“New! Predictive Defect Convergence with HPE ALM”

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Today's Speakers

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Housekeeping

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- <u>Session Q&A:</u>
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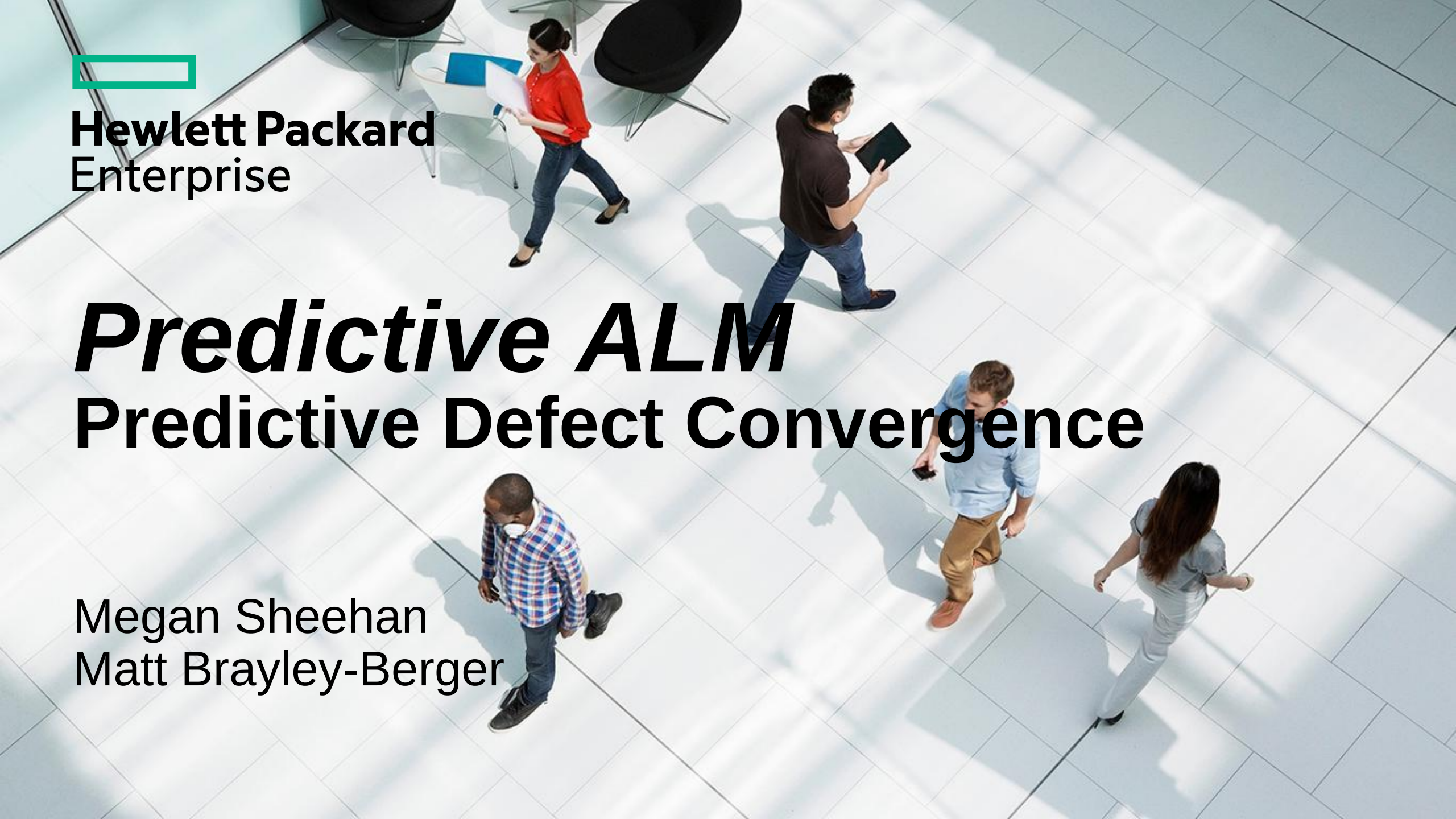
Questions



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Predictive ALM

Predictive Defect Convergence

Megan Sheehan
Matt Brayley-Berger

Forward-looking statements

This is a rolling (up to three year) Roadmap and is subject to change without notice.

