1. **Applicant Details**

Name and Title of Lead Applicant

Ms Jane Smith

University/Research Institute

University of XXXXX

Address

Postal Address

Position

Postgraduate Student

Your Email Address

j.smith@XXXX.ac.uk

Your Mobile Number

07xxxxxxxxx

Company Twitter

@xyz

Company Facebook

Company Linkedin

Name and Institution of your PhD Supervisor/Principal Investigator

Professor Joe Block

**For students:** I can confirm that my Supervisor/PI has given me permission to enter this Competition (tick box to confirm) X

**For staff:** I can confirm that I have spoken to my TTO and they are supportive of the application (tick box to confirm)

1. **Your Team**

Same as above, please include any others involved

Professor Joe Block

University of XXXXXXXXXXX

Building A

Room B

Town/City

Email: j.green@XXXXXXXX.ac.uk

Phone: 07xxxxxxxxx

1. **Programme applied for (Please tick one)**

* Converge Challenge - plan to incorporate a company within 12-18 months X
* KickStart – early stage idea
* Social Enterprise –a positive impact on social or environmental issues

1. **Title of Innovation/Business Idea**

* Including Proposed company name if you have one
* **Re- freezable ice-cream**

1. **Non-confidential summary of your Innovation/Business Idea (max. 100 words – in laymen terms)**

Once defrosted, ice-cream cannot be frozen again as the taste changes, becoming sickly sweet. Re-freezable ice-cream uses a patent-pending formula of bi-carbonate of soda activated once the ice-cream is placed back in the freezer, ensuring production of air bubbles and therefore restoration of its taste.  We are targeting the £404 million market (in the UK alone). Our business model will be to enter into license agreements with the growing group of artisan ice-cream manufacturers such as Gelupo, Sorbitium Ices, Ginger’s Comfort Emporium and Affogato and supply them with the additive to be used during the manufacturing process.

1. **Your product or service (max. 450 words). Please describe your idea.**

* What problem does it solve?
* Who are your competitors and why is your idea better?
* What stage of development is it at (idea, proof-of-concept, prototype, fully developed)?
* Do you have intellectual property protection?
* What previous funding you had (for e.g. Proof-of-Concept, Follow-on Fund, RSE Enterprise Fellowship, other)
* Please include an artist’s impression or image - yes

**Problem**

Ice-cream is made from milk, cream and sugar but another very important ingredient

is air- between 30% and 50%. Air is an essential to the taste but if the ice-cream has been defrosted the air bubbles disappear. If the ice-cream is then frozen again, the taste of it is completely different, becoming sickly sweet.

This creates challenges for the logistics of the delivery and storage. Before reaching supermarkets and other retail outlets ice-cream has to be stored at around -25C to prevent deterioration of the product. Most cooling units in shops are set at around -18C but this can fluctuate and ice-cream requires the temperature not to fluctuate because at above -12 there is significant reduction in taste of the ice-cream making it icy and coarse.

This results in significant costs for both retail units and manufacturers and also makes ice-cream an environmentally unfriendly product in its use of energy.

**Product**

Refreezable ice-cream is a novel food product developed in collaboration between scientists from the Schools of Engineering and Life Sciences at XXX University. The product is an additive based on the derivative of bi-carbonate of soda, added during the production of ice-cream and enables us to:

* refreeze ice cream without the loss of taste quality
* store ice-cream at much higher temperatures between -4 to -8C using less energy.

We have demonstrated that it works within the laboratory environment. In small focus groups  99% of participants noticed the exceptional quality of the ice-cream containing our additive. So far the project has been funded through a grant from XXX and we are in process of applying for the XXX Follow-on Fund. We have recruited 2 external advisers with substantial experience of the Food and Drink industry who have indicated an interest in becoming potential board members; one from food manufacture and one from retail.

**Competition**

There is currently only indirect competition for the Re-freezable ice-cream. Wally’s Great Value ice cream sandwich melts very slowly, but contains a number of additives such as corn syrup, as well as having more water and air than premium brands thus affecting the taste.

