CASE STUDY
SOLBERRY INCORPORATED: SEABUCKTHORN PUREE

Rural Innovation In Manitoba: Reducing Barriers to Commercialization and Growing Capacity.

January 2017
Acknowledgements

Thanks to Solberry Incorporated and all the innovation partners and industry stakeholders who participated in this research. Thanks too to the members of the research steering committee.

This research was supported and funded by Growing Forward 2.

The data, analysis of data, project analysis and conclusions or other information in this report are those of the authors and the Rural Development Institute and not of the Government of Canada or Manitoba.
Introduction

The Rural Innovation in Manitoba (RIM) project is funded by the Canada and Manitoba governments through Growing Forward 2, a federal-provincial-territorial initiative. It attempts to create new knowledge that enhances the process of innovation by addressing barriers and opportunities in commercialization in Manitoba's Agri-Food sector, and improves capacity in organizations so they can facilitate innovation. As a part of the RIM project, we conducted five case studies that provide the information for a cross case study report on commercialization in the Manitoba food processing industry.

This case study is one of five conducted to explore the commercialization of a product/process innovation, and give insight through interviews with innovators and important stakeholders. For the purpose of this research a stakeholder is defined as someone who helped innovators achieve significant milestones in their commercialization process. The terms agri-food and food processing are used interchangeably; and innovators and stakeholders are referred to collectively as participants.

This case study briefly describes the research design and methods, for additional details see the cross case study report. This case study specifically highlights an innovation from Solberry Incorporated. The report provides a brief overview of the company, describes their product/process innovation, and provides an overview of their commercialization timeline. The report covers the five stakeholders identified by the innovators, who they are and how they helped. The report also describes gaps and barriers identified by the innovator and stakeholders that are specific to Solberry. Finally, the report concludes with a summary of this case study.
Research Methods

This research project seeks increased understanding of the commercialization of innovations in Manitoba’s food processing industry. The research method used for this study was qualitative case studies. We conducted five case studies examining the path to commercialization for five recent product/process innovations in the Manitoba food processing industry.

All the studies centre on a product/process innovation that has come to market in the last five years. They document the progress of an innovation from idea through to market, from the point of view of the innovator and five “stakeholders”, people who had helped the company on the road to commercialization.

Data Collection

Semi-structured interviews were conducted with the head of the food processing company; who was intimately connected to the commercialization of the product/process innovation.

The interviews explored critical areas to help understand the commercialization of each innovation:

• Background of company or organization and the services or product offered
• Timeline and milestones in the progression of the innovation from idea to commercial product
• Stakeholders and their involvement in commercialization
• The nature, timing, stage and impact of stakeholder involvement
• Barriers and gaps, specific to the innovation and companies involved, and the food processing industry in general.
• Leadership and other skills or characteristics that are needed to successfully commercialize a food processing innovation.

Each innovator identified up to five stakeholders who helped with the commercialization of their innovation. The stakeholder interview explored similar questions to those listed above, as well as the services they offer to innovators.

Ethics approval was obtained from Brandon University Research Ethics Committee (BUREC) for this study. We ensured confidentiality and accuracy by inviting innovators to review the draft case study first, before it was circulated to other participants for validation.
Solberry Incorporated is a privately owned Manitoba based company that processes seabuckthorn berries into an all-natural puree with no added sugar, colour, water, flavour, or preservatives. The company is fully GMP (Good Manufacturing Practices) and food handler certified. The ancient seabuckthorn fruit possess a number of health and nutritional benefits and grows on a shrub that can survive harsh climates. Solberry began its research and development on the viability of the product in 2011 following months of discussion with the Food Development Centre. There are currently 3 employees working for Solberry Incorporated, which is based in Winnipeg, Manitoba. Mila Maximets, CEO of Solberry, founded the company after discovering the potential for growth of Seabuckthorn berries in Manitoba at the Green Lifestyle show in 2010. Mila grew up in the Ukraine where the seabuckthorn berry is frequently used for nutritional and healing purposes. Solberry’s goal is to bring pure nutritious foods, Canadian grown and processed, to Canadians.

Solberry acquires their berries from local farmers who produce the highest quality seabuckthorn berries in the world. Solberry works with orchards that harvest on average fewer than 6 acres of seabuckthorn each. All seabuckthorn is grown without the use of fertilizers, pesticides or herbicides.

Market / Customers

Solberry’s products are available for purchase through their website, as well as health food stores across Canada, from Alberta to Ontario.

