



CONTROL TPS-3
21° 5

STATIC
2040
6352
46
8.39
453
362



FEED VR RT-3

35

D3-F

DR-2

POWERED BY:



Digital Factory Transformation Digital Logbook Solution



DIGITAL
FACTORY



DIGITAL
LOGBOOK

Supply Chain Wizard
Digital Factory Solutions



SUPPLY CHAIN
WIZARD

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Supply Chain Wizard – Services & Solutions for Digital Supply Chain



**SUPPLY CHAIN
WIZARD CONSULTING**

Management Consulting



**TRACK &
TRACE**



**DIGITAL
TRANSFORMATION**



**DIGITAL
COLLABORATION**



**IoT &
BIG DATA**



BLOCKCHAIN

Serialization (Track & Trace) Consulting

- Program Setup & Strategic Planning
- Project Management & Implementation / Integration
- ROI / Value Beyond Compliance & Sustainability

Supply Chain Consulting

- Supply Chain Strategy Design
- E2E Process Optimization
- Process Automation
- Advanced Analytics
- IoT & Big Data
- Blockchain & SC Security

Strategy | Execution | Transformation



**SUPPLY CHAIN
WIZARD SOLUTIONS**

Software Solutions



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SC_Wizard



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Digital Logbook



Industry Challenge

At Pharmaceutical sites, all activities should be recorded to logbooks to comply with GMP regulations. Having manual logs such as written or excel sheet logbooks are of common practice. This limits the further analysis of the logs. Maintaining the logbooks become too costly when manual methods are used and security concerns arise.

What you get?

Digitize all room logs capturing line activities within the factory floor
Access your data at all times and instantly
Improve security and quality by using personal digital signatures to sign and approve activities
Comply with GMP regulations

How does it work?

Supply Chain Wizard installs Digital Logbook in 1 day at client site
Line operators log each activity / task with only 2 clicks or touch
Multiple levels of security ensure the GMP compliance of the logbook
Logbook data is stored digitally and is accessible at all times for further analysis or audits

Why you need it?

Operator Friendly: Digital Logbooks removes the need of paper logs or manual registry methods
Performance: Ability to analyze site activities by capturing them instantly and analyzing them to optimize performance
Anomaly detection: Understand “regular” vs. “unexpected” events/activities with machine learning algorithms
Save Time: instant access to current and historical logs during approvals or audits





SCW Digital Transformation Journey



Track & Trace Compliance

Impact to the Factory:

- Reduced OEE
- Reduced Throughput
- Higher Maintenance
- More Rejects
- Higher Overtime
- Higher COGS

DATA

- Quality Events
- Line Performance
- Activity Data
- Maintenance Data
- Labor Data
- Environmental Data
- Financial Data



DASHBOARD

- OEE / Performance
- Labor / Asset Analysis
- Capacity / Utilization
- Cost of Goods Sold



OEE
TRACKER



LABOR
TRACKER

DECISIONS

Scheduling:

- Line / Staff Scheduler

Planning:

- Demand / Capacity / Inventory / Supply

Maintenance:

- Planned / Predictive
- Asset Replacement



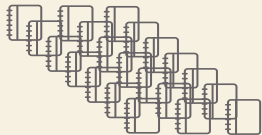
SCHEDULER



At Pharma, multiple logbooks are required for every room

Managing and maintaining information is difficult:

- Each Pharma site keeps 100s of paper based logbooks
- There are 6+ different types of logbooks
- 1000s of logbooks are actively managed or archived at a given company



All logbooks should comply GMP rules

GMP Compliance is a challenge:

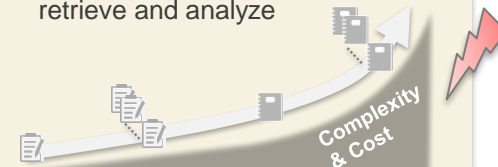
- All logbooks are **paper based**
- Archiving requirements for years
- Readily available for addressing issues on site
- Audit trails
- Structurally organized, indexed, traceable logs

**GMP
Compliance**

Paper based logbooks present difficult challenges

Very expensive & effort-heavy w/ limited to no value:

- Difficult to maintain / archive
- Long and difficult analysis for annual product reviews
- Expensive to maintain, store, retrieve and analyze





