



## Canadian Photonic Industry Consortium (CPIC)

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### INTERNATIONAL BUSINESS STRATEGY (2020-2023)

#### Executive Summary

The photonics industry contributes more than \$4.65bn annually to the Canadian economy primarily through exports. The technology is used in every Canadian major sector, by many of the country's largest companies. Canadian oil and gas companies are using optical fiber sensors to monitor the extraction of oil; laser cutting and welding are used extensively by the Canadian aerospace and automotive industries. Pharma industries are using the technology for quality control and advanced manufacturing. Healthcare is using the technology for rapid testing and in Point of care. The photonics technology enables the future smart cities and smart energy management and the digital transformation.

The Canadian Photonic Industry Consortium (CPIC) was created in April 2012 by merging the Canadian Photonics Consortium (CPC) and the Canadian Institute for Photonic Innovations (CIPI). CPIC brings together photonic manufacturers, end-users and the research community, creating an exchange network and fostering partnership activities and by coordinating the activities of regional industry clusters, universities and government research organizations. Its primary mission is to promote Photonics both within and outside of Canada, increase commercialization and exports for our member companies as well as increasing investment by foreign companies in Canada. It achieves this through facilitating participation of our members at major international Trade Shows, help them develop market strategies and understand the opportunities and challenges that they might face. We are partnering on events with similar overseas organizations and their members, and inward and outward trade missions to and from target Countries.



## 1. Sector Analysis

### 1.1 Sector Overview

A study by the Canadian Photonics Consortium presented at Photonics North 2019 indicates that Canadian Photonics exports have grown by 47% during the last 5 years which represents four times the global export growth. Photonics is used in every major sector of the Canadian economy including healthcare, defense and security, energy, transportation, communications, etc.

Most of the Canadian photonics producers are still small and medium sized companies; close to 50% have less than 50 employees and yearly revenues under \$10m. Since Canada is a small market, there is a strong need to export which places great strain on their resources. CPIC is committed to help them through its international activities.

Canada has a world class reputation in photonics research through NRC and has contributed with many important technology breakthroughs. This makes the country an attractive target for foreign investment, companies looking to internationalize their research and development activities.

### 1.2. Subsectors

Photonics is a technology that impacts every sector of the Canadian economy. Canadian photonics industry provides solutions for every sector. Therefore, CPIC has not chosen to focus exclusively on a particular subsector. However, there are some areas in which the country is either very strong or has a rapidly growing photonics capability such as optical communications, imaging, defense and security, life and sciences, and healthcare.

### 1.3. Target markets

United States which accounts for about 50% of sales is a natural market for Canadian companies and very few companies do not address it. Though the entrance barriers for this market are lower than many others some challenges are arising, notably the pandemic and large Photonics industry in the US.

European Union accounts for about 24 % of the global Photonics market. CPIC has established strong links with similar organizations in UK, France, Netherlands and Germany to facilitate mutual trade and collaboration in all industrial areas that use Photonics.

### 1.4. Targets

CPIC's primary objective is to help its industrial members increase their visibility in foreign markets. By increasing leads, we are helping them increase their sales by gaining new international customers and distributors. CPIC plans to provide market information and analysis that enables them to develop a market strategy and successfully bring their product to market. Its secondary aims are to help identify potential technology partners. In addition, we plan to increase the Canadian photonics base by encouraging foreign businesses to establish research and development and production facilities in



Canada.

## 2. Strategic Priorities

### 2.1. Strategic objectives

CPIC's international objectives are:

- Promote and advertise Canadian photonics, and Canadian photonics companies, particularly SMEs
- Support member companies to increase international sales through advertising and lead generation.
- Facilitate the identification of international distributors, suppliers, and other partnership potential for CPIC member companies,
- Establish bilateral interactions between similar organizations in targeted markets,
- Encourage international participation at the annual Photonics North Exhibition in Canada
- Promote Canadian Photonics and encourage inward investment in Canada.

### 2.2. Tactical actions

#### 2.2.1. Trade Shows

Since the Canadian market for photonic components is limited, Canadian photonics companies depend heavily on exports (85% of revenues) and are typically small. These companies need visibility at major trade shows. This is very critical but expensive and time consuming. CPIC helps to increase and support the pre- and post-advertising, increasing the traffic at the tradeshow and generating leads. Our primary targets are, therefore, major photonics trade shows in Europe and North America.

In Europe we will focus on the biannual Laser Show held in Munich Germany. This is in line with our strategy to address advanced manufacturing-based initiatives and the Industry 4.0 initiative.