Position in industry

Solberry is a new company with a unique and innovative product. It is the largest seabuckthorn processing company in North America, processing seabuckthorn berries on an industrial level rather than a cottage scale. Seabuckthorn puree is also produced in Asia and Eastern Europe.

Competitive Advantages

• All natural puree: free of chemical additives.
• Highly nutritional - Seabuckthorn is considered one of the world’s most nutritionally complete foods, with a range of vitamins, minerals, essential fatty acids, plant sterols, flavonoids, protein and fibre.
• High quality purees - pure, colour, taste. Canadian grown & sold.

Awards

2014 Food Innovation Award
2012 MFPA (Manitoba Food Processors Association) best new product (small business)
2012 Innovate Manitoba Pitch
CASE STUDY: SOLBERRY INCORPORATED: SEABUCKTHORN PUREE

Commercializing a New Food Product

PRODUCT / PROCESS INNOVATION

Solberry Seabuckthorn Puree

The Innovation:

Solberry’s seabuckthorn puree is innovative because it is one of several seabuckthorn products breaking through as a new product in North America, although seabuckthorn is well known in Eastern Europe and Asia. Their puree is also innovative because their unique process creates a distinctly different product from others on the market.

The Product:

Solberry’s seabuckthorn puree is innovative as a product for several reasons; it is made from high quality, whole Canadian grown berries; and their proprietary process creates a pure, smooth, naturally brightly coloured puree, whilst retaining the nutrition profile of the berries. The product is pure pureed seabuckthorn berries, with no added sugar or water. Solberry’s products are preservative free, a result of the high levels of tocopherols, a naturally occurring preservative within the berry.

The Process:

Solberry Incorporated is currently processing their berries into puree at the Food Development Centre (FDC) using a proprietary method developed by the FDC and perfected in cooperation with Solberry. This process ensures that the puree does not separate, without adding sugar or water; it also results in a smooth, naturally brightly coloured puree.

INNOVATION & COMMERCIALIZATION TIMELINE

Figure 1 gives a simplified representation of the milestones in developing and commercializing Seabuckthorn Puree, as identified by Solberry and their stakeholders. The milestones are organized on a timeline from the idea for a Seabuckthorn product to the present day. They are also categorized according to the stage of the commercialization continuum they were most related to. More details on the progress through commercialization are given in the “Milestones” section below as well as in the sections on how each stakeholder was involved in the commercialization process.
Figure 1.1 Solberry Simplified Innovation & Commercialization Timeline

<table>
<thead>
<tr>
<th>Years</th>
<th>Idea/Research</th>
<th>Planning/Finance</th>
<th>Product Process Development</th>
<th>Scaling Up to Commercial</th>
<th>Promotion/Marketing</th>
<th>Sustaining/Growing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Found Seabuckthorn, oil?</td>
<td>Incorporated</td>
<td>FDC, Berries - Trail Run</td>
<td>Production at FDC</td>
<td>Vita Health</td>
<td>Pitch Day, Calgary Store</td>
</tr>
<tr>
<td></td>
<td>Grower Thrasher System</td>
<td>Conference in Germany</td>
<td>Teas, Brandon Growers</td>
<td></td>
<td>Marilyn Denis Show</td>
<td>Selling Ontario</td>
</tr>
<tr>
<td></td>
<td>Funding for Prod. Dev.</td>
<td></td>
<td>Bars, Sask Growers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oil, New Berry Varieties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too Small - Need to Expand</td>
</tr>
</tbody>
</table>

*Darker shading indicates more intense activity*
Milestones:

- **Solberry Seabuckthorn started in 2010**, when an investigation into making seabuckthorn oil for an existing cosmetics company led to the FDC and a realization that the plant is grown in the Prairies. This quickly turned to an interest in making seabuckthorn puree.

- **Solberry benefited from years of basic research on seabuckthorn at the FDC and elsewhere in Canada.** It took 9 months to produce the first puree at FDC in 2011, from berries provided by PFRA (Prairie Farm Rehabilitation Administration). The process and product has improved incrementally over the years.

- **Solberry has built their sales and production over the years.** A key event was attending an international Seabuckthorn conference in 2013, which confirmed that they have world leading product and motivated them to set their sights on increasing their production capacity.

- **Through their growth as a company, Solberry has been contacting and developing relationships with seabuckthorn growers with help from FDC and PFRA; revitalization of this crop has required innovation in growing and harvesting as well.**

- **Since 2011 they have been marketing their puree, building sales through farmers markets, shows, and retail outlets.** Publicity through winning the Innovate Manitoba Pitch Day and Food Innovation award (FDC) have helped raise awareness of seabuckthorn puree.

