

# Watson AIOps transformation of ITOps

IBM Cloud Pak for Watson AIOps

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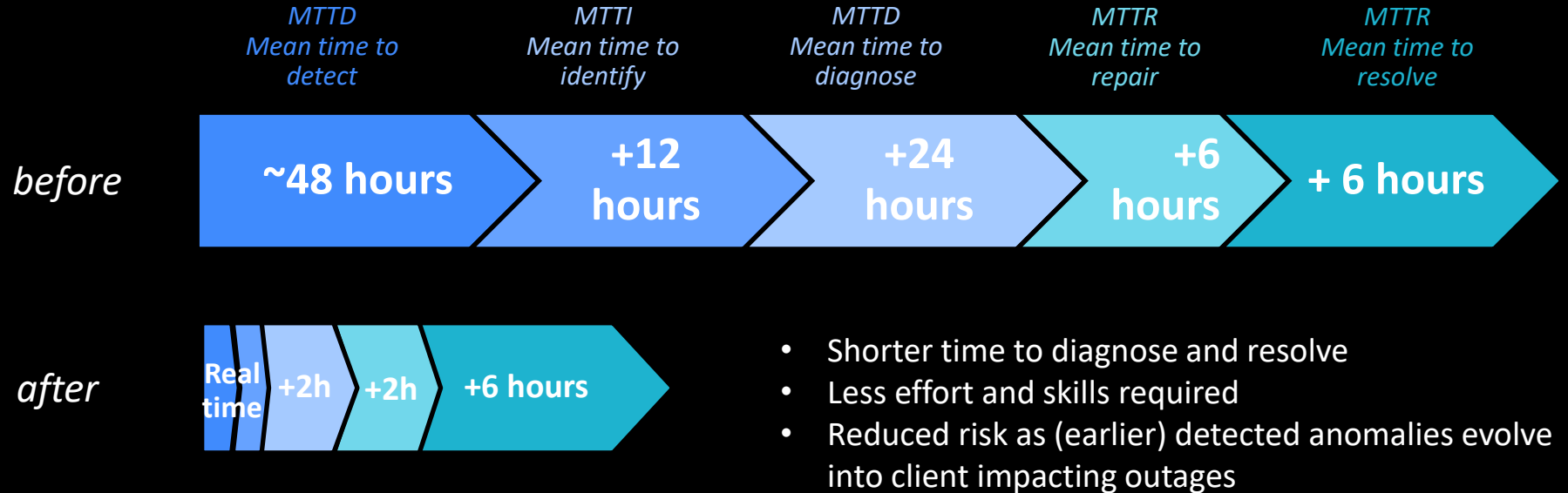
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# The world with AIOps:

Reducing time to diagnose incidents and avoid outages



# Watson AIOps

Reveals new insights faster and offers them in a concise, engaging way that transforms user experiences improves business outcomes.

## DISCOVER HIDDEN INSIGHTS

- Anomalies reveal technical debts imposed by complexity
- Traditional methods don't capture anomalies in unstructured data
- Combine Machine Learning and Natural Language Understanding for unstructured and semi-structured data

## CONNECT THE DOTS

- Combine multiple signals across different data channels
- Recognize similar incidents with a historic issue context graph.
- Identify potential vulnerabilities and risk
- Explainability for stakeholders
- Succinct recommendations and next-best-actions

