Test and validation

Name: Economic ROI Validation
Status: method availiable

Business case

Problem Owner:
Wageningen Social & Economic Reserach

Involved:
Technologie ontwikkelaars

More information?
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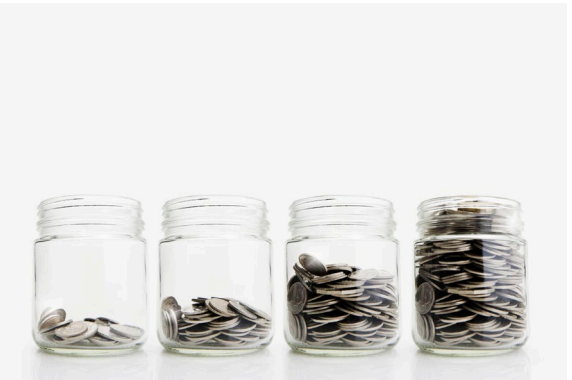
Economic assessment of harvesting robots

NXTGEN Hightech, an economic analysis methodology has been developed to assess the financial feasibility and impact of robotic harvesting solutions. The methodology helps growers, technology developers and investors objectively evaluate the costs, benefits and payback period of robotic harvesting.



Broad knowledge question

How can the economic feasibility of robotic harvesting technology in different cultivation systems be reliably assessed, enabling companies to make better-informed investment decisions?

Approach

The methodology combines:

- A comprehensive Excel-based calculation model integrating fixed, variable and indirect costs with revenues, efficiency and scenario development
- Stakeholder interviews with growers, technology developers, researchers and suppliers to establish realistic input values and assumptions
- Scenario analyses evaluating different future outlooks, including inflation, technological progress and labour market dynamics

Objective

The objective is to provide a transparent, reproducible and sector-wide methodology for systematically assessing the economic value of robotic harvesting technology. The methodology supports decision-making, stimulates adoption and reduces investment risks for companies.

Results and reflection

The methodology demonstrates under which conditions robotic harvesting systems become competitive with manual labour. By providing insight into costs per kilogram of product, payback period, profitability and scenario dependency, the tool delivers both concrete business-economic insights and strategic perspective. The approach has also proven effective as a discussion framework between developers and end users, forming a foundation for data-driven innovation decisions.
The rapport can be found at doi: 10.18174/712911

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Colofon

Leading Partners involved

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