- **Solberry is aiming to grow through developing new products and expanding markets.** However, their growth is limited by their access to seabuckthorn berries.
Stakeholders

For the purpose of this study we have defined stakeholders as any person or organization that has helped Solberry on its path to commercialization. Examples of stakeholders include but are not limited to: family members, scientists and researchers, prototype developers, government agencies, economic and business professionals, funders/bankers, and agricultural associations. The five key stakeholders identified by Solberry are described below, together with the services they offer and how they assisted with innovation and commercialization.

Food Development Centre
(Alphonsus Utioh)

Description:
The Food Development Centre (FDC), located in Portage la Prairie, is a Special Operating Agency of the Province of Manitoba. The facility assists the Agri-food industry and entrepreneurs with the transformation to commercialization through research and development of agricultural commodities, as well as value added food products. The centre offers entrepreneurs access to expertise, pilot plant facilities, and research. The Food Development Centre's clients range from first time entrepreneurs to global corporations.

Services Offered:
The Food Development Centre's pilot plant is Canadian Food Inspection Agency licensed for processed food production, allowing food companies to use the facility as a food business incubator to develop, produce, and market their products. The FDC has conducted a number of industrial research and development projects that focus on functional foods and nutraceuticals. The FDC's facilities provide the essential flexibility to conduct a wide variety of research and development projects in a number of different disciplines that use a vast diversity of processing techniques.

Their Involvement:
The Food Development Centre started working with Solberry from the beginning. FDC already had existing knowledge of the seabuckthorn plant and helped Solberry throughout the product process development and scaling up to commercial. The Food Development Centre also provided Solberry with networking, connecting them with farmers, and others in the industry. FDC has also been crucial to Solberry's success by providing them with mentorship and advice.
Indian Head Research Farm, AAFC (Bill Schroeder)

Description:
The Indian Head Research Farm is a sub-station of the Swift Current Research and Development Centre which is one of Agriculture and Agri-Food Canada’s (AAFC) network of 20 research centres; its activities currently focus on dryland farming systems. The Agroforestry Development Centre was transferred to the Indian Head Research Farm in 2015.

Services Offered:
The Indian Head Research Farm provides services focused on improving production and management practices, protecting the environment and stimulating biodiversity and supporting sector competitiveness through research.

Their Involvement:
Bill Schroeder became involved with Solberry early on to provide technical support regarding the seabuckthorn plant. He also provided networking support to Solberry, connecting with growers and others in the industry. Indian Head Research Farm provided Solberry with seabuckthorn berries for a trial run in order to set a benchmark for their puree, and provide advice and support to Solberry when needed.

Industry Research Assistance Program (IRAP) Advisor
http://www.nrc-cnrc.gc.ca/eng/irap/services/advisory.html

Description:
The Industrial Research Assistance Program (IRAP), a mandate within the National Research Council of Canada (NRC), is a federally funded program that aims to stimulate wealth and innovation in Canada. NRC-IRAP’s mission is to provide small and medium sized enterprises with a comprehensive collection of innovation services and funding in order to accelerate their development. IRAP manages six key sectors: agri-food, aerospace, construction, manufacturing, energy, and environment. The predominant focus of IRAP’s agri-food sector includes the fields of general agriculture, food and bio products that are primarily in Manitoba.

Services Offered:
The Industrial Research Assistance Program offers funding, personalized advisory services, and partnership and networking opportunities. IRAP’s advisors create a personal working relationship with its clients, as expert counsel is a key service the organization has to offer. IRAP assists its clients to establish a business plan with the costs of commercialization in mind. IRAP advisors facilitate connections and networking opportunities between their clients and other supply chain companies, as well as educational institutions, development agencies, and industry associations on a regional, national, and international level. The organization offers funding to companies that meet the necessary criteria and possess the desired capabilities with a strong potential to achieve their objectives.

Their Involvement:
IRAP has been involved with Solberry throughout the entire commercialization process. IRAP initially became involved with Solberry to provide them with technical and business advice. However, later in partnership with FDC, IRAP also provided Solberry with funding to continue to research potential product using seabuckthorn.
Seabuckthorn Grower
(Lee Robins)

Description:
Lee Robins produces seabuckthorn shrubs and sells their berries to food processors. Lee has obtained his PFRA food certification. Prior to his establishment as a seabuckthorn producer in 2002, Lee gained a vast experience in farming. In 2007 he developed a machine that would harvest the seabuckthorn berries more efficiently and effectively. Lee Robins is involved in the production of seabuckthorn shrubs from the initial growing stages to storage of the berries before distribution. Lee prunes the bushes by hand in the fall, a very labour intensive job. Following the pruning stage, the berries and branches are placed in a freezer before they go through the cleaning process. The cleaning process cleans the berries and leaves and also separates them from the branches and one another. This harvesting process generally takes about a month to complete.