**IP**

We have developed an additive based bi-carbonate of soda that is activated when the temperature drops when ice cream is placed in the freezer. The manufacturing process involved in adding the additive to the ice-cream is protected by a patent application GB687231298 filed in October 2014. The formula of the additive is kept as a trade secret. All intellectual property belongs to XXX University and we have initiated discussions with the Technology Transfer Office who are highly supportive of our application to Converge Challenge and our case for the formation of a spin-out company through appropriate university channels.

1. **Your target market (max. 250 words)**

* What is your market?
* How will you get your product to market?
* How will your business make money?

The global ice cream market is estimated to reach $78 billion in 2018. The classic ice-cream market is about 80% of this with the rest being novelties such as frozen yoghurts and sorbets. The largest players in the field are Nestle and Unilever who are responsible for roughly a third of the market. However, in recent years there has been a significant growth of artisan brands that offer a variety of unusual flavours as well as many healthier options. An example of which would be Gelato ice-cream, which contains less fat but still has a rich taste.

Re-freezable ice-cream is planning to initially target these smaller artisan brands offering to them a naturally derived additive that would help to reduce their need to invest in expensive equipment and also help them grow market share in areas where infrastructure is less developed.

We have already established a conversation with a 3 Scottish ice-cream manufacturers (company A, company B and company C). Company A has provided us with samples of ice-cream that we were able to use with our focus groups.

Our aim is to develop these relationships and form a partnership with ice-cream manufacturers. We would license the IP related to the manufacturing process to them. We envisage that the increased cost of manufacturing would be around 2-3%, although this cost will be borne by the manufacturer.   We anticipate that licence fees and royalties on sales would enable us to reach turnover of around £3M in year 3.

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1. **Benefits to the customers (max. 200 words)**

* Who are your customers?
* Are they different from the end users?
* Have you spoken to your customers and/or end users?

We will initially target the UK ice-cream market, which is predicted to grow by 12.8% until 2017 from a base of £404 million in January 2015. We will primarily target the growing group of artisan ice-cream manufacturers such as Gelupo, Sorbitium Ices and La Grotta Ices, which are based in London, Ginger's Comfort Emporium in Manchester and Affogato in Edinburgh.

We are planning to conduct a number of end-user trials, especially at different fairs over the summer period in order to collect end-user feedback.

So far we have been in touch with 3 ice-cream manufacturers, all Scotland-based, and all 3 have expressed an interest in understanding how the product will affect the taste and properties of their ice-creams. One has provided us with samples and allowed access to their R&D facility in order to produce a batch of ice-creams  for focus groups. We are currently negotiating terms with all 3 manufacturers to carry out user trials with other types of ice-cream.  The feedback from our customers indicated significant interest in our product particularly in reduced melting capability of our additive as this would enable our customers to reduce the costs of transport and storage of ice-cream without compromising the quality.

1. **Requirements for development (Please tick all applicable)**

* Finance X
* Contacts X
* Intellectual property advice
* Market research X

1. **For Social Enterprise applications only: Provide a summary of your project’s social aims (max. 200 words)**

“A Social Enterprise is a business which focuses on tackling social problems, strengthening communities, improving people’s life chances or protecting the environment, as opposed to generating income for private individuals or bodies. Whilst social enterprises still aim to generate profits like any other business, those profits are principally reinvested in the business, or in the community, to help further the enterprise’s social aims.”

* Detail the kinds of benefits you would plan to deliver to individuals, the communities and/or the environment.
* What would your organisation plan to do with any surplus profits it generates?

1. **Will your proposed business be selling products or services?** **(Please tick one)**

* Product X
* Service
* Both
* Don’t know

1. **Commercialisation Training Programme**

The Converge Challenge Training Programme will take place in Edinburgh on May 29 – May 31, 2018.  Please indicate whether or not you would like to apply for a place on this free residential course.  YES

.  Please indicate whether or not you would like to apply for a place on this free residential course.  YES

1. **How did you hear about us?**

* University x
* Social Media x
* Posters x
* Other, news story

**Please confirm that you have read our terms and conditions. (Please tick )x**