



Innovate  
UK



# AI Supply Chain Solution Crosses Industry Boundaries

**Valuechain is a B2B supply chain SaaS platform that enables seamless data flow between manufacturers and their suppliers.**

CEO Nishant Raj shares how an Innovate UK Resource efficiency for materials and manufacturing feasibility study enabled Valuechain to explore waste-derived supply chains for silicates and zeolites providing the opportunity to expand into the chemical industry.

“The feasibility study allowed us to dive into a new sector, validating that our supply chain expertise could be applied beyond our traditional markets.”

## Balancing Scalability, Cost, and Environmental Impact

Valuechain faced a multifaceted challenge. They needed to develop AI-driven solutions capable of navigating the complexities of waste-derived supply chains, while expanding into unfamiliar markets.

Key challenges included creating a system to identify alternative sourcing routes for materials as well as balancing

cost-effectiveness with environmental impact. They also needed to translate feasibility study outcomes into commercially viable products that could potentially contribute to reshoring manufacturing capabilities.

Raj explains:

“We were keen to understand how to map waste-derived supply chains, but every waste stream has a different energy consumption and emission impact. Yes, you can extract materials, but is it scalable?”

## AI-Powered Supply Chain Mapping for Waste-Derived Materials

In a six-month feasibility study, Valuechain:

- Partnered with industry experts including CPI, Procter & Gamble Technical Centres, and European Metal Recycling to bring diverse expertise to the project
- Engaged with Procter & Gamble to understand the specific challenges in sourcing alternative routes for silicates and zeolites
- Leveraged their existing supply chain expertise from aerospace and manufacturing sectors
- Developed an AI-first approach to map potential supply chain routes

The partnerships were key to the project's success, as Raj explains:

**“Our partners came from different industries and had different expertise... we were able to combine our knowledge to address the problem statement, and ensure what we were building had a quick iterative feedback loop.”**

## From Feasibility to Future Opportunities

The feasibility study demonstrated that extracting zeolites and silicates from waste isn't currently feasible due to energy and emissions limitations. However, the knowledge and tools developed during the study have enabled Valuechain to pitch similar use cases to other clients, accelerating their pathway to commercialisation.

Other key outcomes included:

- Demonstrating the step by step process of building a waste-derived supply chain for any source

- Developing an AI-first approach for supply chain mapping
- Creating a working demo platform of supplier networks
- Gaining insights into scaling waste-derived material sourcing
- Forming crucial chemical industry partnerships
- Discovering avenues for business development in sustainable and circular economy initiatives

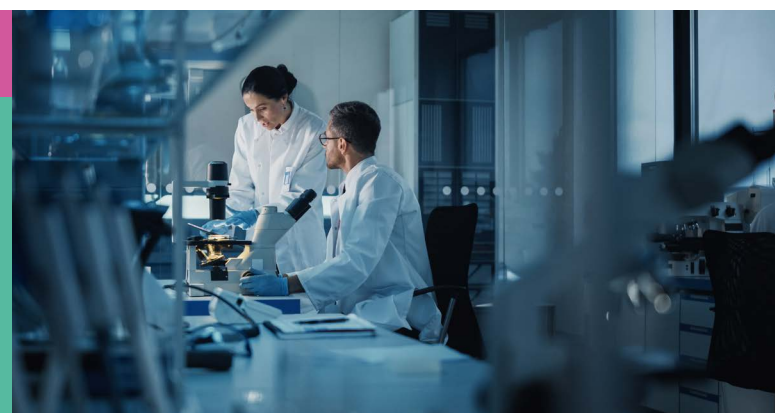
Raj emphasises the long-term impact:

**“For us, it's about understanding the requirements of a new industry and the opportunities around waste-derived supply chain because that could enable reshoring activities and potential circular economy creations. And that opens up whole new avenues of opportunities and disruptions.”**

**Find out more about the Resource Efficiency for Materials and Manufacturing (Resource efficiency for materials and manufacturing) programme.**

## What would Raj say to other businesses applying for funding?

**“Be clear on the value you're trying to drive. Make sure the grant funding route is the right one for you. And don't go it alone, get support from catapults or other centres to help you connect with potential partners. Even if you aren't selected, you get powerful feedback on your idea. If you are selected,**



**you're able to accelerate R&D and build without putting commercial risks on your business.**