

CASE STUDY

CRICK NUTRITION: CRICKET PROTEIN POWDER

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

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Rural Development Institute, Brandon University

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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 Crik Nutrition. The report provides a brief overview of the company, describes their product/process innovation, and provides an explanation of their commercialization timeline. The report covers the five stakeholders identified by the innovators, who they are and how they helped. The report describes gaps and barriers identified by the innovator and stakeholders that are specific to Crik Nutrition. Finally, the report concludes with a summary.



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.

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.

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.

Crik Nutrition

The Company

<https://criknutrition.com/>

Crik Nutrition is a privately owned premium health food company based in Manitoba. Crik Nutrition manufactures protein powders using processed crickets as its primary source of protein. Crickets contain a number of nutritional values that exceed that of our more traditional sources of protein such as meat and fish. Following the formation of the company in 2014, Crik Nutrition quickly decided to sell its product online in order to ensure the best service, quality, and price. The company immediately attracted the attention of the media. Beginning with an interview with a local Winnipeg newspaper, major publications, including the Globe and Mail and Men's Fitness, soon featured Crik Nutrition. The company has won numerous awards including one from Futurpreneur Manitoba and the Global Entrepreneurship Network. There is currently one full time employees working at Crik Nutrition in Winnipeg, MB. Crik Nutrition's mission is to continue leading the supplement industry with the highest quality cricket based products possible.

Products

- Vanilla Crik Protein Powder
- Sweet Vanilla Crik Protein Powder
- Chocolate Crik Protein Powder

Raw Materials

Crik Nutrition receives their crickets from Entomo Farms, a farm East of Toronto, ON that raises crickets for human consumption. Crickets are an ideal protein for a protein powder because of their great nutritional value. In addition to their ample quantities of protein, crickets are rich in iron, calcium, B12, B6, omega, zinc, and magnesium. Crickets also produce essential amino acids. Unlike other protein sources such as beef and poultry, none of the cricket are wasted as it is processed.

Market / Customers

Crik Nutrition's products are sold online and in premium health food stores as a premium health food product; the company ships all over the world and door-to-door across North America.

Position in Industry

Crik Nutrition is a new company with a one of kind product in North America. The company offers protein powder with crickets as the major ingredient.

Competitive Advantages

- Sustainable - Crickets grow quickly and require little food, water, and space. They also produce very low levels of greenhouse gases.
- Nutritious - Contain protein, iron, calcium, vitamin B12, vitamin B6, omegas, zinc, magnesium and a range of amino acids.
- Whole food – gives nutritional benefits and minimizes waste - 80% of the cricket is used for consumption compared to about 40% for beef.
- Primarily organic - most of the ingredients used in the product are organic.

Awards

Spin Master Innovation Fund where they were one of 11 startups to received \$50,000 loan.

Global Entrepreneurship Network identified Crik as 1 of the World's 50 top Startups in 2015.

Commercializing a New Food Product

PRODUCT / PROCESS INNOVATION

Cricket Protein Powder

The Innovation:

Crik Nutrition's product process innovation centers on adding crickets as the number one ingredient in their protein powder. Crickets are a non-traditional ingredient for protein powder and provide the customer with sustainable and nutritious product.

The Product:

Crik Nutrition's vanilla and chocolate protein powder are similar to other protein powders, however, the ingredients used set them apart. Most protein powders rely on whey or soy, but Crik uses crickets as the major source of protein. In addition to protein, crickets provide significant amounts of iron, calcium, B12, omega's and essential amino acids. The protein powder is designed to be GMO-free, gluten-free, soy free and lactose free, containing cricket protein, plant proteins (pea, rice and hemp), flaxseed for its fiber and nutritional profile, natural flavour and natural sweeteners.

The Process:

Crik's protein powders are made by an established contract manufacturer; GFR Pharma Ltd. The main innovation for Crik is the formulation of the product and the use of crickets as a main ingredient, rather than the details of the manufacturing process. Crik is different from the other companies in this study in that they use an out of province contract manufacturer who take care of sourcing ingredients, manufacture, packaging and quality control; all to Crik Nutrition standards.

