship Foundation distributes \$325 million annually in scholarships and bursaries (more than \$7.7 million in New Brunswick in 2006).
  - Host Greater Saint John and *Institute* campus tours/visits for students.
  - Early acceptance to outstanding students on the basis of fall grade 12 marks.
  - Guaranteed housing for out-of-province first year students and/or early admission offers.
  - Match provincial/federal scholarships with university funded top-ups.
  - Build endowment fund for scholarships\* and bursaries.
  - Automatic level of financial assistance for students admitted with a minimum average.
  - Develop relationships with “sister” institutions throughout Canada and around the world: maximize exchange program options as *Institute* differentiator.

\* Scholarship funding is a benchmark for post-secondary excellence and while important, Saint John and New Brunswick presently lag well behind and capacity relative to that of other institutions/jurisdictions (e.g., Alberta) is limited. As such, it is strongly recommended that Saint John and the *Knowledge & Technology Institute* emphasize the community engagement and work experience of *Institute* programs, employability prospects and mutually-beneficial employer-student work/study programs.

5. **Graduate Students:** key to support research Centres of Excellence and build Institute market positioning.
- Develop and execute **aggressive** recruiting, admitting and funding model.
  - Aggressively recruit federally funded graduate students (over 4,000 graduate students are now supported by federal funding)
  - Provide funding supports for graduate students including:
    - Provincial and/or industry funding for graduate student spaces, scholarships, teaching and research assistanceships.
    - Industry/business endowments
    - Tuition assistance (many competitive post-secondary institutions now offer PhD tuition support)
  - Incentives in the form of child care, housing assistance and spousal employment.

## MARKETING AND BRANDING

Branding the Saint John *Knowledge & Technology Institute* must be based on the unique values the *Institute*, in conjunction with Greater Saint John, offers and delivers to students, educators and researchers:

- Focus on Energy/Advanced Manufacturing and Health Sciences.
- Access to comprehensive post-secondary readiness programs/services.
- Singular *Institute* that provides seamless programming to enable degree, diploma and certificate programs.
- Problem-based, experiential interdisciplinary programs that fully enable student accessibility and flexibility year round, 24/7 and offer the best content available.
- State-of-the-technology applications throughout **all** aspects of a learner's program.
- Integration of carefully structured community engagement/work experiences and/or study-research options specific to individual student career interests.
- High employability prospects.
- 1:1 career planning and professional mentoring.
- A culture of innovation, entrepreneurship and leadership.
- Research Centres of Excellence.
- Comprehensive provincial, national and international industry/business relationships and partnerships.

The *Institute* must aggressively market nationally and internationally. A marketing and communications plan is beyond the scope of this strategy. Suffice to state that marketing and communications efforts must be directed to Saint John community leaders and residents, the New Brunswick government, targeted high potential students, other New Brunswick and national post-secondary institutions, potential educators/research and local, national and international industry/business.

### **Recommendations:**

1. *Institute* student marketing efforts should focus on New Brunswick, Atlantic Canada and northeast US high school students that match *Institute* offerings.
2. Develop and execute comprehensive international marketing strategy targeting jurisdictions with high potential student, educators and researchers that match *Institute* offerings.

# **STRATEGY BUSINESS MODEL AND IMPLEMENTATION**

## STRATEGY BUSINESS MODEL AND IMPLEMENTATION

### BUSINESS MODEL

Post-secondary education and research rarely resonate with the general public and governments focus on accessibility which drives mediocrity, distant from Saint John's urgent need for excellence in human knowledge, skills and talent. Saint John must demand and drive excellence in post-secondary, despite what may well be cries of elitism: excellence is the doorway to global competitiveness and the keys for success are an innovative and entrepreneurial culture.

Saint John must secure full relationships, partnerships and financial commitments to major post-secondary change and investments by local, provincial, national and international industry/business, and governments to create, develop and manage a business model that is sustainable.

Current public funding formulas, student tuitions, international fees and private donations are inadequate largely because a province the size, scale and financial capacity of New Brunswick cannot afford multiple, siloed public institutions grounded in out-of-date operational models that exceed their financial means. If post-secondary is important to Saint John, and it must be, then Saint John must assume responsibility. Regardless of whatever federal/provincial financial resource changes are forthcoming, Saint John must commit to a post-secondary business model that seeks and secures long term financial investments and revenue streams. Capital investments will be large – well in excess of \$300 million – and operational costs must be rationally managed with a view to efficiencies and developing significant new revenue streams. Industry/business are key beneficiaries of the proposed Saint John post-secondary model and must commit as full stakeholders in collaborative build and operations.

#### **Recommendations:**

1. Saint John forge long-term partnerships with the private sector to elevate post-secondary to a different model and higher level.
2. Committed partners must be fully engaged in sector and *Institute* business and operational decision making.



## **STRATEGY IMPLEMENTATION**

Assertive leadership unafraid of vested stakeholder response will be essential to Saint John future and the role of post-secondary sector in that future. Dynamic leaders capable of envisioning and executing a new post-secondary model will be required to ignite and drive change – a major challenge for post-secondary institutions is to let go of what they know and change the culture and operational model after decades of doing the same thing in the same ways.

Senior managers rarely have opportunity/make opportunity to think about the future of their business. Instead of lamenting workforce shortages, Saint John government, industry, business, community and post-secondary leaders need to collaboratively confirm a vision for post-secondary and invest in education (K-12, post-secondary and current workforce) and supportive technology infrastructure.

### **Recommendations:**

1. Saint John immediately establish a *Knowledge & Technology Institute* Task Force of select and influential national, provincial and local leaders to move the post-secondary macro-strategy presented herein through the next stages of long term and short term business planning and implementation.
2. Saint John develop “score cards” for a wholly new approach to post-secondary: the old model of post-secondary is grounded in past performance data that are out of date with the new proposed Saint John post-secondary strategy.

## REFERENCES

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- <sup>5</sup>John Gilbert Consulting. Interprofessional Education to Patient-Centred Collaborative Practice in Home and Community Care. April 2007.