

BUSINESS TRANSFORMATION & OPERATIONAL EXCELLENCE AWARDS

Best Achievement of Operational Excellence in Manufacturing

Johnson Controls Manufacturing Excellence Strategy and Deployment

Synopsis

Johnson Controls launched a Manufacturing Excellence Strategy in 2013 to achieve its vision of becoming the most operationally capable company in the world. The centerpiece of the strategy, which was developed by a global cross business unit team, is the Johnson Controls Manufacturing System (JCMS). The system has four foundations – customer focus, stable production environment, zero tolerance for waste, and organize around pull – and nine principles that provide a comprehensive model with clear roadmaps for engaging employees, driving manufacturing excellence and growing the business via One Johnson Controls Way of manufacturing.

Enabling dimensions of the strategy include: an Operations Academy; a web application for assessing a baseline, establishing action plans and real-time reporting of progress; high performance teams that empower the shop floor and hold it accountable for improvement; regional subject matter experts in the nine principles; business partners that plant managers can tap for coaching/assistance; an enterprise support team; and an incentive structure.

JCMS was introduced to all business unit operations leaders responsible for the company's more than 300 plants around the globe in September 2014. After initial deployment the company piloted an acceleration phase in 2015 that focused on building manufacturing capabilities, implementing quick wins and removing waste in one model line to demonstrate results and to drive adoption of JCMS.

The plants that have made the greatest progress adopting JCMS have demonstrated significant improvements in safety, quality, productivity, and delivery, resulting in greater customer satisfaction and employee engagement.

Strategic objectives and scope

In 2013 Johnson Controls Chairman and CEO Alex Molinaroli defined a new vision for the company: to become the most operationally capable company in the world. To accomplish this, executive leadership began developing an enterprise operating system – one way of doing business for the entire enterprise, incorporating best practices, technology and tools, and talent development to drive the company's success. Its goals are to improve quality, productivity, operating margins, market share, the customer experience, speed and leadership agility. Manufacturing Excellence was the first initiative taken to realize this transformation.

Short-term strategy (1-2 years)

- Deploy JCMS to all plants in a wave approach leveraging a web application that allows each plant to assess its baseline maturity on 500+ manufacturing practices and metrics, set targets, establish action plans to close the gaps, and report.

Long-term strategy (3-5 years)

- Achieve Level 3 of manufacturing excellence maturity – on a scale of Levels 1 to 5 – for competitive advantage; sustain wins and best practices; progress to Levels 4 and 5 of manufacturing excellence targeting measurable world class performance.

JCMS is also supported by an infrastructure that includes:

- An Operations Academy that has developed 31 learning solutions to build applied capabilities from operations leadership to the shop floor; to date more than 158,000 e-learning and instructor-led courses have been completed.
- Acceleration and replication deployment phases embedded in JCMS processes through a “learning by doing” approach that have increased capabilities and demonstrated cost savings as well as performance improvements in all manufacturing principles.
- The JCMS web application which provides a robust, flexible platform for the real-time dissemination, management, reporting and tracking of best manufacturing practice road mapping and implementation.
- High performance teams, creating a framework for the shop floor being empowered and accountable for its own performance improvement in core KPIs.
- An incentive structure that offers visibility and accountability to all team members to focus on business unit and enterprise KPIs.
- A leadership model embedded in the operations organization allowing for the resource infrastructure to build and sustain success.

Operational Excellence implementation and timeline

Year One: Deploy and implement in six phases

1. Plants enroll
2. Complete learnings
3. Self-assess/score
4. Develop and approve action plan
5. Launch JCMS acceleration
6. Establish high performance teams for at least one model line

Years Two & Three: Achieve and sustain

- Establish high performance teams for all lines.
- Build capabilities and advance manufacturing excellence maturity toward Level 3.
- Achieve Level 3 of manufacturing excellence maturity.

Ongoing: Sustain and improve:

- Conduct annual reviews to improve the manufacturing excellence maturity model based on internal and external benchmarks and best practices.
- Continue to deploy JCMS to new plants as mergers and acquisitions occur.

Timeline:

(Johnson Controls operates on an October-September fiscal year)

- FY13 – JCMS organization and initial development
- FY14 – Content creation, pilot testing, web app and validation
- FY15 – JCMS deployment and training; acceleration on model line and high performance team pilots in three waves.

- FY16 – Deployment of JCMS in plants newly integrated into the company's manufacturing network; implement acceleration, learning solutions and high performance teams in the company's established plants in four waves.
- FY17 – Deployment of JCMS in additional (via acquisitions and joint ventures) new plants to achieve Level 3+ of manufacturing excellence maturity in four waves.

Size of deployment challenge

- Initially 300+ plants worldwide, involving 120,000+ employees
- All three business units – Automotive, Buildings, Power Solutions
- All regions – North America, Latin America, Europe/Middle East/Africa, Asia Pacific
- After Johnson Controls spun off its Automotive business (approximately 200 plants) and merged with Tyco in the fall of 2016, the company began executing a prepared strategy to deploy JCMS to the legacy Tyco plants globally in FY2017. To prepare for this deployment a team of legacy Johnson Controls and Tyco people systematically evaluated each company's manufacturing practices and incorporated the best of both into a new iteration of JCMS for all Johnson Controls' plants.

Impact of Operational Excellence deployment

- 100 percent of full-time Continuous Improvement professionals (approximately 400) were trained in JCMS
- 16,501 CI projects initiated
- 16,493 or 99.9 percent of CI projects completed

Organizational results of Operational Excellence deployment

- Exceeded target improvement in year-over-year conversion costs by more than 700 percent
- 22 percent reduction in safety recordable incidents
- 12 percent improvement in quality
- 68 percent improvement in employee retention
- 3X increase in energy saving projects
- Internal measures of customer satisfaction nearly doubled for customers of plants that achieved Level 3 of manufacturing excellence maturity, as a result of improved product quality and on-time delivery, among other measures