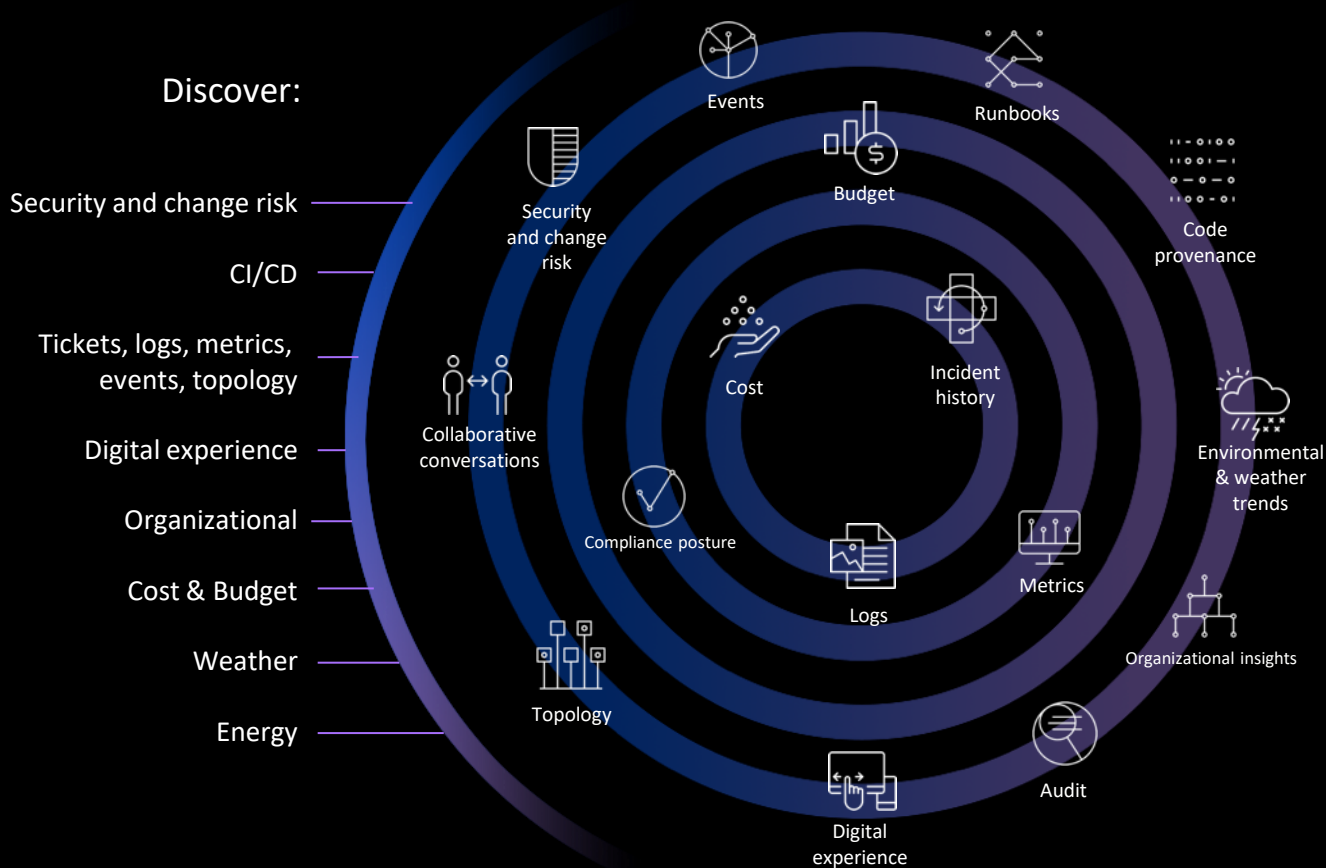
## SURFACE ADVICE WHERE PEOPLE WORK

- Feed insights and next-best-action into existing workflows or ChatOps
- SITREP-style reporting enables effective decision making
- Explainability to trust recommendations
- Learn from user interactions
- Automate with confidence

