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A DIGITAL TWIN FOR PI-STORE AUTOMATED WAREHOUSES

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CONTEXT

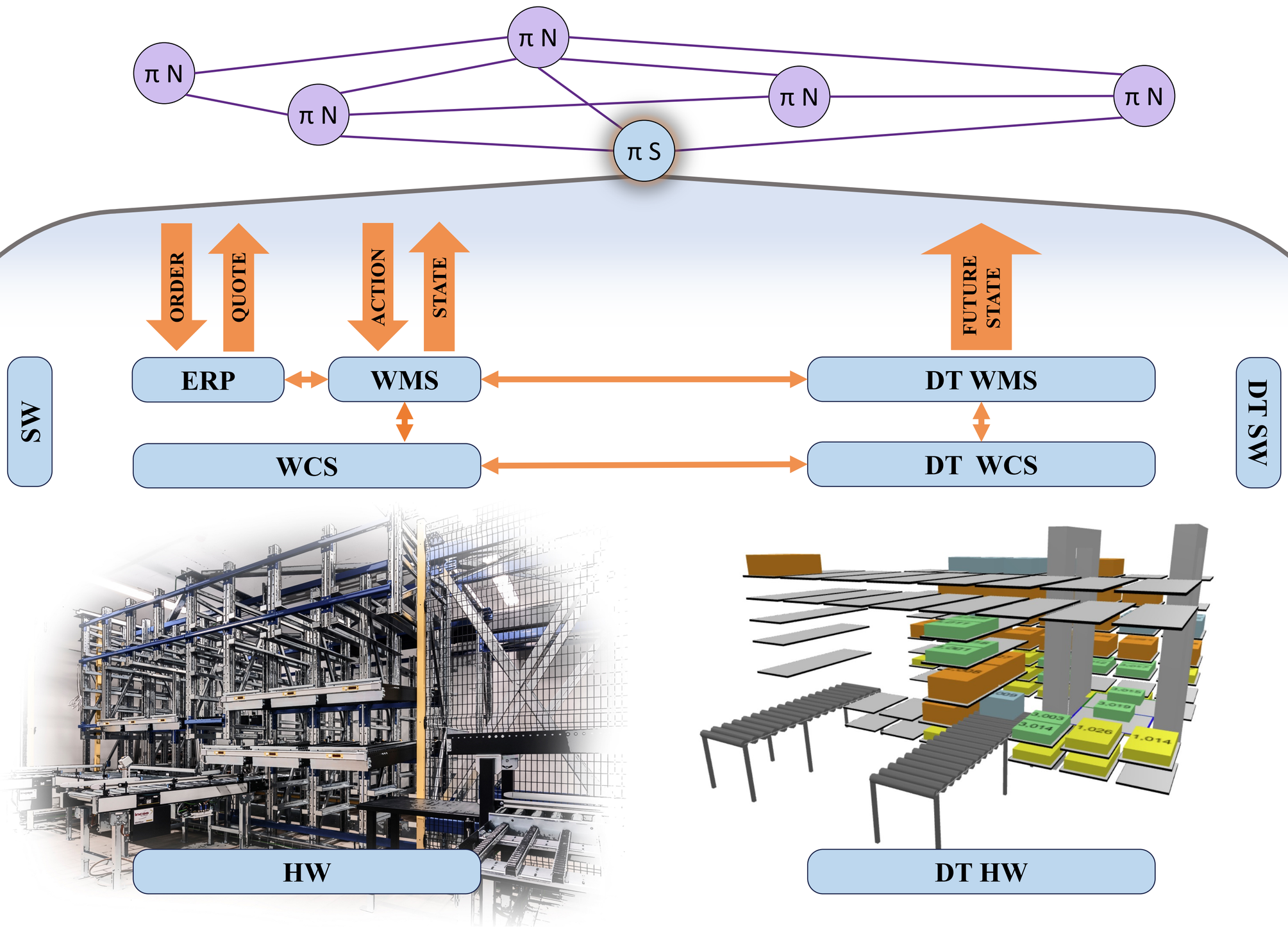
Automated storage and retrieval systems (**AS/RSs**) are instrumental in achieving efficiency and quickness of logistics processes

RESEARCH GAP

AS/RS studies focus on optimization and analytical models. However, analytical evaluation often consider deterministic and stable input parameters which are not necessarily found in real-life AS/RS systems.
Cyber-physical systems such as **Digital Twins** represent a way to generate better predictive performance measures for a given system configuration.

PROPOSAL

We propose a **Digital Twin (DT) architecture** of an AS/RS specifically designed for smaller containers such as plastic totes. This system can thus recreate the condition of a PI-store holding modular P-containers.



VALUE OF THE PROPOSED DT FOR PI APPLICATIONS

The proposed DT allows for:

- **Real time monitoring of the PI-store operations to improve synchronization with PI-movers**
- Adjusting the operational parameters of the AS/RS to **fit with real-time demand** from the PI network
- **Assessing the efficiency** of higher protocols established by the PI network stakeholders

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