

Predictive modelling of alcoholic beverage shelf life



Our client is a multinational beverage company interested in identifying and supporting novel approaches to model the shelf life of various products (Ciders, neutral ethanol based and wine based products).

Opportunity

Depending on the maturity of solution, the challenge owner is willing to consider the following commercial arrangements:

- Research Partnership;
- Joint venture;
- Equity investment; and
- Outright IP acquisition.

Other arrangements can be proposed, and will be considered based on their merits.

Solution maturity

The following are of interest:

- New predictive shelf life models;
- Shelf life modelling software packages;
- New accelerated shelf life testing methods

Timelines



Context

Shelf life can be defined as the length of time a product can be stored without becoming unfit for use, consumption or sale. An organisation's ability to predict the shelf life of products directly affects their customer relations. Not only does it build trust with the client as to the quality of the product, but it makes it possible to manage the distribution of fresh product – thus assuring company image.

Shelf life can be influenced by various factors such as chemical, physical, biochemical and microbial. These factors can be broken into intrinsic and extrinsic factors as seen in Table 1.

Table 1: Potential factors affecting shelf life

Intrinsic factors	Extrinsic factors
pH	Temperature
Water activity	Relative humidity
Enzymatic action	Pressure
Micro organisms	Mechanical stress
Concentration of reactive compounds	Light
	Oxygen

Currently there are two approaches towards predicting the shelf life of products namely:

- Testing of existing products by means of accelerated tests and
- Simple empirical formulas that make a substantial amount of assumptions.

Challenge

The challenge owner wishes to identify and support novel approaches to model the shelf life of their various alcoholic products.

Submissions are therefore invited that preferably have the following characteristics, and achieve the following outcomes:

- **Predict** the shelf life of beverages;

- Be transferable to **various** different beverages (e.g. Ciders, wine, spirit coolers etc.);
- Ensure that the solution addresses **multiple** parameters; and
- Demonstrate a **viable and scalable** revenue model.

The above list is not exhaustive, and additional value propositions – determined by you as the solution provider – are absolutely encouraged.

Your submission should include the following:

1. Context

A description of how you perceive the challenges associated with current approaches to shelf life modelling, and the approach you will follow to solve the problem.

2. Value Proposition

How your solution creates a more desirable model (e.g. speed of testing, accuracy of prediction, ease of use or robustness, etc.).

3. Technical Solution

The underlying mechanics of how your proposed solution will achieve the value proposition defined earlier (e.g. machine learning).

4. Desired commercial relationship

A description of the desired relationship you wish to establish with the client. This could be as a subcontracted research organisation, joint venture, technology licensing, and so on. If you have an established commercial technology, please include licensing costs (or other pricing as appropriate).

5. Team experience

The overall capabilities and experience of the team in delivering the solution.

There is no formal template that needs to be used to respond to this challenge. However, solutions that do not include appropriate information in regards to the evaluation criteria above may be disqualified.

Evaluation Criteria

The challenge owner will evaluate proposals, and select a shortlist of candidates with whom to engage further. Criteria include:

- The insight demonstrated of mathematical modelling through either experience or research;
- The ability of the solution to accurately model the shelf life of various beverages (e.g. meet the desired characteristics discussed in this challenge brief, and / or any others identified by you);

- Technical feasibility of the proposed solution;
- Communication and explanation of any associated proprietary or 3rd party intellectual property aspects involved in the proposal; and
- The capability and experience of the respondent and associated track record.

Challenge timelines

The timelines for this challenge are shown below.

Stage	Description	Start Date	End Date
1	Challenge go-live date	20 July 2016	n/a
2	Challenge open period	20 July 2016	25 August 2016
3	Evaluation period	26 August 2016	01 September 2016
4	Feedback to respondents	9 September 2016	n/a
5	Shortlist candidate discussions	> 12 September 2016	-

Submission process

To submit a proposal for this challenge, please visit:

www.solexinnovation.com

For any enquiries, please contact submissions@solexinnovation.com or +27 (0)60 967 3411

Protection of IP

The intention of this challenge is to identify promising new business concepts and support their development and implementation.

It is important that no confidential intellectual property or information is disclosed through this process. This may include pre-existing software, processes, systems or market research that is not publicly available.

By submitting a response, you represent that your response does not, and will not be deemed to, contain any confidential information of any kind whatsoever. RIIS and its project partners will not be held liable for the loss of any intellectual property.

In the event that your solution is selected for further development, the appropriate intellectual property protections will be put in place to support both yourself and the challenge owner.