Their Involvement:
Lee Robins became involved with Solberry close to the beginning of their commercialization process. He provided technical support with regards to the plant, and harvesting methods. Robins also helped Solberry by providing information about the previous seabuckthorn industry in Canada. He continues to work with Solberry as a seabuckthorn grower.

The Light Cellar
(Malcolm Saunders)
http://thelightcellar.ca/

Description:
The Light Cellar is a Calgary based company that processes and retails health food products. The company sells and produces a diverse spectrum of superfoods and herbs that are sustainably harvested and fairly traded.

Services Offered:
The Light Cellar offers guidance and expertise to its clients as they work to add superfoods into their daily nutrition regime. The company offers classes, events, and workshops in order to support and educate its clients in their journey to incorporating superfoods into their way of life. The Light Cellar’s classes and workshops focus on a number of aspects regarding superfood nourishment, including the foundations of nourishment, the process of fermentation, superfood recipes, and superfood healing.

Their Involvement:
The Light Cellar is one of Solberry’s earliest customers and is currently the largest retail seller of Seabuckthorn puree. The Light Cellar does promotion for Solberry at their store through classes and demonstrations; and also uses the puree in some of their value-add products.
Barriers and Gaps

A key purpose of this research is to identify gaps and barriers experienced by innovators on their road to commercialization. Below is a list of specific gaps and barriers faced by Solberry as they commercialized their puree. The barriers and gaps identified have been ordered by the stages of commercialization.

Planning/ Finance

• No specific financial barriers were identified

Product Process Development

• Food Development Centre is a very important resource for food processors, however it is expensive to use and does not always have the necessary equipment. This can reduce efficiencies and increase cost. It can also take a long time to get in to use the facility.

Scaling up to Commercial

• Seabuckthorn has a long history in Canada. This creates a unique challenge for Solberry because there was a negative history between growers and processors that they had to navigate.

• The seabuckthorn plant is a challenge because it takes a long time to grow to production size, and mechanization of seabuckthorn harvesting is at the beginning stages.

• Solberry also faces a barrier around securement of raw materials at a price that is good for the growers and allows them to make a profit.

Promotion/ Marketing

• Regulatory requirements also have created a barrier for Solberry because they require double blind studies before a health claim can be made about the puree. This studies are very costly and time consuming to conduct.

• Marketing seabuckthorn in North America is a challenge because it is a relatively unknown product with an unfamiliar taste. Therefore, a lot of consumer education is often required before sales can be made.

• Solberry also experienced challenges related to competitors that produce a lesser quality product. This can create a negative name for seabuckthorn and make it harder for Solberry to fight a negative image of this plant.

Sustain/ Growing

• Solberry is currently processing their berries at the FDC, this facility is intended for pilot, rather than commercial scale production. Solberry would gain from having access to a processing facility with lower costs and economies of scale.

• Solberry has to be careful to keep their marketing efforts balanced with the available berry supply and price.
Solberry Inc. started in 2011 and is selling their products online and in retail stores across Canada. Solberry’s product process innovation was their seabuckthorn puree. This puree is different from others on the market because it has no added water or sugar. They also use the whole berry, which provides greater nutritional value. The process was developed at the Food Development Centre and manufacturing continues there.

Solberry identified five stakeholders who helped them through their commercialization process. The Food Development Centre helped develop their product process as well as provided a facility for scaling up to commercial production. Indian Head Research Farm (AAFC) was primary involved in providing berries for research, planning and networking, while IRAP provided business advice and funding for research. Solberry also identified two members of their supply chain as stakeholders, a grower and a retail store. In addition to their role in the supply chain, both these stakeholders provide Solberry with support and feedback on the product.

Finally, this case study highlighted gaps and barriers specific to Solberry’s commercialization of their innovation. Solberry and their stakeholders identified most gaps and barriers related to sourcing seabuckthorn berries to produce their product. Solberry would gain from having access to a processing facility with lower costs and economies of scale. Furthermore, most participants also recognized that promotion and marking is a challenge because of the lack of familiarity with seabuckthorn in North America.

As Solberry moves forward they are looking at ways to make different flavoured purees and new products using the seabuckthorn plant, as well as expanding their market.