



SMART AND CONNECTED SUPPORT: USING DATA ANALYSIS TO RECOMMEND SOLUTIONS FOR PTC

Presenter's Name

Presenter's Title

Date

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SMART AND CONNECTED SUPPORT



- Using Data Analysis to Recommend Solutions for PTC



Jim Burroughs
Senior Vice President
PTC Technical Support

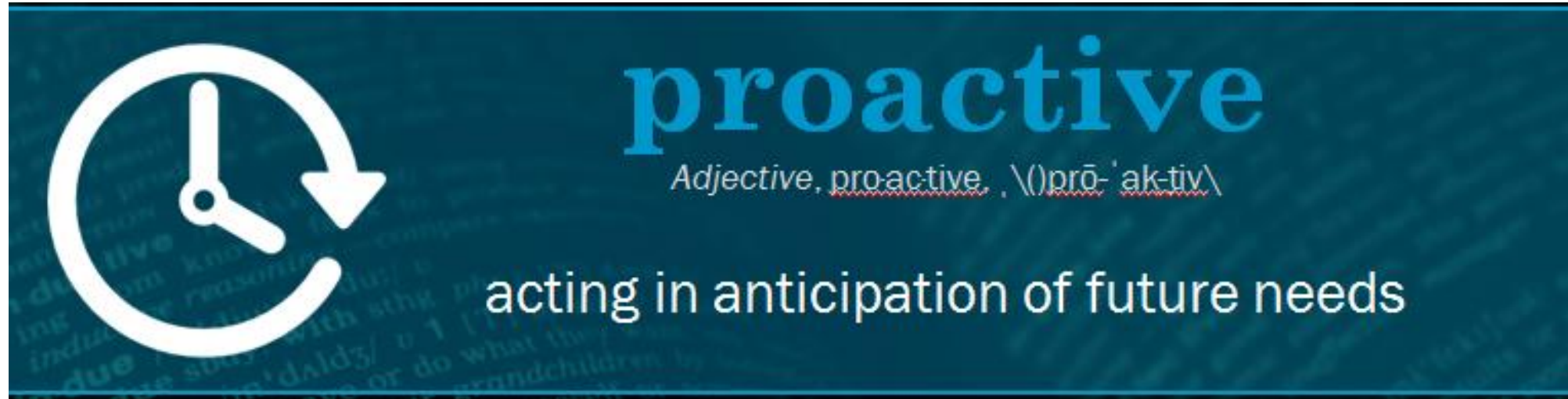


Kevin Skerrett
Manager of Technology Innovations
PTC Customer Strategy

AGENDA

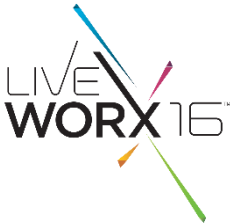
- ❑ Introduction
- ❑ Vision of Technical Support
- ❑ Today's Connected Products
- ❑ Realizing the vision
 - Use case: Windchill Performance
 - Use case: Easier to find Knowledge

If you wait for it to happen, it's too late!

A graphic with a dark teal background. On the left is a white icon of a clock face with a circular arrow around it, indicating a cycle or anticipation. To the right, the word "proactive" is written in a large, bold, blue serif font. Below it, the word "proactive" is repeated in a smaller, white, sans-serif font, with a red underline under the "o" and "a". Below that, the definition "acting in anticipation of future needs" is written in a white, sans-serif font. The background of the graphic has faint, illegible text in a lighter shade of teal.

proactive
Adjective, pro-active, \()prō-'ak-tiv\
acting in anticipation of future needs

