Ball Aerospace & Technologies Corp.

Defect Analytics

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Agility to Innovate, Strength to Deliver

Ball Aerospace & Technologies Corp.

- **Promote accountability of process owners and continual process improvement across company**

- **Provide data-driven approaches to problem solving and solution development**

Capture

Analyze

Share

Act

Defect Analytics

Anomaly & Corrective-Action Tracking System (ACTS)

Collection of non-conformance data

Standard fields facilitate data mining

Enterprise Data Warehouse (EDW)

Query non-conformance data and compare attributes

- **Responsible Work Center**
- **Root Cause**
- **Part Number**
- **Shop Order Operation**
- **Supplier**
- **Disposition**
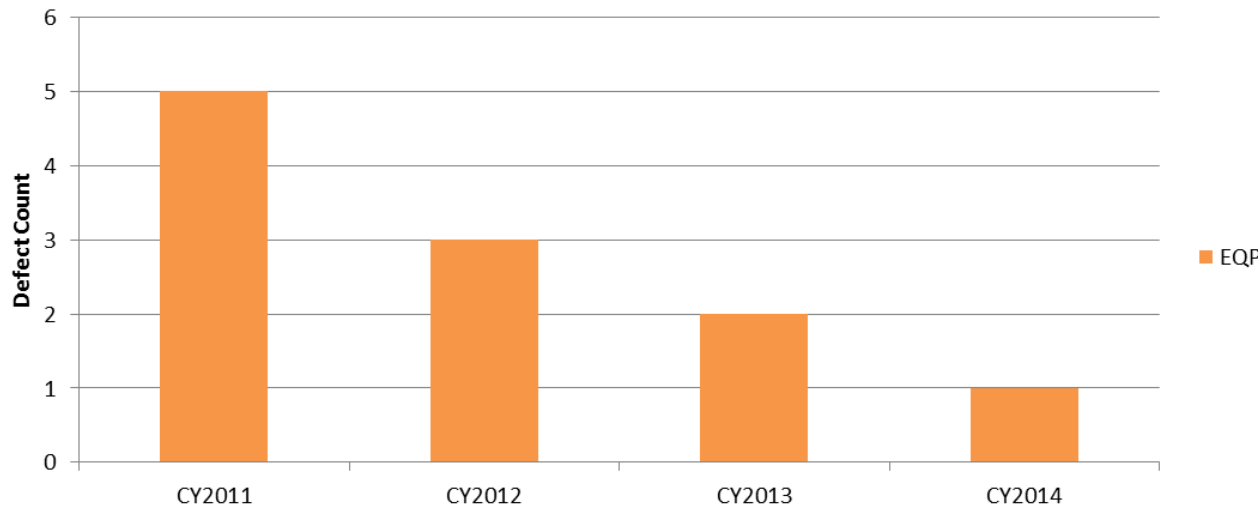
Customizable charts and dashboards