In North America the premier Trade Show is Photonics West. Held annually in California, this show attracted in 2020 over 1,000 exhibitors and 20,000 attendees from all parts of the world. It hosts a conference where more than 5000 papers are presented. CPIC first held a pavilion with 4 companies in 2006. With the help of GOA, this has now grown to a high-profile pavilion with up to 15 SME exhibitors. Over the years some of these have grown to be able to rent their own space at the show. With the co-operation of the event organizers and the enthusiasm of Canadian exhibitors in 2010 we established a Canadian Cluster with up to 30 Canadian exhibitors co- located on the show floor. We plan to build on this success by further developing this Canada cluster concept with a mix of large and small companies. We are participating in the Photonics West 2021 that currently is planned to be held in person but might go virtual. To drive foot traffic to the booths and promote Canadian Photonics we have identified the need to advertise and market our presence at the show.

This show has also several subsectors that Canadian Photonics Companies would benefit of being promoted in BIOS the show for photonics in life-science held prior to Photonics West and the inaugural 2020 Conference AR/VR/MR (Augmented Reality, Virtual Reality and Mixed Reality)



held during Photonics West.

We will also look at expanding to other events such as OFC-NFOEC (Communications) and the SPIE Defense trade shows.

### 2.2.2 Partnering Events

We work with organizations such as the UK Photonics Knowledge Transfer Network, the European Photonics Industry Consortium (EPIC), Laser-GO Global Consortium and The Secured Communicating Solutions Cluster international regional clusters and Canadian Consulates to organize partnering events between companies from selected countries. The aim is to provide an environment in which Canadian companies can showcase their capabilities and meet with foreign companies on a one-on-one basis to discuss business relationships ranging from distribution, licensing or joint development. In 2010 CPIC held a successful tri-partite UK-France- Canada Workshop in Niagara Falls, as part of Photonics North. CPIC also worked with the US Consulates in NE USA to host a US-Canada Workshop at the same event. CPIC is member of the International Optoelectronic association (IOA) and plans to continue this membership which facilitates exchanges between various organizations from Asia, Europe and USA and provides global market information on photonics.

Our experience has shown that though these are broad-based partnering events, a higher return might be obtained by a focusing on sub-sectors. It is our intent to identify two or three such subsectors for international partnering events during the next three years.

### 2.2.3. Trade Missions

CPIC would like to host incoming missions which we will continue to do on a selective and per case basis. In recent years these have included Netherlands, France and China. CPIC will continue these activities and will organize outgoing missions to our target countries, usually in association with a Trade Show.

### 2.2.4. Photonics North

Photonics North is an annual showcase for Canadian Photonics, held in Ontario or Quebec, consisting of a three-day technical conference and a Product Showcase (exhibition). Approximately 25% of the visitors to Photonics North are from outside Canada. This year (2020) it was held virtual and with help from the other partners was considered a success. It is CPIC's objective to increase the foreign participation in this event in coming years. We plan to do this in several ways:

- When feasible, co-locate Photonics North with other international events. As example, in June 2011, Photonics North was the anchor of an Ottawa Photonics Week (15 to 20 May 2011) which included the 21<sup>st</sup> International Conference on Optical Fiber Sensors (OFS21) and the International Symposium on Information Photonics (IP11)



- Organizing international partnering workshops
- Holding Photonics North in Vancouver which could attract more participants from Asia and the west coast of the USA.

#### 2.2.5. Inward Investment and Partnerships

CPIC continues to work with the Canadian Embassies and Consulates to encourage inward investment in photonics and partnerships with foreign companies. In 2009, CPC who became CPIC has worked with DFAIT to produce an investment papers, with NRC and the consulates in NE US to encourage technology interaction between companies within the regions. These activities will continue.

#### 2.3. Measures of success

Provide yearly market information about the Canadian Photonics status and World picture to the Canadian Industry especially SME's enabling them to build market strategies.

Increase awareness about Canadian Photonics capabilities.

Specific Metrics:

##### Annual export growth

(In the last 5 years Canadian Photonics Exports have increased by 47% four times the global Canadian exports growth (GDP); this represents a 9.4% yearly increase up to 2019.

CPIC's initiatives target to increased sales for Canadian Photonics companies to pre pandemic levels 2021 to 2023. And to help increase employment in photonics.

##### For Trade Shows pre and post activities of advertising

- record leads generated from digital ads
- record leads generated from ads through the foot traffic at the Tradeshow
- estimated sales for each industry market area from leads

##### For Partnering Meetings

- record the number of participants,
- record number of one on one meetings and collaboration activities identified.
- estimated number of collaboration agreements

##### For Photonics North

- measure increased international participation by recording number of participants and exhibitors.