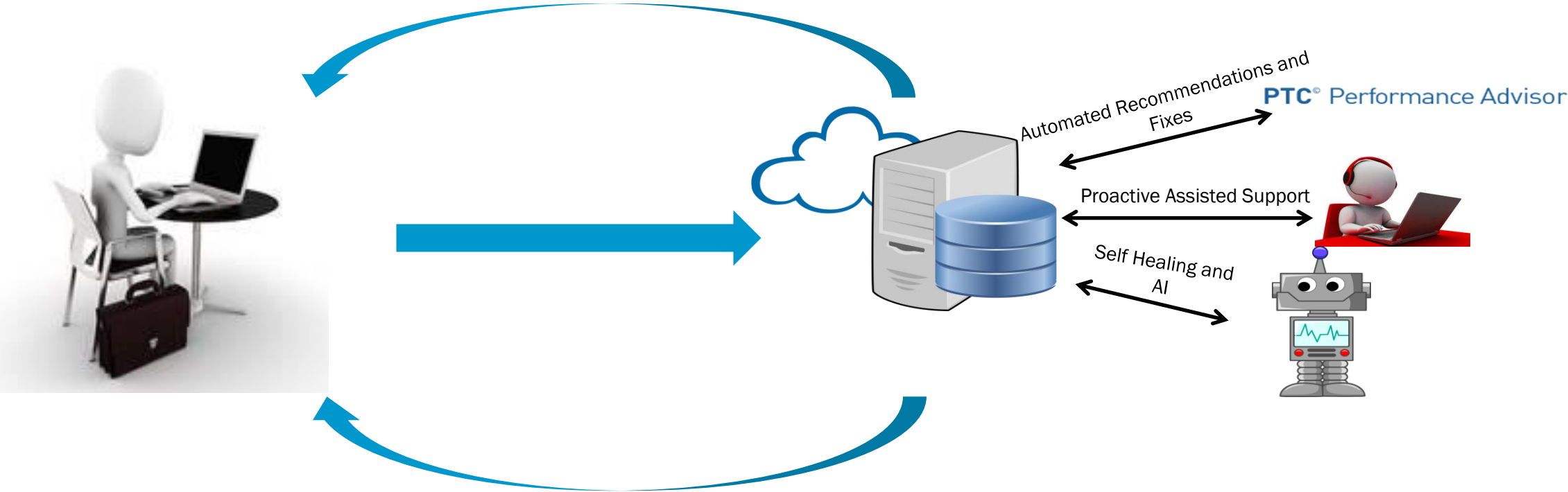
HOW DO WE EVOLVE SUPPORT



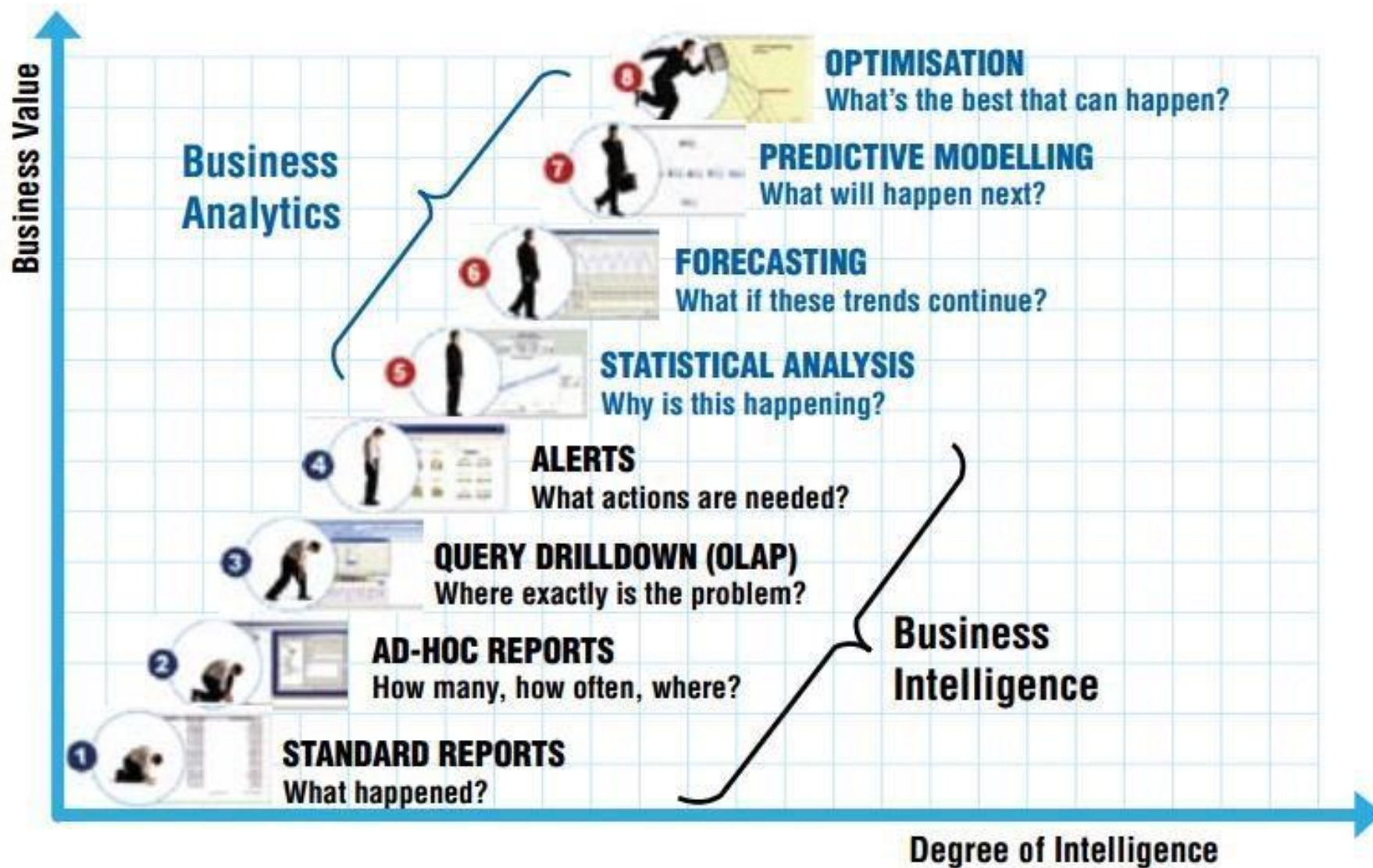
Connected Products
and Platforms

Data Analytics

Connected Services



IT'S A JOURNEY - LEVELS OF ANALYTICS



TODAY'S CONNECTED PRODUCTS