Digital Logbook – Solution



GMP Compliant

Compliant with requirements

Control over all processes

Live & central quality checks & approvals



Digital Logs

Digitally available logs

Faster reaction times to audits

Better security with digital authentication



Fits to Pharma 100%

Developed with Pharma Clients with detailed URS

Flexible & Scalable

*Historical logs
Approvals
Audit trail
Daily local backups*



Digital Logbook – Additional Benefits



Microsoft co-development investment on Azure

*Microsoft **One Commercial Partner** program*

*Better security and scalability with Azure **Hybrid-Cloud***



Reporting & Analysis

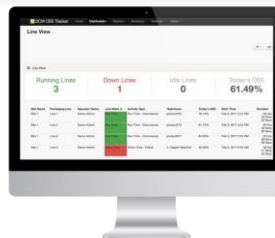
Seamless integration to OEE Tracker

24/7 live access to all logbooks w/ advanced analysis

Integrated to ERP Database (optional)



BLOCKCHAIN





Why Digital Logbook with Blockchain?

CONVENTIONAL LOGBOOKS

Paper based

Slow Reaction Time to Audits

Difficult to Consolidate & Analyze

Expensive to Maintain



VS



DIGITAL LOGBOOK

100% digital & Pharma-grade

Audit-ready & Transparent

Real-time Access & Analysis

*Secure & Easy to Maintain,
Affordable*



+



BLOCKCHAIN

Immutable, Protected

Fraud-proof Accountability

Decentral, Business Cont.

High Compliance





The Digital Logbook – Home Screen



DIGITAL
LOGBOOK

Hierarchical
Structure of
'Loggable'
Objects

log events

**check-in
check-out
functions &
user
history**

event details

**log
history**

Capper Machine

Site / Packaging Lines / Line 2 / Capper Machine

Line Upgrade Maintenance Clean Up Setup Failure

Current Event 3 hours, 33 minutes, 29 seconds.

Product ID: PRODUCT2 - ID9876 Batch Nr: E12345

Activity Type: Start Up Comments:

Check In Check Out

Mary Adam James Chuck John Diana

Capper Machine Logbook History

| Object | Event | Activity Type | Product ID | Batch Nr | Start Time | End Time | Action |
|----------------|-------|---------------|-------------------|----------|------------------|-----------|--------|
| Capper Machine | Setup | Start Up | PRODUCT2 - ID9876 | E12345 | 2018-03-05 14:12 | Continues | |

| Action | User | Timestamp | Comment |
|-----------|---------|------------------|---------|
| Check in | Stephan | 2018-03-05 17:44 | |
| Check out | James | 2018-03-05 17:44 | |
| Check out | Chuck | 2018-03-05 17:44 | |
| Check in | Diana | 2018-03-05 17:44 | |
| Check in | John | 2018-03-05 17:43 | |
| Check in | Chuck | 2018-03-05 17:43 | |



The Digital Logbook – Approve Screen



log filters
to quick
access

export
options

DIGITAL LOGBOOK Approve Reports Settings About

Home / Log Approve - QA

Log Approve - QA

Date Range: 2018-03-05 - 2018-03-05 | Object: 9 selected | Event: 7 selected | Batch Nr: 10 selected | Status: 4 selected | Filter