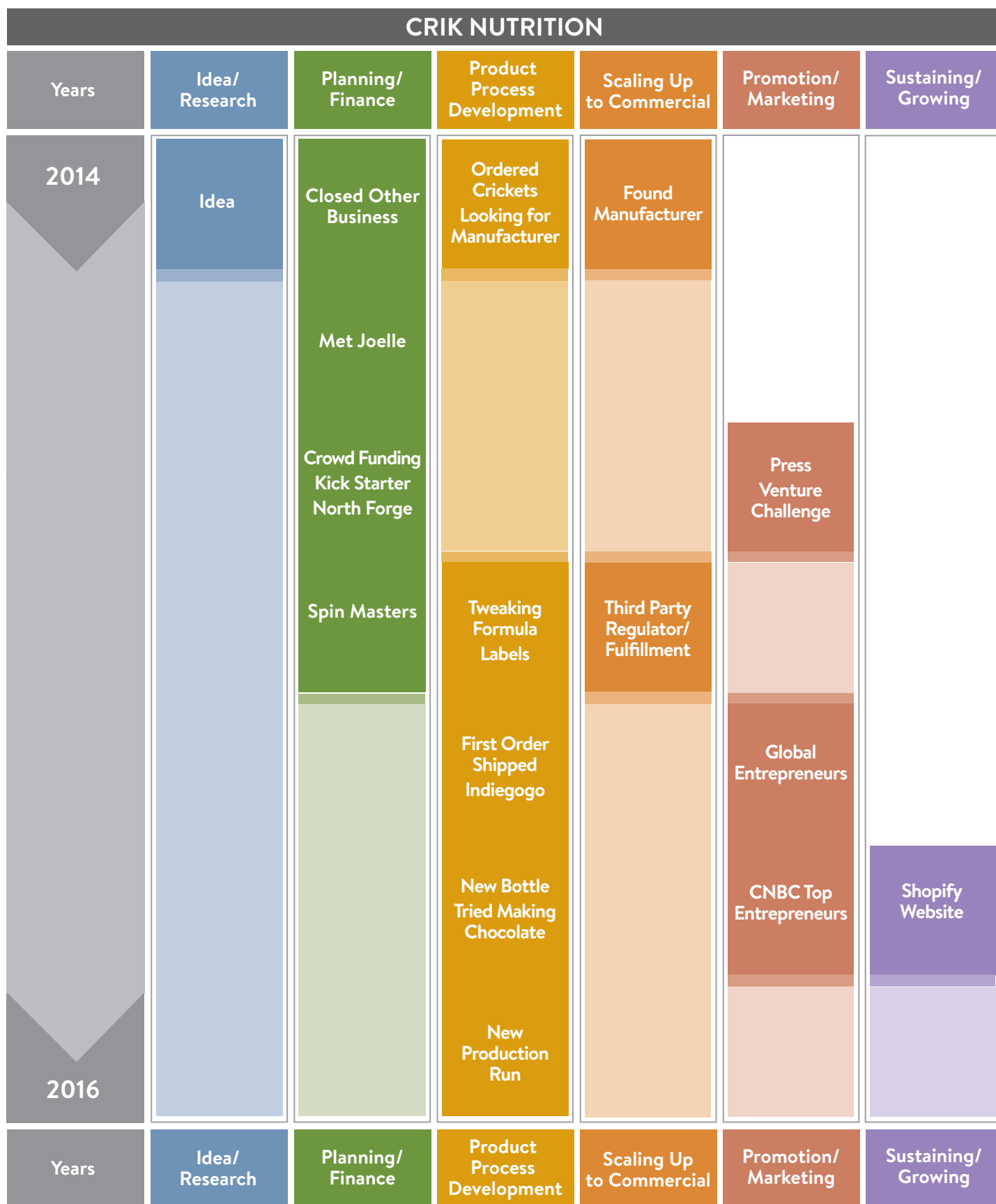
INNOVATION & COMMERCIALIZATION TIMELINE

Figure 1 gives a simplified representation of the milestones in developing and commercializing cricket protein powder, as identified by Crik Nutrition and their stakeholders. The milestones are organized on a timeline from the idea for a cricket protein powder 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.

Milestones:

- Crik Nutrition started with an idea in late 2014, to start a business using crickets as the main ingredient in a protein powder.
- After several months of research Crik found a source of "human consumption" crickets, Ontario's Entomo Farms; and a contract manufacturing company, GFR Pharma.
- From the beginning Crik has sought advice and funding to establish the company and business plan, with a number of successes such as crowd source funding, followed by a Spin Masters award in 2015; which gave both financial and mentorship support.
- Through early 2015 Crik worked with GFR Pharma, Source Nutraceutical and others to develop and refine their formulation for their cricket based protein powder, with the first production run in the GFR facility in October, 2015.
- Further product development to perfect taste and texture, led to new vanilla and chocolate formulations, that is new packaging and products, in mid-2016.
- Crik Nutrition launched their Shopify website in January of 2016 and continues to build their online presence (and retail sales).