PTC® Performance Advisor

Performance Advisor for PTC Creo

Performance Advisor for PTC Windchill

Performance Advisor for PTC Integrity Lifecycle Manager

ThingWorx™
A PTC Business

*Coming Soon



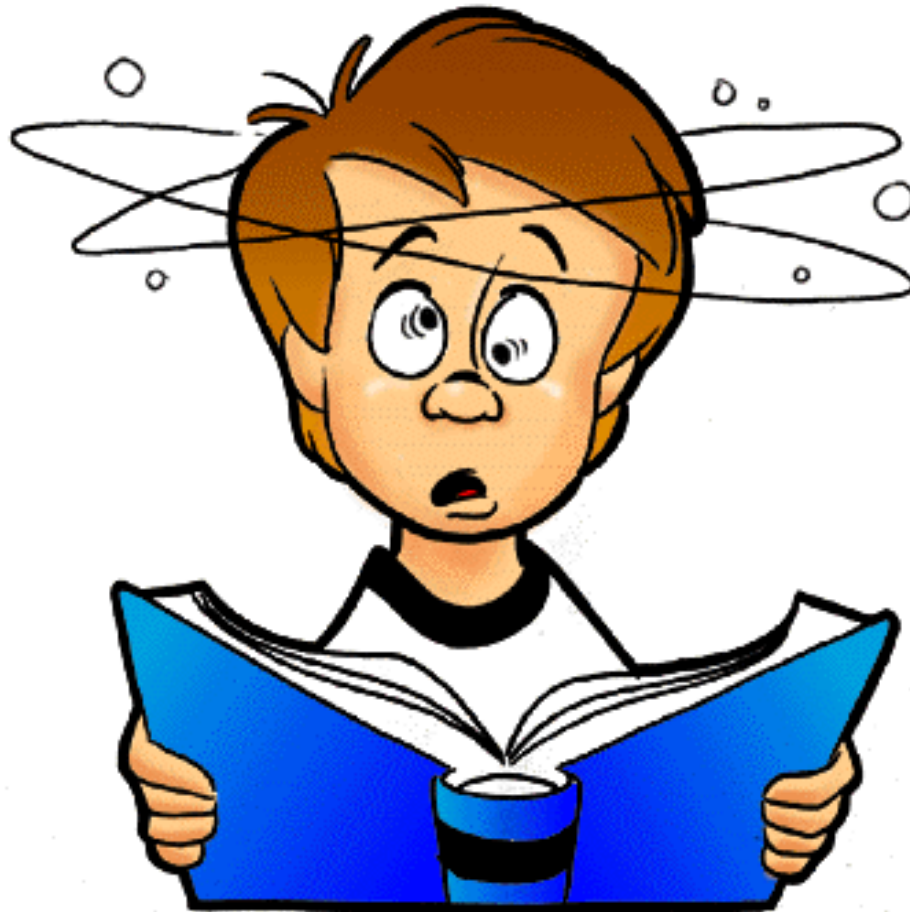
Lots of Great Data!