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Agenda

- Why ‘Big Data’ matters in ALM
  - Leveraging the data within HPE ALM to understand more
  - Overview of focus areas for Predictive ALM
    - Planning, Quality, Testing, Code
- Predictive Defect Convergence
  - What it is, how it works
  - Demo
  - How to get it & the type of feedback we’re looking for
- “Get Your Data Ready” whitepaper
- Q+A

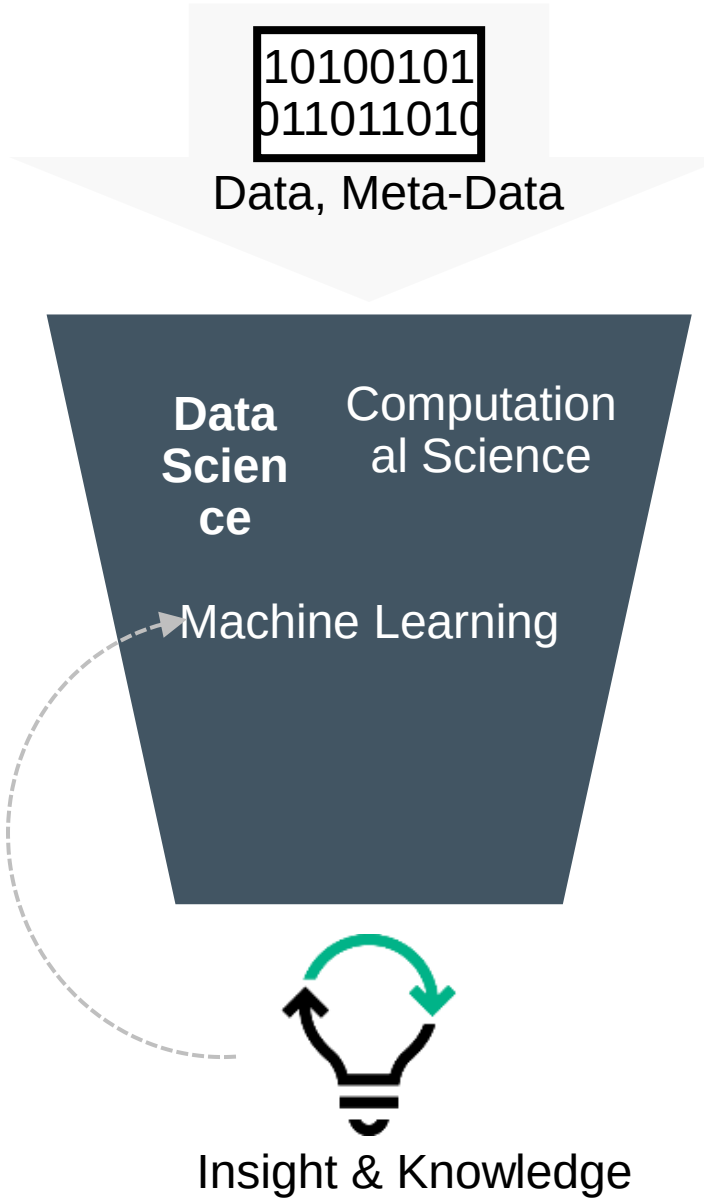
Why Big Data Matters in ALM

"…big data represents a fundamental shift in how we do things. In effect, big data opens the door to a Bayesian approach to strategy where we no longer try to be "right" based on controlled research and small samples, but rather become less wrong over time as real world information floods in." *

