

TechConnect Ventures  
Sprint Challenge Brief:

## Innovative Application Technologies For Coating Fiber Products With 2D And 3D Surfaces

QUESTIONS?

Contact [challenge@techconnectventures.com](mailto:challenge@techconnectventures.com)

### ABSTRACT

A global leader in the packaging industry wants to identify technologies suitable for applying barrier coatings to fiber-based products with complex geometries (2D/3D) at a high throughput and without damage to the thin substrate. All approaches, including ones originally developed for other applications or industries, are of interest.

### BACKGROUND

Barrier coatings cover surfaces to improve the performance of that material by repelling water, oils, or other undesirables. In order for the coating to be effective, it must cover the surface of an object, a challenging task if the surface has complex geometry.

TechConnect's client, a large multinational packaging company, produces paper and molded fiber containers in various shapes and sizes. To improve the performance of their products, the client intends to coat its fiber-based containers with barrier coatings. To that end, the client wants to uncover coatings application technologies that would be suitable for a high throughput production environment and appropriate for thin (on average less than 0.1 inches thick), relatively small items with simple or complex geometries (2d/3D). Proposed application technologies should be:

- Suitable for different kinds of barrier coatings including aqueous and non-aqueous ones
- Suitable for containers of different sizes, shapes and configurations with minimal reset time needed
  - And/or long continuous webs of fibrous materials
- Able to uniformly coat all intended surfaces of a roughly 12" x 12" test container which may include:
  - Corners
  - Curves & ridges
  - Hinges
  - Depressions ranging in size from under 3" to almost 7" inches deep
- Able to rapidly coat a surface within 2-5 seconds per square foot of substrate
- Able to coat the substrate without damage: (e.g. perforations, indentations, discolorations, burning of the surface, etc.)

The client is interested in all approaches capable of delivering the desired performance including ones adapted from other industries. Likewise, technologies of all maturities will be considered. For relatively mature technologies, the client is targeting a 9-12 month implementation window. For earlier stage approaches, a 24-month development and implementation window is ideal.

Furthermore, while there is strong interest in solutions that can be added into the existing production line, the client will also consider approaches that could require alterations to that line in the future.

The focus of this project is on the application technology and not the coating itself. Consequently, approaches focused exclusively on coatings innovations are out of scope. However, organizations that pair a novel application technology with a proprietary barrier coating may be of interest.

The goal of this sprint is to facilitate contact and interactions between the Sprint sponsor and commercial entities (including Start-ups) or technology developers or research organization/university in this space. Submissions from all viable subject matter experts are of interest including those from academia and commercial entities.

## REQUIREMENTS

Solvers submitting an Entry are encouraged to highlight capabilities in their Submission that meet criteria including:

- Description of proposed technology:
  - Applicable coatings types, e.g. aqueous, non-aqueous, etc.
    - Compatibility with bio-based or otherwise sustainable barrier coatings strongly preferred
  - Ability to handle complex geometries
  - Application speed
  - Appropriate substrates
  - Previous application(s), if any
- Previous experience with FDA-controlled coatings
- Operational footprint and requirements
- Ability to demonstrate on test containers
- Technical maturity

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## BUSINESS OPPORTUNITY FOR SOLVERS

All complete and eligible Entries will be included in an exclusive Innovation Opportunity Report that will be presented to our client. Solvers with well-matched capabilities may be contacted directly by either TechConnect Ventures or the client to discuss potential partnership opportunities, including – but not limited to – demonstrations, consulting, contract research, licensing, and more. Top-rated Entries may also be invited to register or participate in an upcoming TechConnect Ventures event or pitch program.

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## PARTICIPATION RULES & GUIDELINES

Solvers are encouraged to review the [Rules](#) and [Guidelines](#) provided on the Sprint page for details about participation, including submission criteria, eligibility information, and more.

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