PATTERNS FOR PLATFORM-BASED BUSINESS MODEL INNOVATION
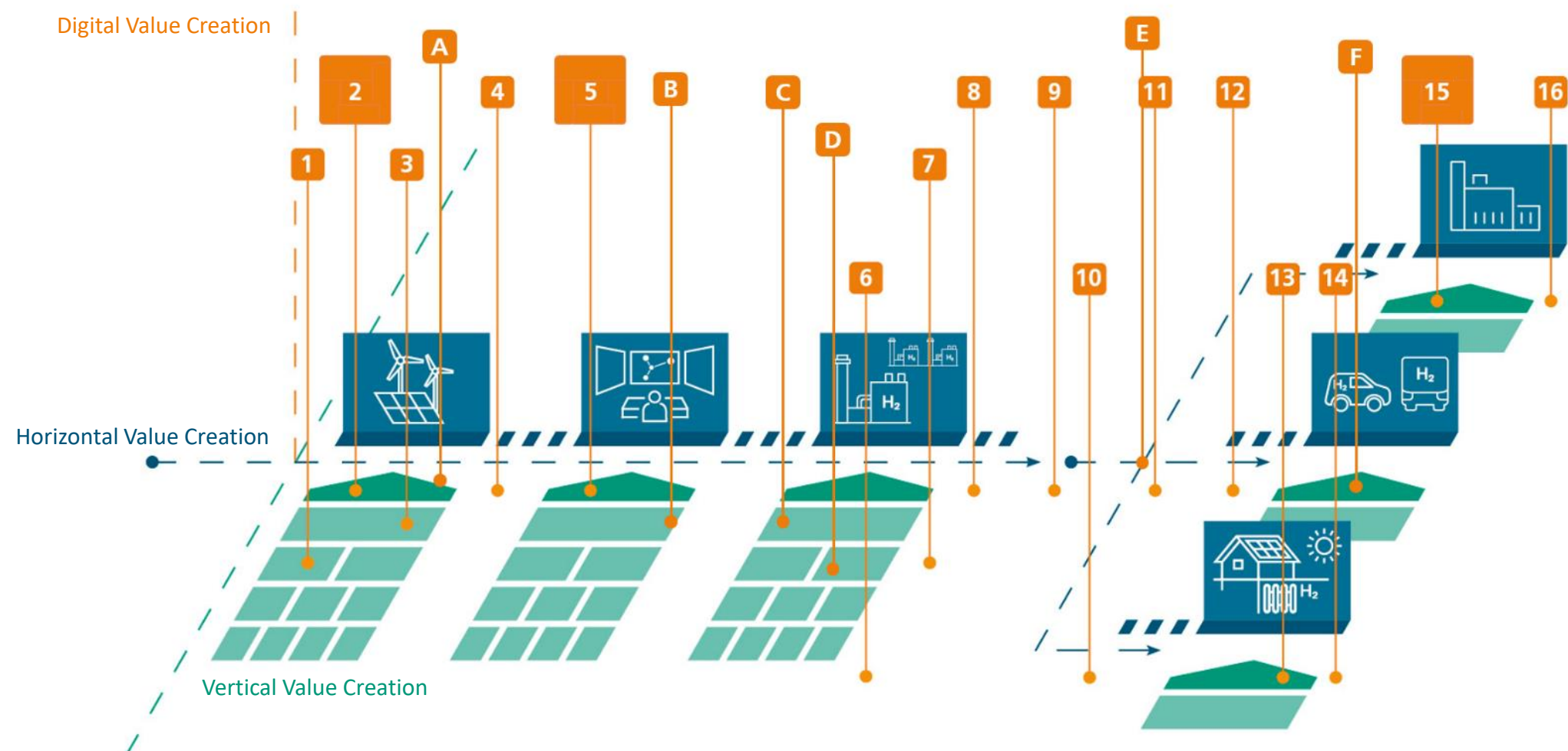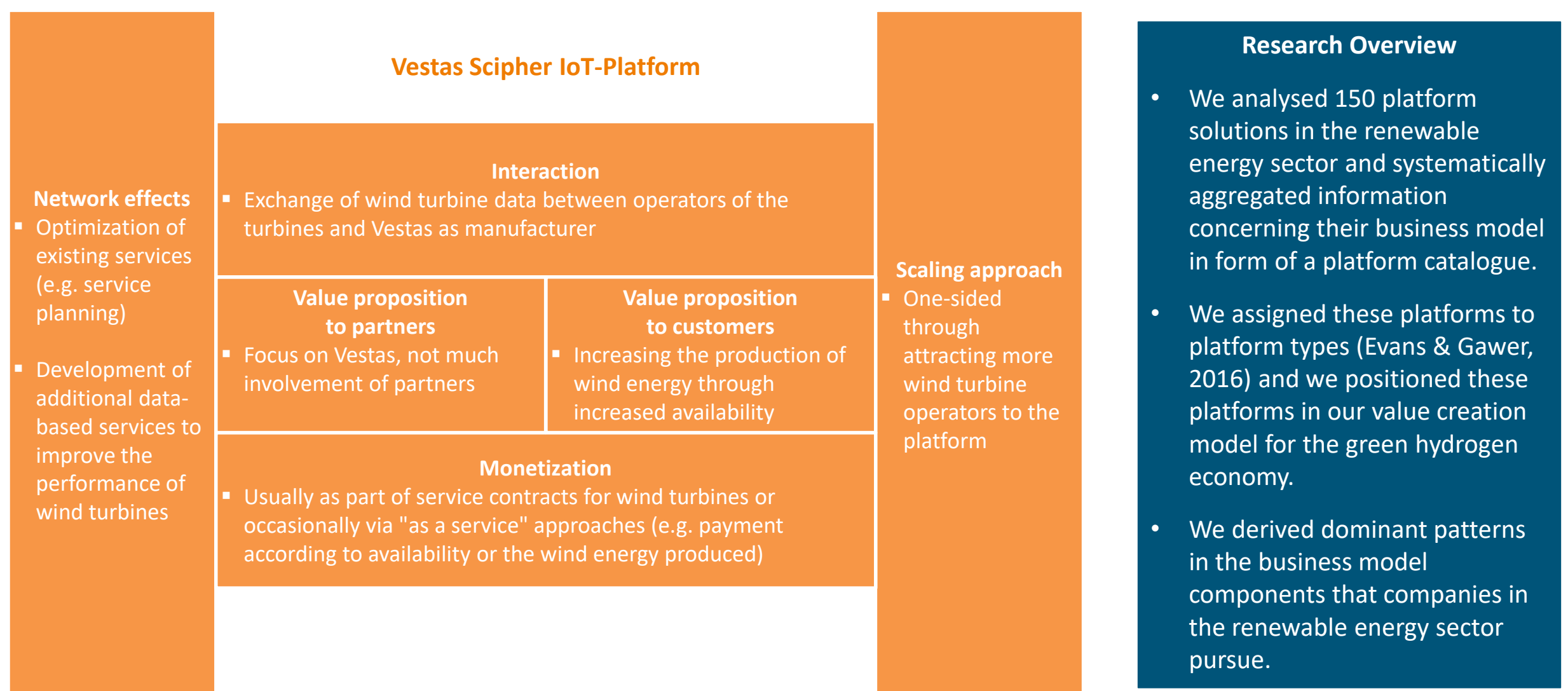## *EVIDENCE FROM THE RENEWABLE ENERGY SECTOR*