# Correlate relevant data in real time to detect hidden anomalies

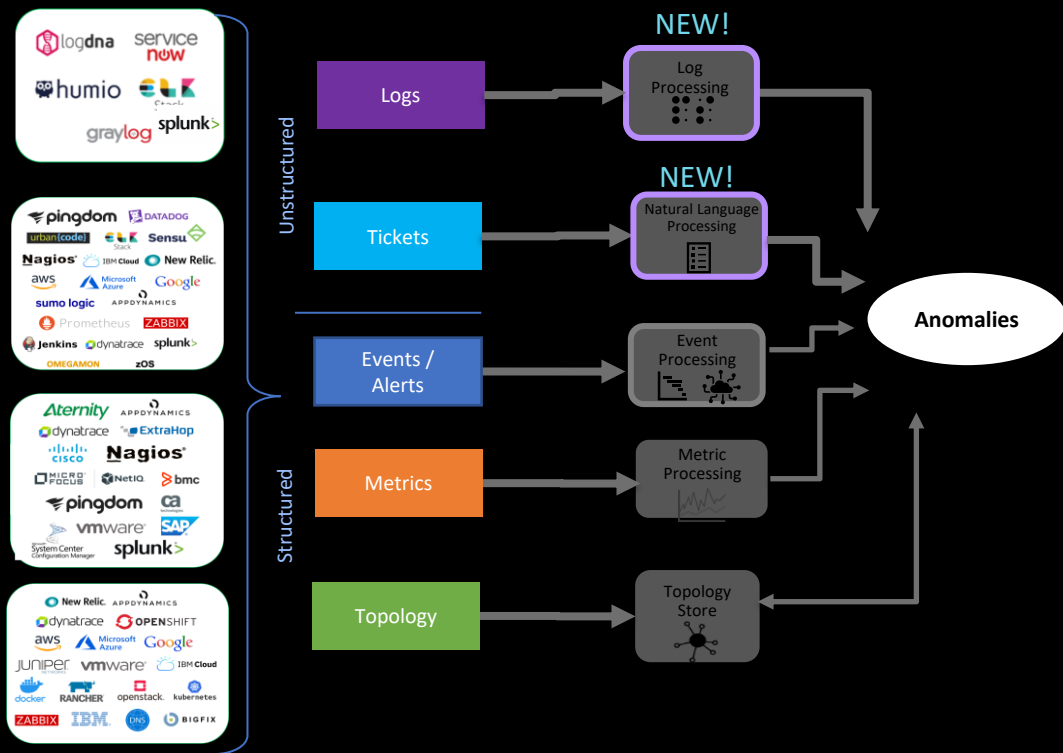
Break IT Ops silos

Comprehensive understanding of business applications with insights and intelligence across both structured and unstructured data sources to identify anomalies



# Detect, Identify and Diagnose

Ingest and analyze data using AI, detect anomalies and surface alerts with details



Collect all relevant data

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## Log Anomaly Detection

- *detect anomalies from log messages*

## Metric Anomaly Detection

- *detect anomalies from time series metrics*

## Event Grouping with Entity Linking

- *group events, alerts, anomalies to reduce tickets*

## Fault Localization & Blast Radius

- *derive root fault component and full scope of components impacted by the incident*

## Incident Similarity

- *find top k ranked prior, similar incidents*

## Change Risk

- *Assess risk of current change based on past ticket information*

# AIOps mediates and AI enhances your existing tools

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**Watson AIOps**



Understand, Automate, Transform

## Understand



- Discover Applications and Ops OKRs
- Assign business criticality and goals

## Act via Automation

- Create, Configure and Test Runbooks
- Collaborate and coordinate with ChatOps
- Automate incident management

## Optimize via Transform

- Service criticality and individual SLAs
- Application Resiliency Scores
- Change Risk Guardrails
- Canary, A/B or Feature flag rollout
- Resilience Engineering



# Change Risk

## Why assess Change Risk?

Enterprises need to understand if they are putting risky changes into production

Change is one of the largest contributors to service outages

Sheer **volume and dependency** of microservices make it complex to manually assess risk

New **vulnerabilities** are constantly being identified in the industry

Impact of Outages:

- Cost
- Lost revenue opportunity
- Opportunity cost (focus on fixing outage vs other productive work)
- Customer perception and impact