Now what to Do With It?

WINDCHILL PERFORMANCE

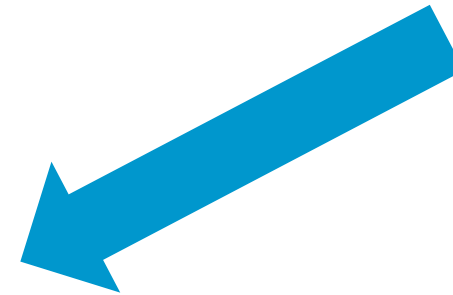
USE CASE #1: CONNECTED WINDCHILL

- Problem: PTC Windchill can see performance degradation due to Long-Running SQL Statements that can be solved by tuning.



HOW CAN PTC MAKE THIS SITUATION BETTER?

- Link the SQL to Articles with Solutions



THIS IS HARD



Matching
Fuzy

Articles
Recommendations
Scale

Performance
SQL

Knowledge
Difficult

Duplicates
Volume

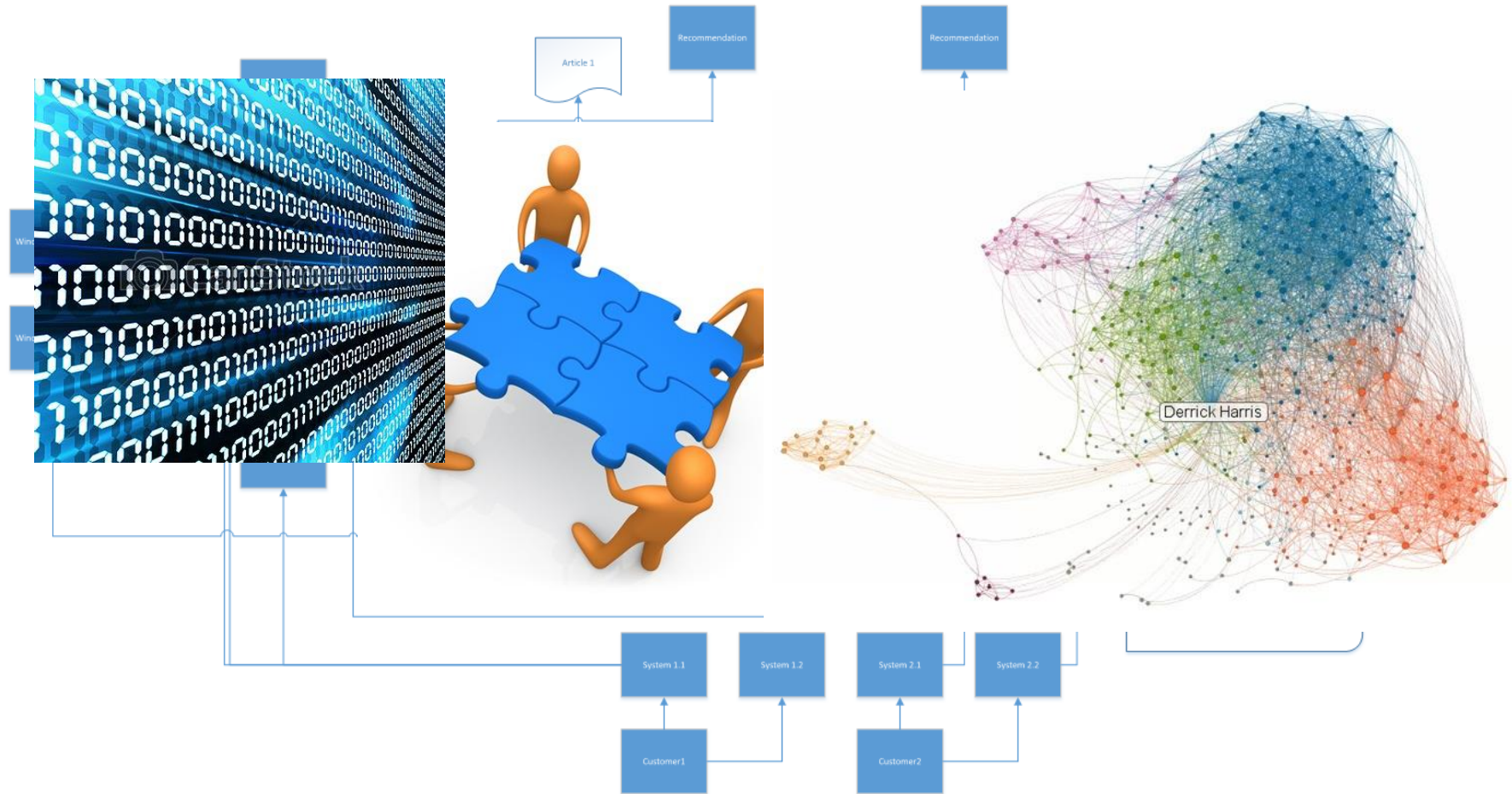
Unhappy

Long

Millions

WHAT DOES THE SOLUTION LOOK LIKE?

- Simplified Data Architectural Overview



WHAT THIS WILL MEAN

- Automated Recommendations
 - A Faster Enterprise System
 - More Reliable
 - More Productive Users
- Less Time for administrators will need to spend firefighting or debugging problems

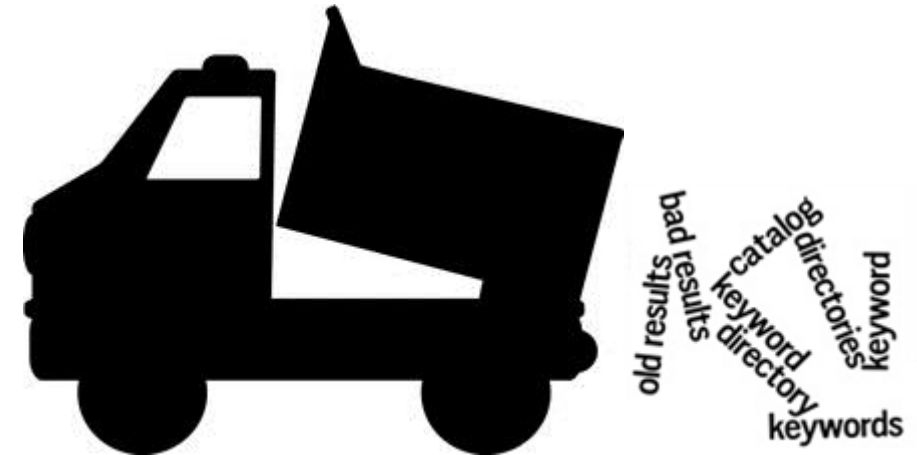
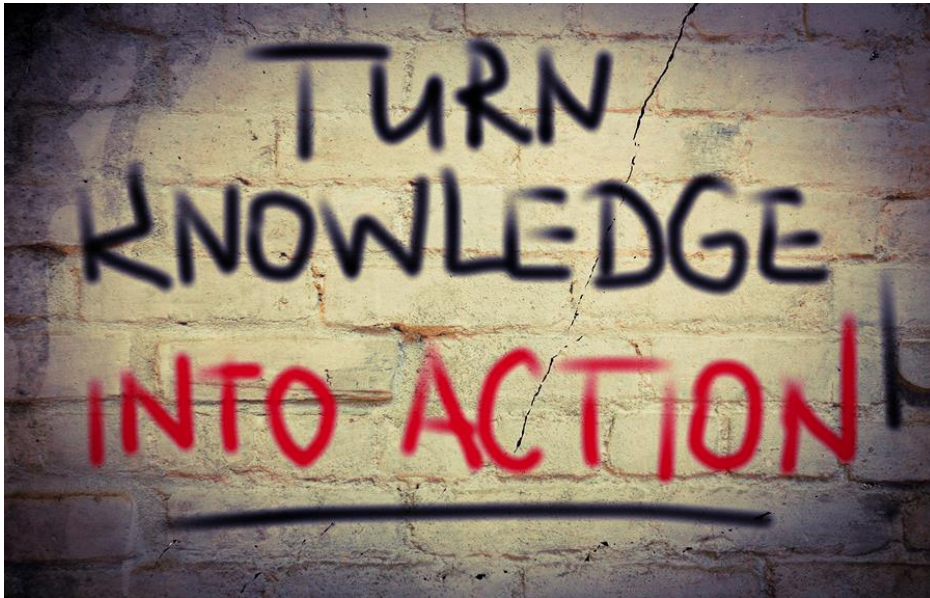