- Greg Satell, Forbes Magazine, Oct 2013

Big Data 101

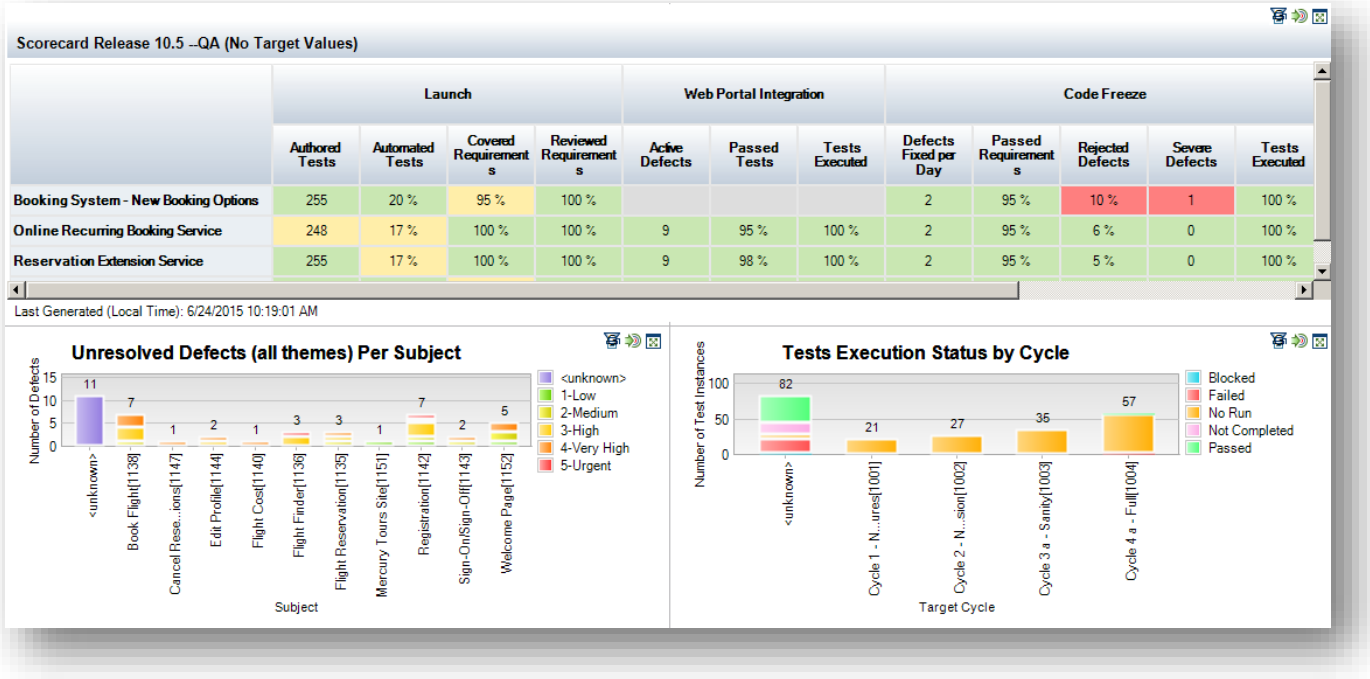
- Already heavily in use in many domains: medical research, robotics, environmental sciences, marketing
- Using science and technology to turn structured and unstructured data into knowledge and insights
- Machine learning is used to program systems to learn from historical data and improve over time
  - Starts with a theoretical model (how you expect things to work together) and then how the model is applied to observed data
  - Refined, and improved over time
- Drives business outcomes
- **Focusing on the right questions is a critical first step**
- How big, is “big”?



What about ALM data we already have today?