Data refreshed with a click of a mouse

Aerospace Manufacturing Center Example

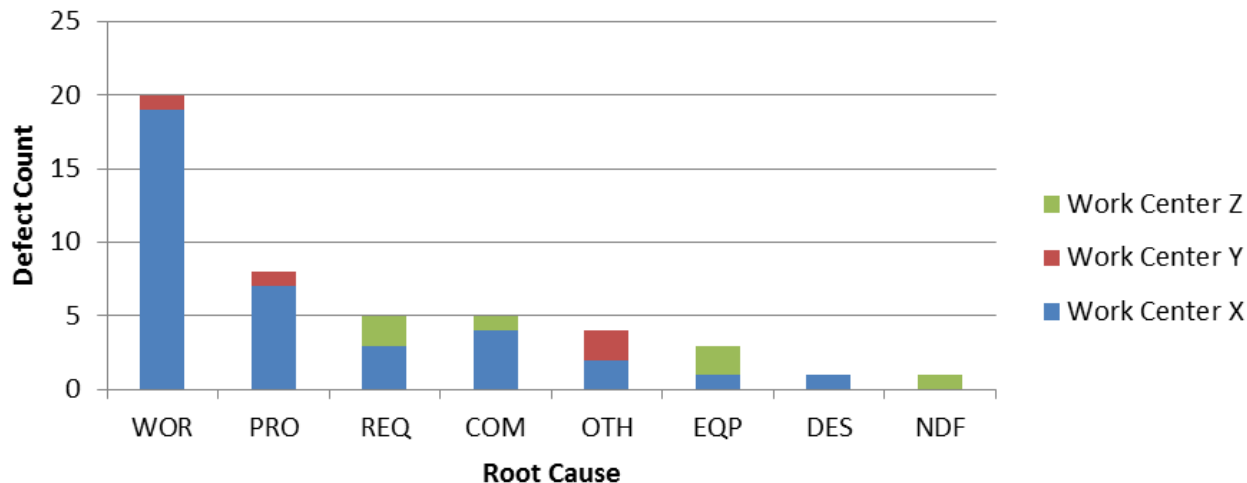**Aerospace Manufacturing Center Work Center A**

- 2011 Work Center A defects primarily due to equipment root causes

- Program-provided tools causing vacuum leak failures

- Several work centers experiencing tooling issues

- Tooling Engineer hired in 2011

Utilizing lessons learned for success with spaceflight product development
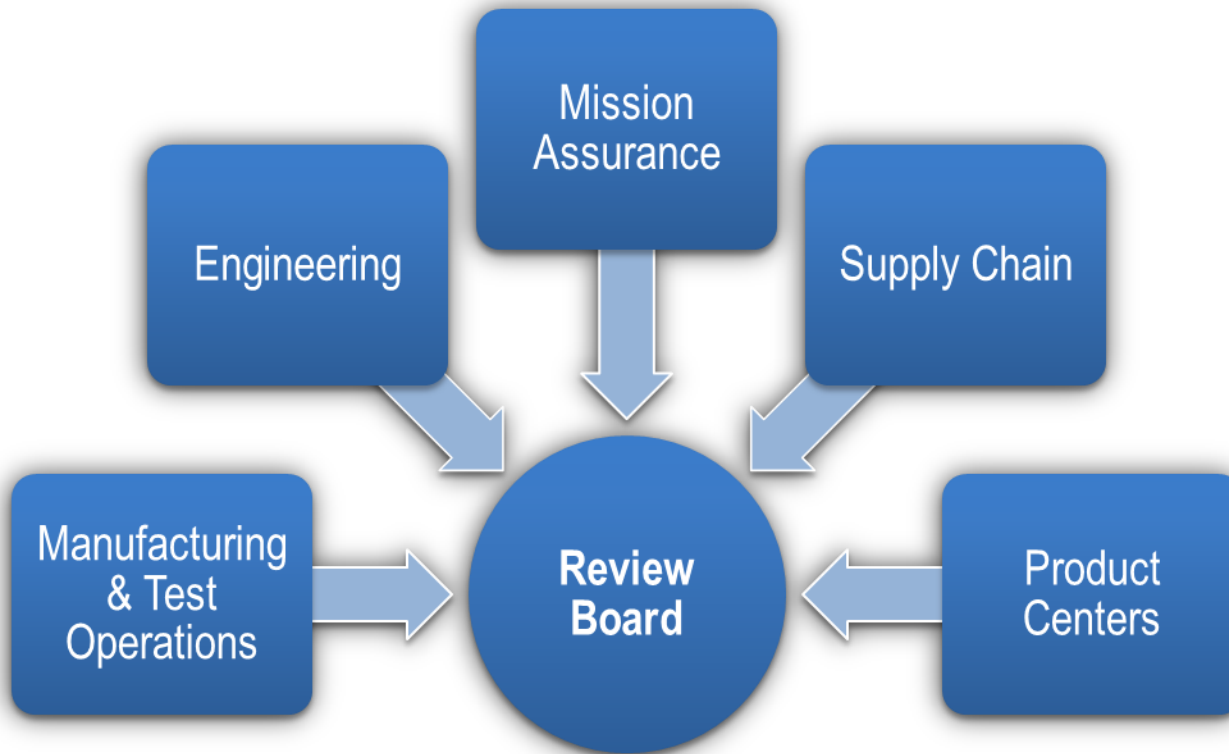
Product Center 2013 Q1

