Knowledge Aware Engineering

Why placing knowledge in the flow of work will be a game changing engineering capability
Jeff Moffa

Jeff has been an innovative leader in the field of Engineering Knowledge Management and Intelligent Design Automation for the past fifteen years and is the author of the whitepaper ‘Knowledge Aware Engineering’.

Jeff is currently the President of Auros Knowledge Systems where he heads the business, research, and product development teams.

Prior to Emergent Systems, Jeff worked at Ford Motor Company in the Advanced Manufacturing Technology Development organization leading several Design Automation and Knowledge Systems projects.

Jeff has a BS Mechanical Engineering from Miami University and earned his an MBA from Michigan State University’s Eli Broad Graduate School of Management.
What is the point?

- Increase engineering efficiency
- Prevention of past mistakes
- Build and improve competency over time
- Consistency and robustness of engineering outcomes

>> Managing Technical Knowledge is critical <<
Existing Approaches

Document Centric

Library Model

>> Past Approaches are passive, ineffective <<
Existing Approaches

Document Centric

>> Virtualized, but still passive, ineffective <<
Document Centric

Existing Approaches

>> Virtualized, but still passive, ineffective <<
**Auros: ‘Knowledge Aware’ difference**

Assessment Centric

Auros places Knowledge in-the-flow of work

>> Auros places Knowledge in-the-flow of work <<
Auros: Value to you

Certainty in Knowledge re-use

Continuous Product & Process Validation, Verification, & Evaluation

Closed-loop Enterprise Learning and Knowledge Sharing

>> Auros is an *active* knowledge system that places knowledge in-the-flow of work <<
Auros: Knowledge Aware Engineering

- Continuous Validation
- Issue Management
- Assessment Control
- Knowledge Packet
- Community
- Knowledge in-the-flow Services

Predictive Analytics

Instance

Generalized

Team Collaboration
Auros Core Technology

Knowledge Packet

>> K-PACs are the ideal way to manage all technical knowledge <<
Assessment Control

>>> Knowledge is assessed continuously – everywhere <<<

Auros Core Technology

Global Product Data Interoperability Summit | 2016
Auros Assessment Controls ensure critical knowledge is delivered in-the-flow of Work.

Assessment Controls deliver Knowledge in-the-flow of Work.
Auros Assessment Controls ensure critical knowledge is delivered in the flow of work.

Sales  
Electrical  
Software  
Mechanical  
Quality  
Manufacturing

Gate 1  Gate 2  Gate 3  Gate 4  Gate 5

Assessment Controls deliver Knowledge in-the-flow of Work
Auros Assessment Controls ensure critical knowledge is delivered in-the-flow of Work.

Gate 1 | Gate 2 | Gate 3 | Gate 4 | Gate 5

- Sales
- Electrical
- Software
- Mechanical
- Quality
- Manufacturing

>> Assessment Controls deliver Knowledge in-the-flow of Work <<
Auros Assessment Controls ensure critical knowledge is delivered.

Your Process

Gate 1
Gate 2
Gate 3
Gate 4
Gate 5

Sales
Electrical
Software
Mechanical
Quality
Manufacturing

Assessment Controls deliver Knowledge in-the-flow of Work

Global Product Data Interoperability Summit | 2016
Auros Assessment Controls ensure critical knowledge is delivered in-the-flow of work.
Document are inherently separated from the flow of work
"We have a set of Design Standards that we constantly update... Design Standards are the first line of defense, if you know that you have realizable Design Standards you certainly want to repeat those over and over again. And we have what we call a ‘Checklist’; where everything that we learned from a mistake in the past and we create a counter measure to it, goes into that Checklist, and we go through a series of checks in the very early stages, in terms of the making sure we have right design and right content."

Bennie Fowler
Group VP of Global Quality

http://www.autoline.tv/show/1413?play

>> Auros has a proven track record of high impact and value <<
Auros Value: Measured Value at GM

GM implemented Auros in late 2010:

- 200% increase in the number of K-PACs
- 150% increase of active users

→ Auros has a proven track record of high impact and value
Auros Value: Auros is Enterprise

>> Auros ‘in-the-flow of work’ is an Enterprise-wide solution <<
Auros Software is developed by Emergent Systems

- Founded in 1997
- HQ in Dearborn, Michigan
  - Global Team locations:
    - Dearborn, MI
    - Kharkiv, Ukraine
    - Hyderabad, India
  - Service Partner Network:
    - Paris, France
    - Pune, India
- Large Customer/User Base
  - 34,000 users - growing

>> Established Company with rapid growth <<
Auros Unique Features: Rules Engine

Auros puts knowledge into the flow-of-work (e.g. CAD)
Auros Unique Features: Look Across

With Auros, past solutions to issues are automatically connected to current context leading to deeper insights and faster problem solving. The grid below is a ‘Reverse’ assessment showing all past projects where knowledge was used.>

>> Auros allows users to connect with past similar projects/problems <<
Auros Unique Features: Dynamic Knowledge Reports

With Auros, reporting within and across projects for problem identification, status and roll-up is made easy. No XLS consolidation.

>> Auros provides a wide variety of reporting/analytics options <<
Auros Unique Features: Proximity Search

With Auros, engineering knowledge is automatically associated through purpose built semantic search.

- No more duplicated standards
- Related standards are ‘connected’
- Related issues are identified

>> Auros automatically makes connections across related knowledge <<
Auros Unique Features: Integrated Problem Solving

Integrated problem solving (8-D, A3, issue Mgt) ties issues to knowledge and makes problem solving ‘Knowledge Enabled’ and efficient.

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Auros Unique Features: Vitality

With Auros, Knowledge is statistically evaluated for quality or ‘Vitality’

- Experts do not have to review all standards, just standards where measured ‘Vitality’ has decayed
- End-users trust the knowledge when measured ‘Vitality’ is high

Auros calculates the ‘confidence of quality’ of knowledge items
Auros
Knowledge Best Shared