Fortunately, there's a lot to work with

– Requirements
  – Status, timelines, authors
  – Traceability – between other requirements and between defects
– Test Plans
  – Connected requirements, testers, timelines, linked defects
– Test Runs
  – Relationship to builds and code?
– Defects
  – Most widely used module, also most customized
  – Attributes, history, traceability, team members



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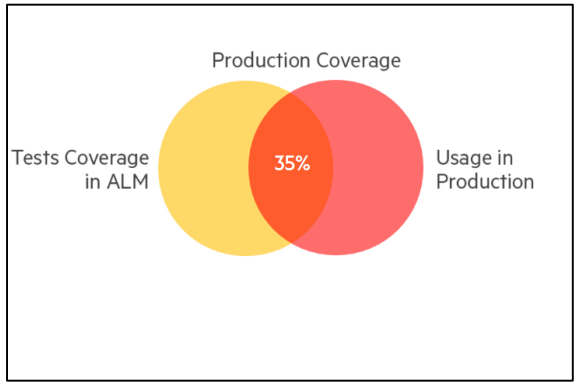
Predictive ALM

Learn from the past to predict the future with…

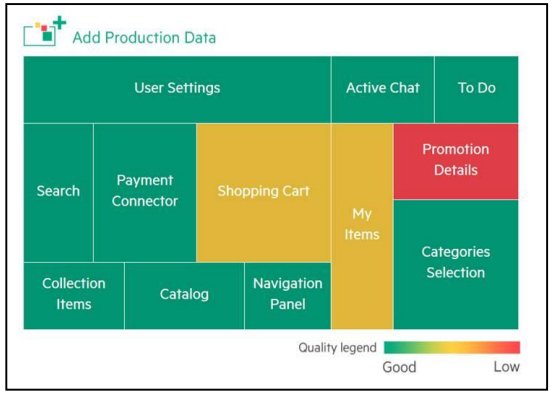
- Huge Historical ALM data repositories – dark data with untapped potential
- Analyze historical data to predict the outcome of current projects.

Powerful analysis on ITM Big Data to…



- Machine learning
- Pattern Matching algorithm
- Integration Framework
- Cluster Analysis

Deliver Actionable Insights & Recommendations



- Algorithms mine records and identify anomalies and trends
- Analyze relationships among variables from different SDLC data sources and provide integrated insights that aren't possible with other products.

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Predictive ALM Framework

Using machine learning and multivariate analysis to generate predictions and recommendations for mitigating risks and optimizing deliverables.

Predictive Planning

Planning stage

Project Managers
Dev Team Leads
Test Team Leads
Business Analysts
Architects

Accurate planning and estimation sets the project up for success.

- Improve estimates based on story points
- Improve requirements prioritization
- Identify under or overcapacity

Predictive Development

Development stage

Developers
Testers

Improved efficiency and accuracy while writing code and avoiding rework.

- Predict which code commits will break the build
- Identify existing code that provides desired functionality

Predictive Testing

Testing stage

Developers
Testers
IT Ops Managers

Accelerate the process of finding and fixing defects.

- Predict defect injection & fix rates
- Identify defects likely to cause escalations
- Identify existing tests to reuse

Predictive Operations

Production stage

IT Ops Managers
Testers
Developers

Avoid issues in production and promote collaboration among Development, Test, and Operations teams.

- Identify gap between users actions & test coverage
- Reduce the likelihood of escaped defects
- Optimize load balancing

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NEW!

Predictive Defect Convergence, for HPE ALM

Predictive Defect Convergence, for HPE ALM

What is it?

- Accurately predicting convergence or handling time for software defects is challenging.
- A generic algorithm lacks reliability. Some of the challenges include:
  - Limited information available when the defect is opened
  - Variation in defect structure, type, and complexity across projects and teams.
- The Predictive Defect Convergence algorithm for HPE ALM uses machine learning regression techniques to predict the handling time of defects based on the historical data of similar defects.
  - The algorithm is available as an add in to ALM/QC versions 11.52 and newer through HPLN.
  - You can use any of the filters in ALM/QC to select a subset of defects for calculation.
- The algorithm analyzes existing defect data from ALM projects to calculate the convergence probability and date.
- We have validated this with our own ALM data and many customer projects with promising accuracy results.

Predictive Defect Convergence, for HPE ALM
How do I get it?

– Available now to ALM and QC customers.