- **Closer look at work centers within a particular Product Center**

- **Work Center X responsible for 79% of the defects**

- **More than half of the defects due to workmanship**
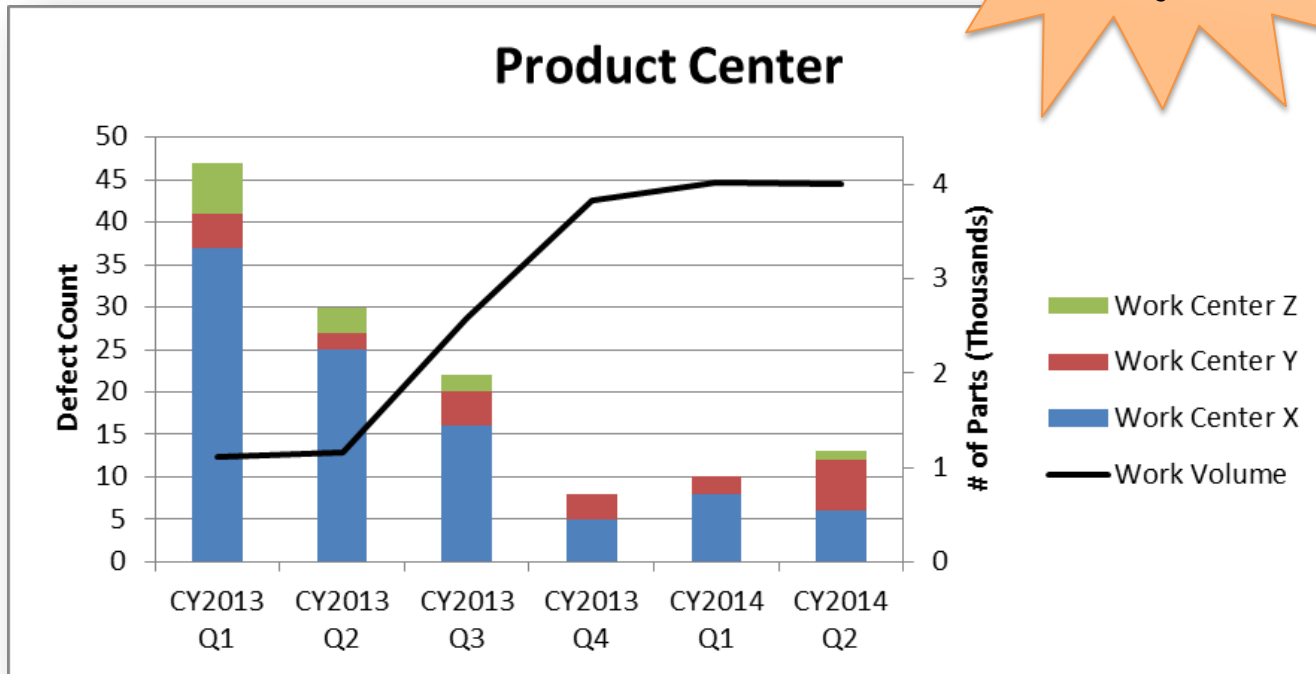
Identifying cross-area trends

Translating data into actionable insight to foster change

Product Center

84% reduction in workmanship defects

- **Improvements to standard process plans**

- **Pre and post shop order reviews**

- **Photo-heavy drawings and test procedures**

- **Vellum CAD model cable routing to place on mock-ups**

72% overall defect reduction with a 2.5x increase in work volume

- **Defect reduction efforts facilitates culture of continuous improvement and dissemination of lessons learned**

- **Structured cross-functional analysis of defects enables improvements in operational performance**

- **Investments in preventative actions lead to affordable program execution**

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