EASIER TO FIND KNOWLEDGE

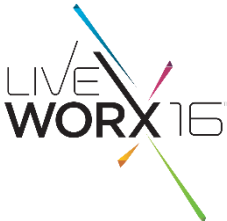
USE CASE #2: MACHINE LEARNING AT CASE CREATION

Problem: At Case-Creation Customers are not being served solutions to the problems they describe

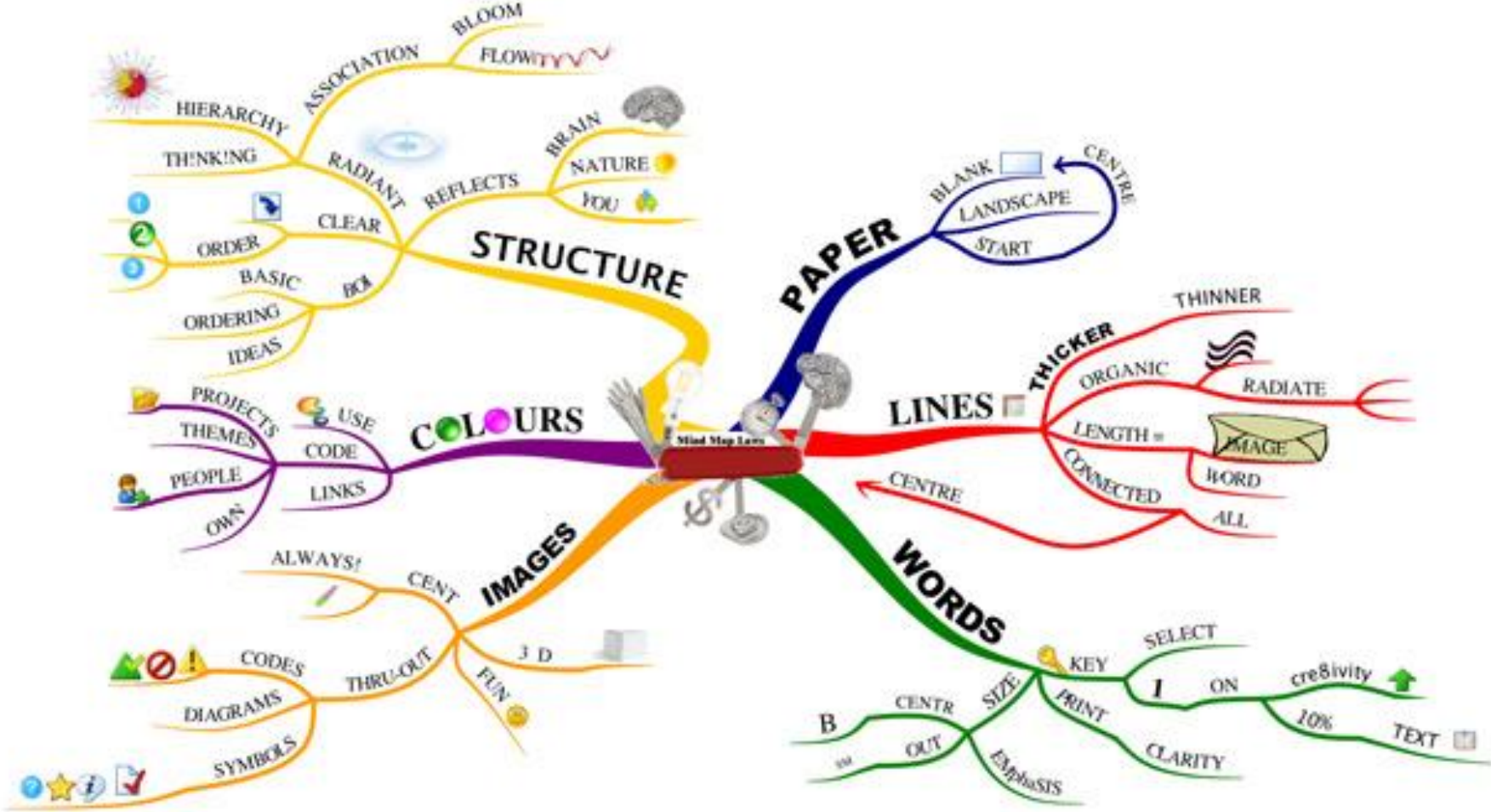
- What People Want:
- What They Actually Get:



SOLUTION USE STATE OF THE ART NATURAL LANGUAGE PROCESSING



- Word2Vec!