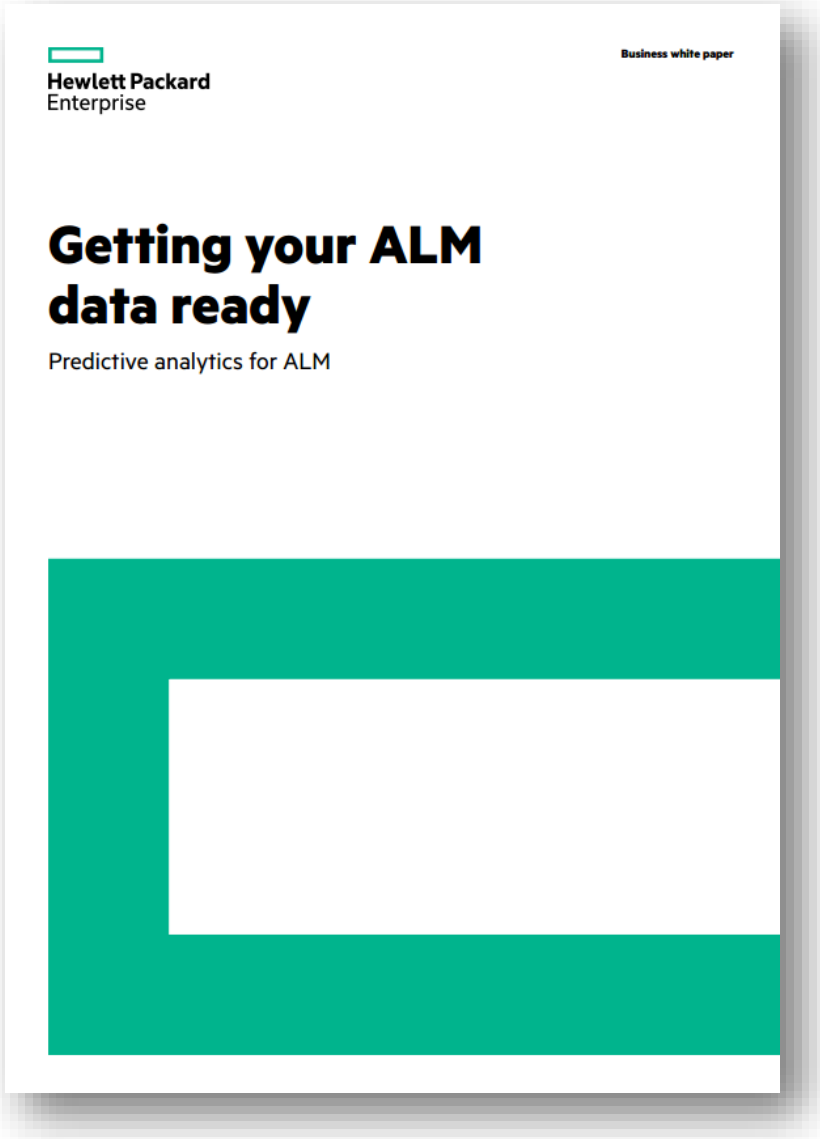
– Supported in QC or ALM 11.52, 12.02 or 12.50.

– For on premise customers, the add in is available for download on HPLN
  – https://hpln.hpe.com/contentoffering/predictive-defect-convergence
  – User guide, with detailed installation instructions is available here - https://hpln.hpe.com/contentoffering/predictive-defect-convergence

– For SaaS customers, please email PredictiveALM@hpe.com to request the add in.

Demo

Whitepaper: Getting Your ALM Data Ready



Defects

The defects module is one of the most-widely used tools in ALM. Many customers have a substantial amount of data about their defects from previous projects. While many customers also have user-defined fields, we recommend, at a minimum using the following:

- **Summary:** A brief summary of the defect, usually about one sentence.
- **Description:** A more detailed text description of the defect that may include reproduction steps, expected result, and actual result.
- **Detector:** The user who identified the defect.

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Q+A

Thank you

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