Figure 1.1 Crik Nutrition Simplified Innovation & Commercialization Timeline



*Darker shading indicates more intense activity

Stakeholders

For the purpose of this study we have defined stakeholders as any person or organization that has helped Crik Nutrition 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 Crik Nutrition are described below, together with the services they offer and how they assisted Crik Nutrition.

Entomo Farms (Jarrod Goldin)

<http://entomofarms.com/>

Description:

Entomo Farms produces, harvests, and distributes cricket protein for the purpose of human and livestock consumption. The company's mission is to motivate people across the globe to consume insect protein and make a significant contribution to providing protein for the estimated 9 billion world population by 2050.

Services Offered:

Entomo Farms offers a range of retail, private label and wholesale cricket and mealworm products for human consumption, including chocolate covered crickets for your next event. They also offer pet-food, and provide graded feed alternatives to fish and chicken farmers with certifiably organic insect food for their fish and chickens.

Their Involvement:

Entomo Farms has been involved with Crik Nutrition since the beginning, providing cricket powder, with the required nutrient profile. They were involved with technical support regarding crickets and cricket powder, and supported Crik with research and development. Entomo Farms was also important in providing Crik Nutrition with mentorship, encouragement and industry advice. Both companies have assisted one another with promotion and marketing on social media.

GFR Pharma Ltd. (Julie Garcia)

<http://www.gfrpharma.com>

Description:

GFR Pharma is a privately held company, recognized in the Canadian, U.S. and international markets as a pre-eminent, full-service contract manufacturer of health supplements. Their specialties include formulation, manufacture and packaging of protein products, sports performance products, organic whole food and greens powders, functional foods, condition-specific nutraceuticals, capsules and tablet delivery systems. GFR Pharma is also a Registered Dairy Processing Establishment, a Certified Organic facility and a Kosher Check certified manufacturer and packager.

Services Offered:

GFR Pharma offers a full-service solution to their customers including formulation, sourcing of ingredients to meet product features and therapeutic benefits, product development, prototype samples of alternate formula variations for taste panel testing, manufacture and packaging. Their customers are brands wanting to bring new supplement or functional food products to the market.

Their Involvement:

GFR Pharma was involved with Crik Nutrition from the beginning and was specifically involved in the product process development and scaling up to commercial. They provided technical expertise to develop a product meeting the ingredient requires set out by Crik Nutrition. They continue to work with Crik to identify new products and manufacture and pack Crik protein powder in their facility.

Source Nutraceutical Inc. (Marcel Fiset)

<http://sourcenutra.com/>

Description:

Source Nutraceutical Inc. is an organization that assists brands entering Canadian markets. Source Nutraceutical Inc. currently employs a team of 19 people at its Winnipeg headquarters, who work with both startup companies and established international corporations. Source Nutraceutical offers a Health Canada licensed warehouse that receives licensed products before they are distributed into the Canadian market. The company offers expertise in natural health products, supplements, drugs, foods, cosmetics and medical devices. It ensures that its clients' product have satisfied all the necessary rules and regulations for success in the Canadian Market.

Services Offered:

Source Nutraceutical's priority is to determine and define all regulatory concerns for its clients. It assists its clients with filing for the necessary licenses and guides them through the rules and regulations of the Canadian market. Source Nutraceutical provides its clients with the opportunity to participate in its clinical trials program in order to generate the necessary data to support each product and consequently gain Health Canada's endorsement. The company also provides a graphic design team that strives to establish and maintain each client's brand identity. Source Nutraceutical provides its clients with a team of strategic consults that is comprised of specialists with expertise in both the private and public sectors that will quickly prepare products for the market while efficiently reducing the risks.

Their Involvement:

Source Nutraceutical started working with Crik Nutrition at the beginning of their commercialization process. Their primary role was to help ensure Crik met all regulatory requirements and to provide product distribution to online customers. They also provided advice on product development, and helped streamline product labeling.

North Forge (Jeff Ryzner)

www.northforge.ca

Description:

North Forge is an innovation-based economic development organization located in Winnipeg, Manitoba. The Eureka Project, AssentWorks, Ramp UP Manitoba and the Startup Winnipeg program came together to form North Forge as a collaborative innovation network. North Forge seeks to provide entrepreneurs in Manitoba with mentors, experts, a financial start up program and access to its fabrication lab. North Forge has a number of facilities available to entrepreneurs including office space near the University of Manitoba, a video equipment lab, and an event centre.

