THINGWORX APPLICATIONS
Connected Work Cell
ThingWorx Applications accelerate time to value and time to scale by focusing on use cases that have substantive impact on the P&L while building a foundation for digital transformation.

High impact applications replace custom, bespoke approaches with repeatable, configured-not-coded, applications that leverage the domain expertise from hundreds of successful implementations.

These applications vastly reduce the effort associated with designing, coding, and testing new applications.
High impact applications

- Built for multiple customers, industries, locales and sites
- Affordable, quick to deploy and easy to support
- Extensible (horizontally and vertically)
- Built for performance at scale with dozens of assets at dozens of sites
- Managed applications with version control and pre-requisites
- Upgradable applications aligned with ThingWorx capabilities, features and releases
Vastly reduced efforts

Up to 90% Reduction in application development time & cost

As much as 75% Faster time to value

As much as 67% Reduction in time to scale
The high impact applications align to the most common requirements. This enables companies to rapidly create a foundation for digital transformation.

Using our scalable, extensible platform, they can iteratively extend into additional digital transformation use cases.
Out of the Box Features

- Multi-Language Support
- All features/displays configurable to security roles and settings
- Process Troubleshooter
- Waste, Downtime, and Production tracking models
- Waste and Downtime reporting mashups
- System Configuration Displays:
  - Plant Model
  - Reason Trees
  - Control Characteristics
  - Smart Tools
  - Products
ThingWorx application
Connected Work Cell (CWC)
ThingWorx Applications Framework

Leading with solutions, Pivoting strategy with applications for proven no regret use cases, that still have the power and flexibility of the platform.

SOLUTIONS & APPLICATIONS

INDUSTRIAL IOT SOLUTIONS PLATFORM

Connected Work Cell

Digital, augmented work instructions
Augmented remote assistance

BUILDING BLOCKS

Connect  Build  Analyze  Manage  Experience

INFRASTRUCTURE & CLOUD

Strategic Partners  ·  Global Systems Integrators  ·  Management Consultants

EXISTING LANDSCAPE
Connected Work Cell – Use Case Introduction

Connected Work Cell streamlines how information is delivered to frontline workers by aggregating critical data from multiple data siloes into a simplified visual application.

Since the work cell now pushes the process and steps to operators, it makes frontline workers more flexible with less need for upfront training and upskilling before being assigned to a new work cell.

Integration with connected tools provides bi-directional communication to both download tool settings and collect actual tool data for traceability.

Challenges Facing the Industry

- Targeting assembly for complex discrete products
- Operators on the plant floor work with disparate systems of information to complete their work: ERP, MES, binders, paper, PDF-based work instructions, quality forms, disparate smart tools, and more.
- This disconnect increases the training burden and causes operators to waste time switching between systems seeking the right information

Benefits from CWC

- Delivers up to date, digital, and in-context information to operators on the shop floor. By combining data from multiple production sources, the operator has seamless bi-directional interaction with all data required to perform daily work.
Connected Work Cell

Provide workers a seamless experience while capturing operational execution data with a modular application that provides:

- Digital Work Instructions
- PLM Data
- Work Order Data
- Smart Tools
- Machine Data

and empowers your teams to be more productive with less errors:

Execution tracking
Connected data capture from smart tools and machines

Powered by:

**InnovationSuite**
powered by **PTC**

**thingworx**
**kepware**
Connected Work Cell

Provide workers a seamless experience while capturing operational execution data with a modular application that provides:

and empowers your teams to be more productive with less errors:

1. Delivers up to date, digital and in context information to operators on the shop floor
2. Combining data from multiple production sources
3. Lite Authoring
   - Multiple step types supported
   - Versioning & Approval
4. Operator Execution
   - Step by step tracking (Time and Data)

Powered by:

InnovationSuite powered by PTC

tingworx kepware

ThingWorx applications
Introduction PG 2
ThingWorx Applications
Universal Features PG 5
ThingWorx application
Connected Work Cell (CWC) PG 7
CWC - Features And Key Users PG 13
Connected Work Cell

Provide workers a seamless experience while capturing operational execution data with a modular application that provides:

- **10 - 40%** Increase in worker productivity
- **30 - 65%** Reduction in training time
- **3 - 25%** Reduction in scrap
- **Reduction** in safety risks

Powered by:

- InnovationSuite powered by PTC
- thingworx™ kepware®

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**Introduction**

- ThingWorx applications
  - Introduction Page 2
- ThingWorx Applications
  - Universal Features Page 5
- ThingWorx application
  - Connected Work Cell (CWC) Page 7
- CWC - Features And Key Users Page 13
CWC – Features And Key Users

Out of the Box Features

• Authoring – Supports Multiple step types and versioning
• Work Order Scheduling
• Operator Executing and Step by Step Tracking
• Smart Tool Configuration
• Stations Dashboard Display
• File Storage and Document Management

KEY USERS

Operators benefit from step-by-step work instructions and work order updates

Authors are enabled with easy-to-use authoring tools and multiple step types to choose from
CWC – Authoring

Authoring
- Work Instructions
- Operation
- Steps
- Target cycle time

Step Types
- Informational
- Verification
- List
- Manual Entry
- Smart Tool
- Parts Verification
- Calculated

Revisions & Versioning
- Approval process
CWC – Scheduling

Scheduling
- Work Order information coming from external system
  - Recommending ThingWorx Flow
- Filtering on WO Status (Not Scheduled, Scheduled, On-Hold, In-Progress, Complete)
- List of WO can be exported to Excel

Serial # Assignment

Bill of Material Validation
CWC - Execution

Operator Information
- Current Work Order
- Operations and steps
- Instructions
  - Text
  - Image
  - Video
  - Attachment(s)

Data Entry section
- Pause/Stop/Resume
- Bypass Step (Req. Approval)
- Smart Tool integration
- Auto-Advance Serial #
CWC – Execution – BOM Validation

Verify Parts
• Provide Bill of Materials before proceeding

Reduce Rework
• Cut down on rework by requiring operators to key in full BOM
• Ensure correct parts are used
CWC – Pause/Stop Tracking

Pause/Stop
- User can pause the execution of a Work Instruction
- Pause time is tracked

Reason Tracking
- Reason is required from the user when pausing or stopping

Operator Visual Clues
- Notifying the operator when time is exceeding Target Cycle Time
CWC - Smart Tool Manager

**Smart Tools Config.**

- Configure name, location, picture, properties
- Smart Tool Status
- Linked documentation
CWC - Stations Dashboard

**Stations Dashboard**

- Status of each station
- Station information
  - Work Order
  - Part
  - Start Time
  - End Time
- See current operator posted at the station
CWC – File Storage & Documents

Document Management
- Complete history of documents
- Linked to Work Instruction version
- Using document metadata for performance
CWC - Route management

Route Management

- Connect work instructions that straddle different stations
- Accommodate for variations in steps based on products
- Assign production points for routes
- Enable Auto-Advancing to bring serial numbers from one station to the next