Alexander Arzt, Heiko Gebauer, Sebastian Haugk
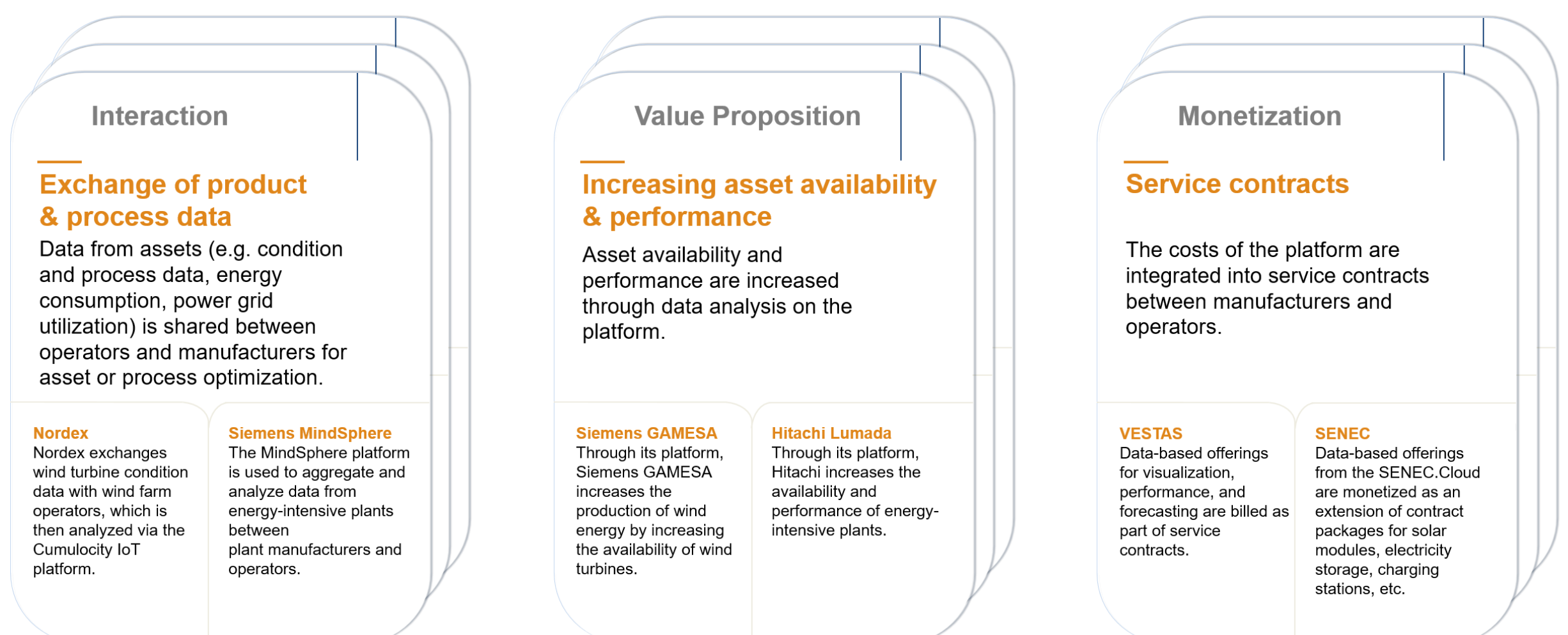
Value Creation Model for the Green Hydrogen Economy