Services Offered:

North Forge offers a variety of services to entrepreneurs in order to acceleration innovation and commercialization in Manitoba. The organization's startup program takes entrepreneurs from concept to market. North Forge establishes entrepreneurs in the marketplace and builds sustainable, investor-ready companies with commercialization scale up plans. During the process of constructing the concept into a product, North Forge provides a variety of tools and equipment in its Fabrication Lab for entrepreneurs to produce, modify, and test their prototypes as quickly as possible. Finally, North Forge assists entrepreneurs with grant applications to ensure companies are eligible and that the research is relevant and realistic.

Their Involvement:

North Forge was involved with Crik Nutrition primarily through path finding, helping access grants and mentorship. They provide Crik with market intelligence work, marketing support and basic operations support.

Futurpreneur Canada (Joelle Foster)

<http://www.futurpreneur.ca/en/>

Description:

Futurpreneur Canada is the only Canadian non-profit organization that provides financing, mentoring, and supports to aspiring young business owners aged 18-39. Futurpreneur Canada has been an active organization for more than 20 years. The organization has established 288 startups in Manitoba with a 91% success rate. Futurpreneur Canada's vision is to aid young entrepreneurs to thrive within a fully supportive Canada, and create economic and social value for Canadians and the world.

Services Offered:

Futurpreneur Canada provides young entrepreneurs with pre-launch counsel, financing, and mentoring. They provide startups with a variety of guidance from developing a marketing plan to instruction on business finance. The organization supports young business people with up to \$45,000 in financing. Futurpreneur's mentoring program offers expertise, resources and skill building opportunities for up to two years. The mentorship program seeks to shorten entrepreneurs' learning curve, identify and grow their business network, and identify opportunities and risks through the guidance of an expert. In addition, Futurpreneur Canada offers a large number of free online resources for entrepreneurs.

Their Involvement:

Futurpreneur connected with Crik Nutrition because they saw Crik as an innovative business and wanted them to apply for the Spin Master Program. Crik was one of 11 businesses chosen for Spin Master. Futurpreneur continues to provide Crik with advice, and mentorship.

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 Crik Nutrition as they commercialized their protein powder. The barriers and gaps identified have been ordered by the stages of commercialization.

Planning/ Finance

- Crik Nutrition faced a challenge with accessing grants and government funding. Grant applications are very time consuming with no guarantee of receiving funding. Grants and funding should be more accessible, with it being easier for a company to apply without seeking expert help to prepare applications.
- There is a need for mentorship with people in the industry who have successfully commercialized a product in the same area that as the innovator.
- There are little connections to Accelerators / Angel / VC capital and mentorship.

Product Process Development

- Crik has a novel product this creates a challenge around regulations and customers knowledge of their product.

Scaling up to Commercial

- The only challenge identified in scaling up to commercial was the decision making issue of ensuring balanced growth of the company at the correct pace; to maintain growth but not over-extend.

Promotion/ Marketing

- Crik Nutrition is past the initial “incubation” stage. In Manitoba it is difficult to get support to continue to develop and grow beyond the start-up phase.

Sustain/ Growing

- Since Crik Nutrition is primarily an internet based company with manufacturing and distribution conducted by third parties there are few incentives to keep Crik in Manitoba. Manitoba needs to create an environment or incentive to keep companies and entrepreneurs in the province.

Summary

Crik Nutrition started in 2014 and is selling final products online direct to the consumer. Crik Nutrition had an accelerated commercialization process because they do not manufacture and distribute the product themselves. Instead, they use third parties to manufacture and distribute the product to consumers around the world. Throughout the commercialization process, Crik Nutrition has refined their product and process and added flavours to their product line.

Crik Nutrition identified five stakeholders who helped them through their commercialization process. Entomo Farms was identified as a stakeholder who helped Crik from the very beginning and continues to work closely with them. GFR Pharma was crucial to the product process development and production of Crik Nutrition protein powder. Source Nutraceutical was involved throughout scaling up to commercial with regulatory support and distribution services. Futurpreneur Canada and North Forge both provide networking and mentoring support throughout Crik Nutrition commercialization process.

Finally, this case study highlighted the gaps and barriers specific to Crik Nutrition's commercialization of their innovation. Crik Nutrition and their stakeholders identified the most gaps and barriers around planning/financial. Although Crik received help with planning and finance, they identified that it was challenging and time consuming to access government funding.

As Crik Nutrition moves forward they are looking to expand both their product line and markets.



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