Multi-site Economics

Best Practices in multi-site standardization and transformation programs

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In multisite deployments, you can achieve speed, scale, lifecycle management, cost control via a centralized approach - and it’s been proven.
20+ year experience of AVEVA MES Practice

<table>
<thead>
<tr>
<th>Scale</th>
<th>Multiple Sites</th>
<th>Single Site/Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>“jump start journey with point solution (digitalize a silo)”</td>
<td>“programmatic transformation”</td>
</tr>
<tr>
<td>Medium</td>
<td>“redistribute at other sites”</td>
<td>“expand template to other sites”</td>
</tr>
<tr>
<td>High</td>
<td>“incrementally add to the footprint”</td>
<td>“effective, ongoing center of excellence”</td>
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</tbody>
</table>

Maturity: Low, Medium, High
Ease of upgrades & deployment experience are top concerns in MES rollouts ...

- Multiple customers & industry analysts
Traditional mindset and expectations

Rollout Approach: Site-by-site

ERP & Supply Chain

Manufacturing Operations Management

Process Control

Corporate

Site 1 Site 2 Site 3 Site X

Cumulative value increases ...

Incremental cost to deploy decreases ...

Desire to accommodate site-specific needs
Flexibility is required – and a “double-edged sword”

Lessons learned

Variety that is Essential / Necessary

Variety that is Unavoidable

Variety that is Unnecessary

Product Variety

...evolved via M&A / Divesture

...different levels of automation

...different skill levels

Process & Asset Variety

Various MES systems

...different work processes by site

...different standards

Financial Entity
Consumer Brands

SKUs
Recipe / BOM
Procured Items

Variety that is

Unique
Common

...to Site
...to BU
...across BU
...across enterprise
...across industry

Plants
Lines
Plant-level Recipe
Equipment
Controllers/Sensors

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The reality of what happens during rollouts

- **Master trunk**
  - Version 1.0.0.0
  - Version 1.0.1.0
  - Version 1.1.0.0 (Contains GAPS of Site 1 if promoted as global)

- **Hot fixes branch**
  - Bug fix for Production: HF 1.0.1

- **Release branch**
  - Code merge
  - Internal Test
  - Bug fixing

- **Dev- branch GAPS – Site 1**
  - Bug incorporate into dev. branch
  - FAT GAPS

- **Dev. branch GAPS – Site N**
  - Bug incorporate into dev. branch

- **Production:**
  - HF 1.1.1

- **Version 1.1.0**
  - Code Merge
  - Internal Test

- **Version 1.2.0.0**
  - Code Merge
  - Internal Test

- **Version 1.2.0.0**
  - Code Merge
  - SAT SITE N

- **Code merge**

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Where we are having success

Rollout Approach: Centralized

- Localization - Time zone, Languages, Currency, etc.
- Guarantee processing of data once received by MES layer
- Guarantee delivery of data from plant network to MES
- Local device integration
- Greater consistency of data formats
AVEVA MES Architectural Innovation – Centralized MES

Real World Implementations

▪ Packaged Meats Manufacturer – OEE/Performance Data Center implementation at 8 sites and expanding

▪ Building Products Manufacturer – Full MES Data Center implementation at 9 sites and considering further expansion.

▪ Spices, Flavors, Seasoning & Condiments Manufacturer – Recipe Management Microsoft Azure (IaaS) implementation at 4 sites and expanding.

▪ Consumer Products Manufacturer – Pilot Lighthouse site using full MES Data Center implementation and expanding to additional sites currently

▪ Specialty Chemicals Manufacturer – Pilot proof of concept using full MES, planning expansion to all sites globally
What about IaaS Cloud?

Rollout Approach: Centralized
Program Planning & Governance

Solution Lifecycle Management as the foundation for scale, speed, cost control, etc.

- Program Governance
  - Value & Change Management
  - Solution Lifecycle Management
  - Project & Execution Management
- Center of Excellence
  - CUSTOMER
  - AVEVA – CUSTOMER
  - AVEVA (SI) - CUSTOMER
  - AVEVA
Questions?
Please wait for the microphone.
State your name and company.

Please remember to...
Navigate to this session in the mobile app to complete the survey.

Thank you!

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