Digital Value Creation

Horizontal Value Creation

Vertical Value Creation

Platform Canvas as a Tool for Analysis

Vestas Scipher IoT-Platform

Network effects
- Optimization of existing services (e.g. service planning)
- Development of additional data-based services to improve the performance of wind turbines

Interaction
- Exchange of wind turbine data between operators of the turbines and Vestas as manufacturer

Value proposition to partners
- Focus on Vestas, not much involvement of partners

Value proposition to customers
- Increasing the production of wind energy through increased availability

Monetization
- Usually as part of service contracts for wind turbines or occasionally via "as a service" approaches (e.g. payment according to availability or the wind energy produced)

Scaling approach
- One-sided through attracting more wind turbine operators to the platform

Research Overview
- We analysed 150 platform solutions in the renewable energy sector and systematically aggregated information concerning their business model in form of a platform catalogue.
- We assigned these platforms to platform types (Evans & Gawer, 2016) and we positioned these platforms in our value creation model for the green hydrogen economy.
- We derived dominant patterns in the business model components that companies in the renewable energy sector pursue.

Examples of Identified Patterns in the Business Model Components

Interaction
Exchange of product & process data
Data from assets (e.g. condition and process data, energy consumption, power grid utilization) is shared between operators and manufacturers for asset or process optimization.

Nordex
Nordex exchanges wind turbine condition data with wind farm operators, which is then analyzed via the Cumulocity IoT platform.

Siemens MindSphere
The MindSphere platform is used to aggregate and analyze data from energy-intensive plants between plant manufacturers and operators.

Value Proposition
Increasing asset availability & performance
Asset availability and performance are increased through data analysis on the platform.

Siemens GAMESA
Through its platform, Siemens GAMESA increases the production of wind energy by increasing the availability of wind turbines.

Hitachi Lumada
Through its platform, Hitachi increases the availability and performance of energy-intensive plants.

Monetization
Service contracts
The costs of the platform are integrated into service contracts between manufacturers and operators.

VESTAS
Data-based offerings for visualization, performance, and forecasting are billed as part of service contracts.

SENEC
Data-based offerings from the SENEC.Cloud are monetized as an extension of contract packages for solar modules, electricity storage, charging stations, etc.

Aston Business School
BIRMINGHAM UK

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