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EAGER: Cyber-manufacturing: Enabling Production as a Service (PaaS)

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Challenges

Aiding new product developers to find suitable manufacturers for production of small batches, and vice-versa.

Finding optimal, cost-efficient, solutions for the customer.

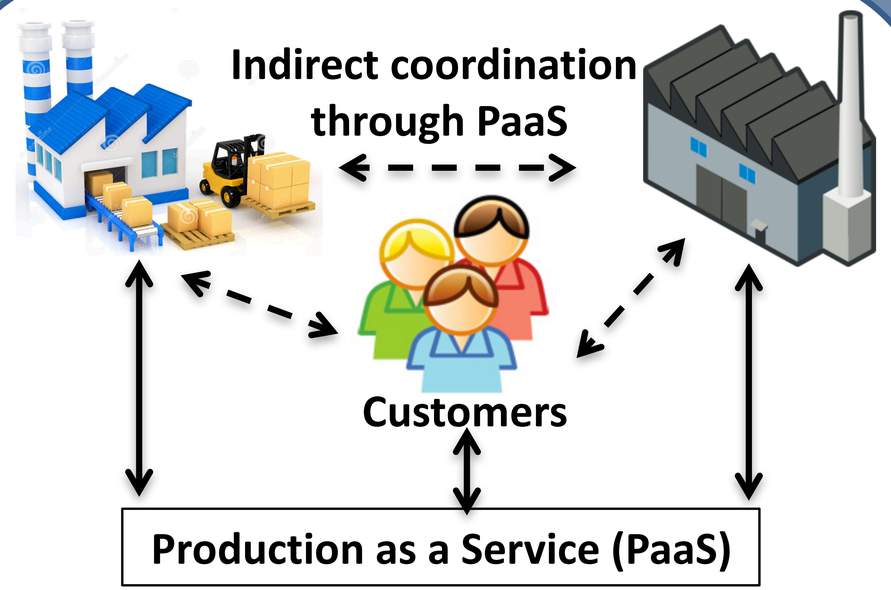
Preventing information leakage.

Solution

A web-based PaaS framework with front-end query interface and back-end analysis component.

Centralized control with extensible APIs and robust, secure, data storage.

Enabling cooperation among geo-distributed manufacturers.



Front-end APIs for submitting queries and quotes;
Back-end APIs for analysis & accessing database.

Scientific impact

Use of optimization algorithms for the optimal solution of the multi-facility production problem.

CP-API framework with information and physical interfaces.

Broader impact

Facilitate prototyping & product customization by leveraging under-utilized capital equipment & labor.

Equip mid/small manufacturers to compete for new customers.

Enable small companies to produce mid-size lots.

Can extend to hospital logistics.