# Change risk

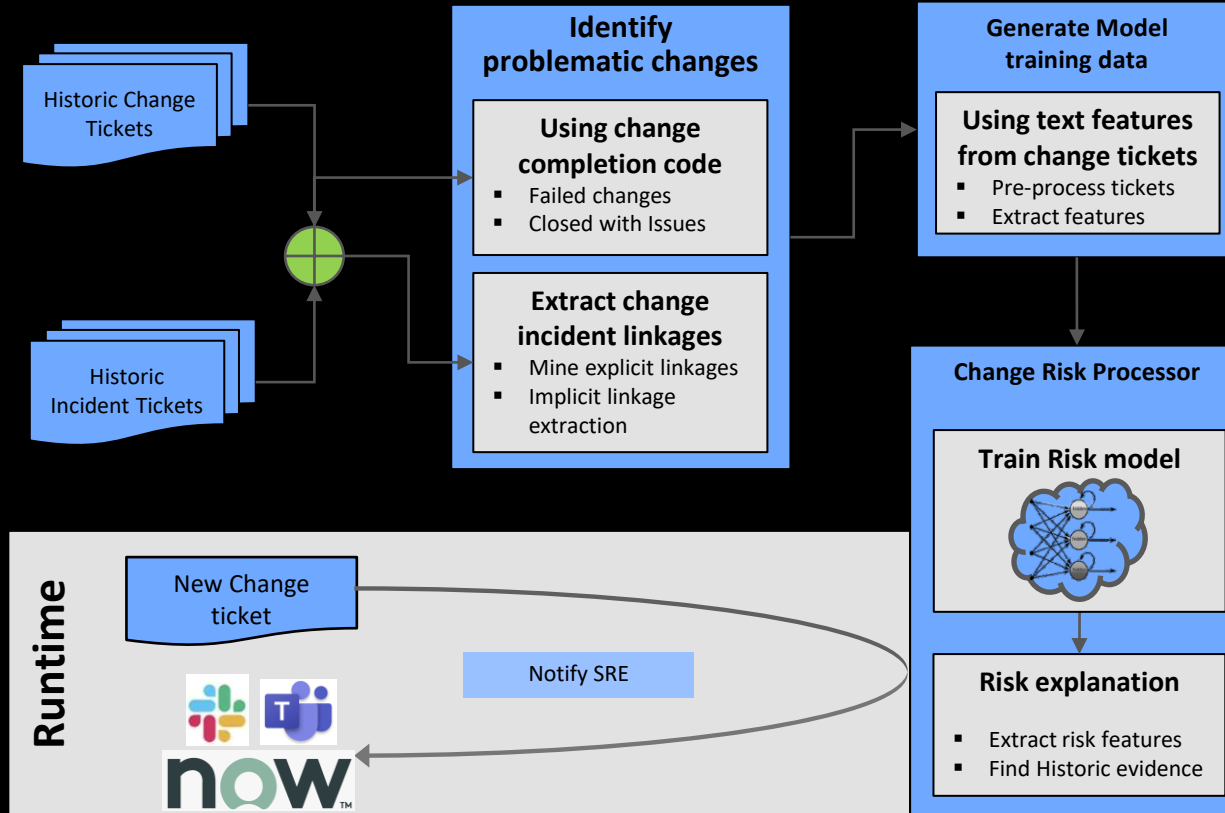
Forward looking insight on risk of changes using data driven risk measurement

As-is in the industry:

Change risk falls under two categories

- Risk in terms of the vulnerabilities deployed in changes
- Risk in terms of the operational risk based on code (complexity, size, ...), test coverage, historic data, user input, ...

# Watson AIOps – Change Risk at Deployment time via Service Now



# Watson AIOps Change Risk

Change risk assessment provided in Service Now ticket or ChatOps:

- Watson AIOps will highlight it's a high risk change with:
  - Confidence level that its high risk & related tickets
- OR
- Watson AIOps will classify it's not high risk
  - Confidence level in its assertion

Change risk calculation based on previous change and incident tickets that caused:

- SRE not able to deploy the change at all
- change caused an incident during deployment
- change deployed successfully but subsequently caused an incident

Machine learning models require 10K of incident data with 200 anomalous tickets

The top screenshot shows a Slack interface titled "Watson AIOps Workspace" with a channel "#change-risk-assessment". A message from "WAIOPS" is displayed, stating: "Change: CHG123456. Assigned to: @slackID. Creator: @slackID. Models confidence: 80%. Prior ServiceNow ticket data insights classify this as a high risk change." Below this, "Related Tickets" are listed: "#18729", "#19274", "#19275", and "Watson/sre-playbook#384". A white oval highlights the message content.

The bottom screenshot shows a Service Now ticket with a "Notes" tab selected. A note from "Watson AIOps" is displayed, stating: "Prior Service Now ticket data insights classify this as a high risk change. Models confidence: 80%." Below this, a list of tickets is shown: "CHG00678218", "CHG00677019", and "CHG00604290". A blue oval highlights the note content.

# Change Risk Demo

IBM Automation

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AI model management

AI types

Training definitions

Coverage

Data assets

Learn more

Hide details ^

What are AI types?

AI types are algorithms designed to enable AI modeling. Models analyze different kinds of data and automate research, reducing the need for manual work in solving problems.

Have I gathered the right data?