SEARCH LIMITATIONS?

UPGRADE vs UPDATE. These mean different things in Windows. Grayed out Search can be learned from customer use that can help but this is not a simple replacement)

Many "Key" words are missing; with intelligence you can understand the domain

"Update Installation button grayed out trying to upgrade"

Search: 0 Articles, 16 Reference Documents (#1 is Patch notes)

Machine Learning: [CS41492: "Update existing installation" is greyed-out while running PTC Solution Installer \(PSI\) to update Windchill solutions](#)




INTRODUCING DYLAN



- Trained on previous Case solutions
- Looks like a search, but is actually a solution Recommender

Suggested Articles For Your Issue ✕

 Our search expert, Dylan, has found 70 articles with a high confidence match for your issue, and a further 0 with close relevancy ratings. Please review the articles below, or modify the case description and click the **Update** button.

Workflow ECN sync robot is not firing. 🔍 Update

★ **"wt.workflow.WfException: Can't execute: bad workflow expression" causes workflow process to hang in Windchill PDMLink**

★ The workflow process goes through the AND connector and reaches the next activity when Looping back the process with "Loop Link" even though there are some activities before the AND connector which are not completed the second time in Windchill PDMLink 9

★ "Unexpected error marking the change plan activity as complete" during the Change Notice Workflow in Windchill PDMLink

★ Change Notice workflow hangs on "Synch on CA Complete" robot in Windchill PDMLink 10

★ Workflow stopped with error in Process Manager: "Error: Stalled (Failed queue entry)" in Windchill PDMLink 10.0 M020

★ A workflow process hangs at set state robot in Windchill PDMLink

★ Cluster Environment seems to cause a problem with synchronization robot "Synch on CA Complete" in change notice workflow on Windchill 10.0

⬆️ Previous 7 Next 7 ⬆️

CS132104: "wt.workflow.WfException: Can't execute: bad workflow expression" causes workflow process to hang in Windchill PDMLink 📄 ✉️

Description

- *wt.workflow.WfException: Can't execute: bad workflow expression* causes workflow process to hang

Resolution

- Check-out the workflow template
- Verify code inside expressions and conditionals using the **Check Syntax** feature
- Correct any errors reported by **Check Syntax**
- Check-in the workflow template
- Hung processes will need to be restarted to pickup template changes

✕ Close page - I have what I need 🔍 Nothing relevant - open a case ✉️ Email results and open a case

The image features several colorful geometric shapes, including triangles and lines in shades of blue, green, yellow, and purple, scattered across the background. A large, multi-colored triangular shape is prominent on the right side. The text 'LIVE WORX 16' is centered, with 'LIVE' in a thin, outlined font and 'WORX 16' in a bold, solid black font. A small 'TM' trademark symbol is positioned to the right of the '16'.

LIVE
WORX 16™

TAKE A FRESH LOOK AT THINGS

liveworx.com

BACK UP

MAP TO DATA ANALYSIS INNOVATION



**Collect and Store the Right
Data the Right Way**



Data

Try Things and Fail!

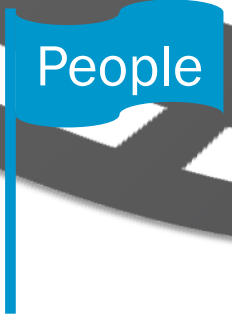


Experiment!

**This is a long-term
Investment**



Keep Going



People

**Get the Right People
Working with the Data**



Test And Disrupt

**Do Beta Tests and don't be
afraid to change the status Quo**

- 1. Codify Human Knowledge into a Machine – SME's Write Data Parsers**
- 2. Correlate Incoming Problems with Existing KB Content**
- 3. Machine Detects & Predicts Problems**
- 4. Machine Learns how to Resolve Problems Autonomously**