Download HTML Print

Approval Status

Approve Selected

| | Object | Event | Activity Type | Product ID | Batch Nr | Start Time | End Time | Status | Comments | Approved By | Approve Time | Action | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------|--------------------|-------------------|----------|------------------|------------------|---------------------|------------|-------------|------------------|--------|--------|------|-----------|---------|---------------------|------|------------------|--|------|------|------------------|------|-----------|------|------------------|--|----------|------|------------------|--|-------|------|------------------|--|
| <input checked="" type="checkbox"/> | Labeler | Line Upgrade | Equipment Upgrade | PRODUCT3 - ID9876 | B12345 | 2018-03-05 14:12 | 2018-03-05 14:13 | Supervisor Approved | test | Adam | 2018-03-05 18:05 | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table><thead><tr><th>Action</th><th>User</th><th>Timestamp</th><th>Comment</th></tr></thead><tbody><tr><td>Supervisor Approved</td><td>Adam</td><td>2018-03-05 18:05</td><td></td></tr><tr><td>Stop</td><td>Mary</td><td>2018-03-05 14:13</td><td>test</td></tr><tr><td>Check out</td><td>Mary</td><td>2018-03-05 14:13</td><td></td></tr><tr><td>Check in</td><td>Mary</td><td>2018-03-05 14:12</td><td></td></tr><tr><td>Start</td><td>Mary</td><td>2018-03-05 14:12</td><td></td></tr></tbody></table> | | | | | | | | | | | | | Action | User | Timestamp | Comment | Supervisor Approved | Adam | 2018-03-05 18:05 | | Stop | Mary | 2018-03-05 14:13 | test | Check out | Mary | 2018-03-05 14:13 | | Check in | Mary | 2018-03-05 14:12 | | Start | Mary | 2018-03-05 14:12 | |
| Action | User | Timestamp | Comment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supervisor Approved | Adam | 2018-03-05 18:05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stop | Mary | 2018-03-05 14:13 | test | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Check out | Mary | 2018-03-05 14:13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Check in | Mary | 2018-03-05 14:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Start | Mary | 2018-03-05 14:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Capper Machine | Setup | Start Up | PRODUCT2 - ID9876 | B12345 | 2018-03-05 14:12 | Continues | Not Approved | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Capper Machine | Clean Up | Type B Cleanup | PRODUCT3 - ID9876 | B12345 | 2018-03-05 14:12 | 2018-03-05 14:12 | Supervisor Approved | test brain | Brain | 2018-03-05 18:06 | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Capper Machine | Maintenance | Annual Maintenance | PRODUCT2 - ID9876 | C12345 | 2018-03-05 14:12 | 2018-03-05 14:12 | Not Approved | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

log
history
&
edit
status

Approval
Details

Flexible
Multi-level
Status:

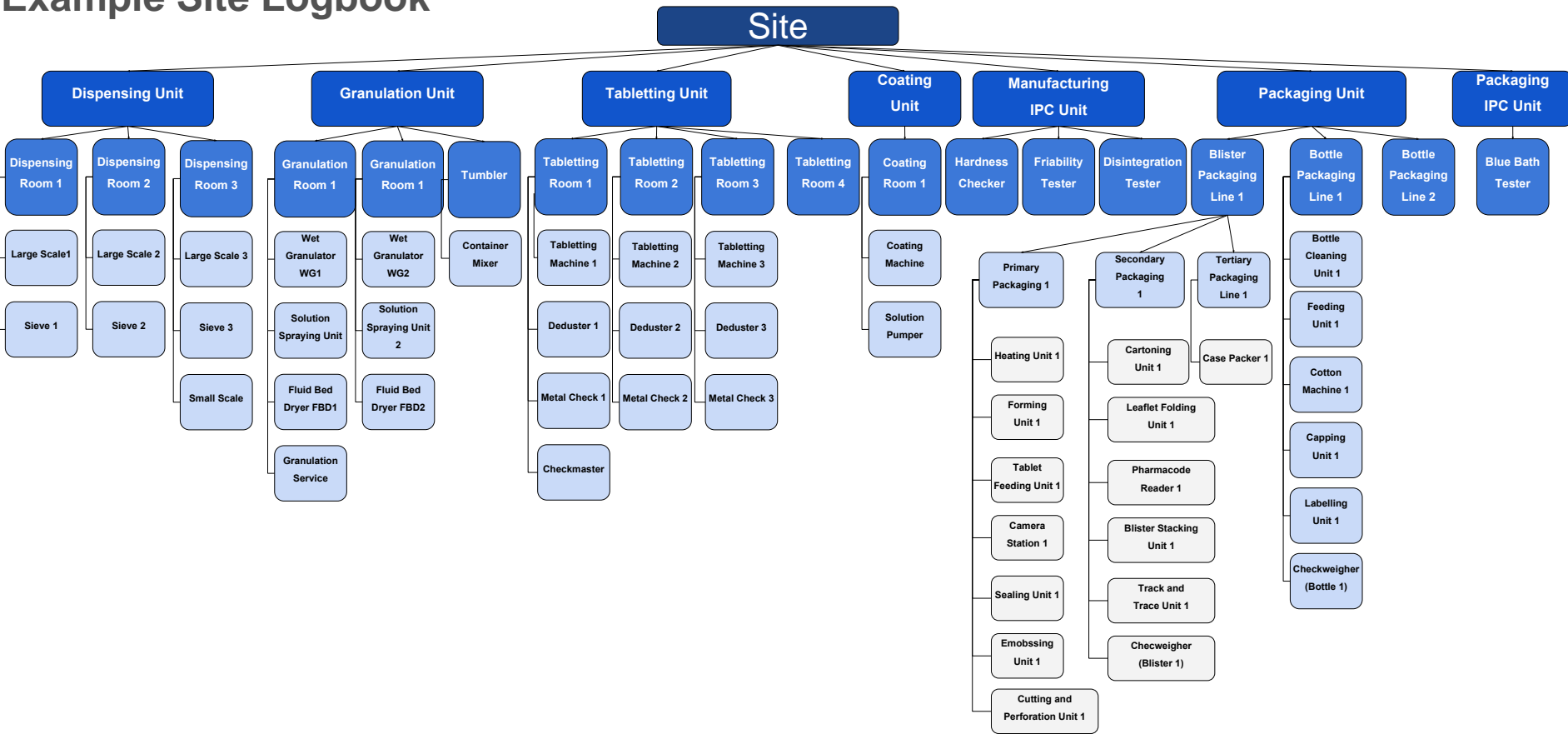
Not Approved

Supervisor
Approved

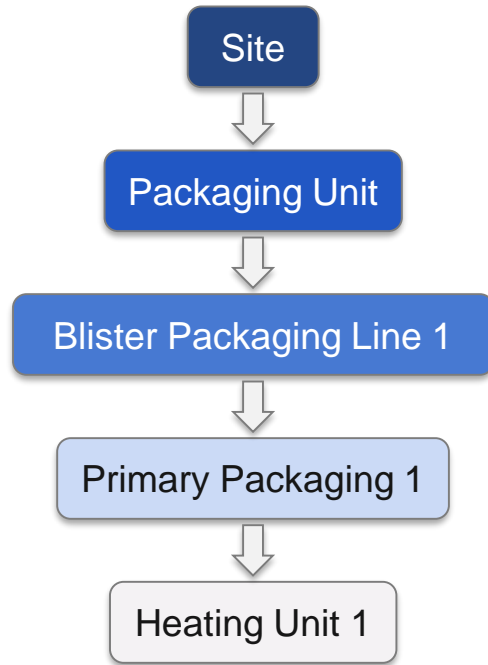
QA Approved

Admin 10
Approved

Example Site Logbook

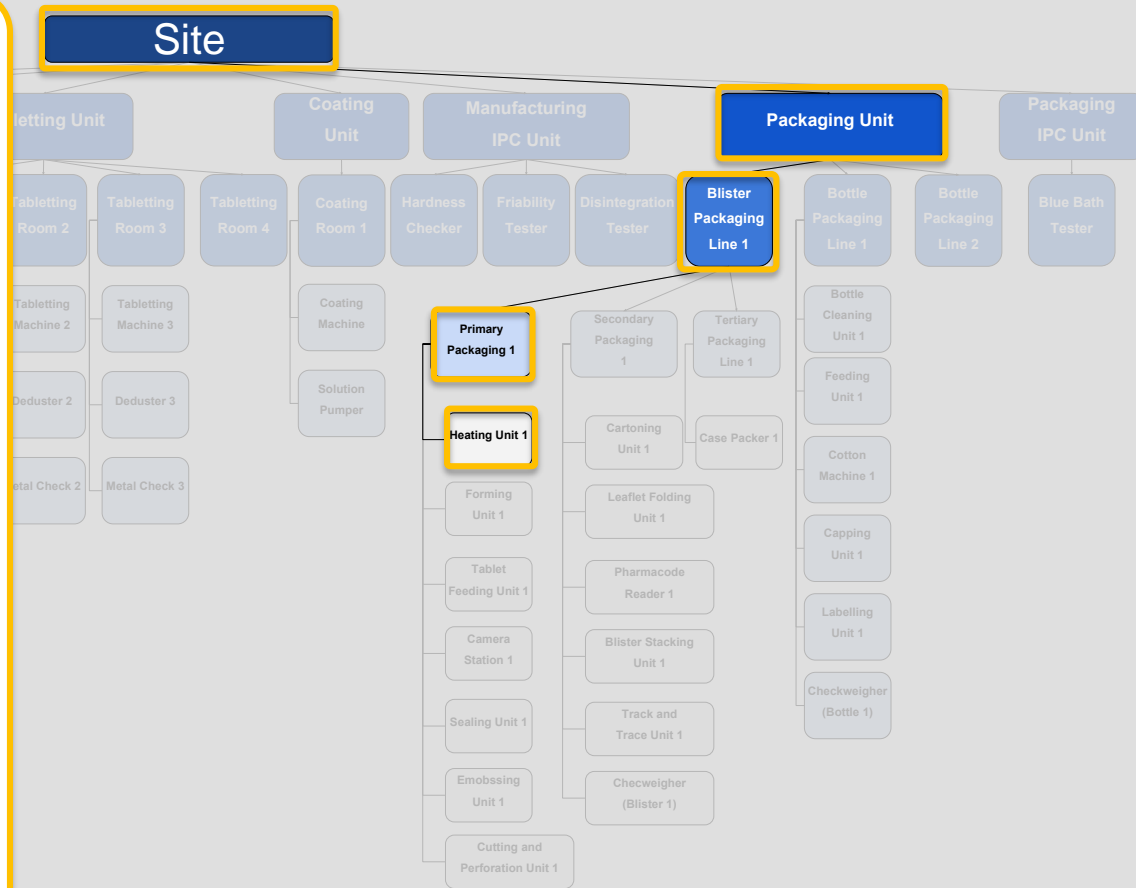


Site Logbook Hierarchy



For each logbook:

- Customizable 'loggable' status
- User or role specific access management





1 Introduction to Supply Chain Wizard

Overview, Services, Solutions, References

2 Digital Logbook

Digitize paper based logbooks

3 Digital Factory Journey

Journey, Quick wins & Establishing fundamentals





SCW Digital Transformation Journey



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SCHEDULER

**DIGITAL
FACTORY****Pharma Digital Factory Roadmap**

From US DSCSA & EU FMD to Digital Factory Future

- Unlock 20-50% cost savings, while improving customer service
- Improve end-to-end process efficiency, unit-level visibility and cycle times

**Serialization / Track & Trace Compliance**

Systems / Processes & People Capabilities in place for compliance

**Efficient Operations / OEE / Cost Management**

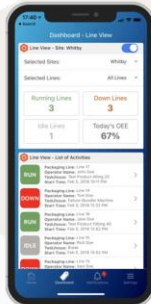
Efficiency management at packaging lines
 Improve OEE Management Systems & Processes