For each different AI type, you'll need to integrate with the right tools and gather specific types of data so the AI can begin learning.

[Data and tool integrations](#)

Where do I begin?


Once you have access to the right kind of data, you'll create a training definition for an AI type that specifies how you want the AI to learn.

[More documentation](#)




Change risk

Provides an assessment for the risk of deploying a code change.




Event grouping service

Groups similar events that are related to each other through specific or related components of a service.



Log anomaly detection

Gathers log data from one to many individual components in the application architecture to discover abnormal behavior.

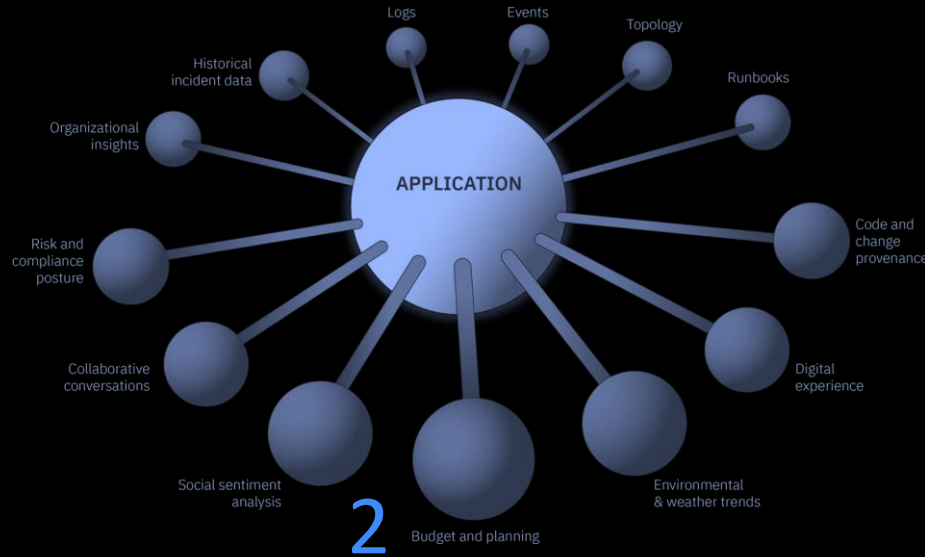


Similar incidents

Discovers details about similar messages, anomalies, and events that occurred in the past and are impacting the current application.

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# IBM Cloud Pak for Watson AIOps: differentiation



1

## Complete observability of the application environment

Drive rapid time to value by detecting, identifying, acting on incidents with automation and proactive application management

2

## Application-centric insights, recommendations, automation

Break IT silos and put business applications at the heart - baseline, curate, and highlight most relevant data across structured and unstructured data types without manual "deep-dive" investigations

3

## Closed-loop processes to enhance DevSecOps

Apply intelligence and optimize applications with data and AI across the ITOps and CI/CD toolchain by extending clients' existing investments

# IBM Cloud Pak for Watson AIOps client success stories



## Improved workflows

Built with IBM Watson, the AI-based virtual assistant manages more than 1.5 million client conversations each month



## Uncovered new insights hidden in unstructured data

Watson AIOps helped SREs investigate otherwise hidden anomalies and remediate a long-standing issue that had been hampering performance for months



## Accelerated resolution time

Watson AIOps recognizes what is "normal" for systems and uses that "normal" to identify changes in data-- hours ahead of standard efforts

# Outreach

Blog - <https://www.ibm.com/cloud/blog/steps-to-build-an-automated-system-for-change-risk-assessment>

Developer conference -

[https://developer.ibm.com/conferences/digital-developer-conference-ai-automation-inte\[...\]/track-3-protect/session-6-change-risk-estimation-for-aiops/](https://developer.ibm.com/conferences/digital-developer-conference-ai-automation-inte[...]/track-3-protect/session-6-change-risk-estimation-for-aiops/)

— **Title:** Change Risk Estimation for AIOps

**Abstract:** *When something breaks, it's often because of a change. Production systems are constantly changing. Evaluating, approving, and deploying these changes is difficult and time-consuming; supporting this change management process is an important role of operations support. We have demonstrated that history can guide us in estimating the riskiness of changes. Change risk can inform both the proactive approval process, and the responsive incident management process.*

# Thank you

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