 Recover lost OEE & improve COGS

**From PAPER to DIGITAL**

Digital Logbooks
 Digital / Electronic Batch Records
 Paperless Factory
 Blockchain-based QA Systems

**From SPREADSHEET to DIGITAL**

Shop-floor Scheduling & Production Planning
 Resource Planning: Machine & Staff
 Inventory Management & Procurement
 Capacity Planning & CAPEX/Asset Mgt.
 Sales & Operations Planning (S&OP)

Cloud & Mobile**Live Tracking & IoT**

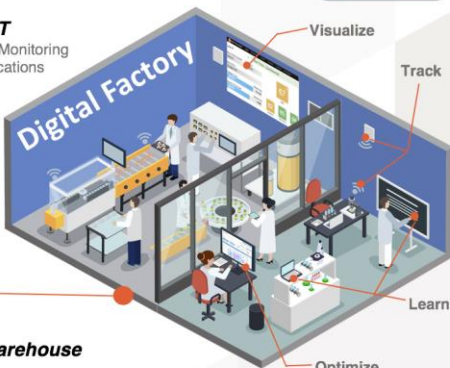
Labor, Machine, Facility Monitoring
 Exception Alerts & Notifications

Big Data & AI

Predictive Maintenance
 Exception Management
 Role-based Dashboards

Automation & ML

Decision Algorithms
 Machine Learning
 Continuous Optimization

Digital Factory**Digital Warehouse****Digital Supply Chain**

Potential Digital Factory Initiatives

Track & Trace Compliance

- OEE Tracker roll-out in Packaging & Manufacturing

Digital Factory Transformation

- Digital Logbook Pilot & Proof of Concept (PoC)
- Scheduler Pilot & PoC

Digital Factory Future

- Predictive Maintenance PoC using Logbook/OEE & IoT technology





? Questions
Comments

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Thank you