

Risk Intelligence:

How AI can transform Risk Management

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#RAW2021



Future of ERM - Book 2

Risk Intelligence

How Artificial Intelligence can transform Risk Management

Applying Machine Learning to:

Strategic Risk with Bayesian Game Theory
Financial Risk with Time Series Forecasting
Security Risk and Blockchain Trust Systems
OpRisk with Behavioural Analysis
Third Party Risk with Knowledge Graphs
Compliance Risk with NLP Text Analytics
Market Risk with Big Data & Clustering
Virtual & Augmented Reality for Training
Bayesian Decision Networks for risk-based decision-making



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Risk Intelligence: How AI can transform Risk Management

Agenda

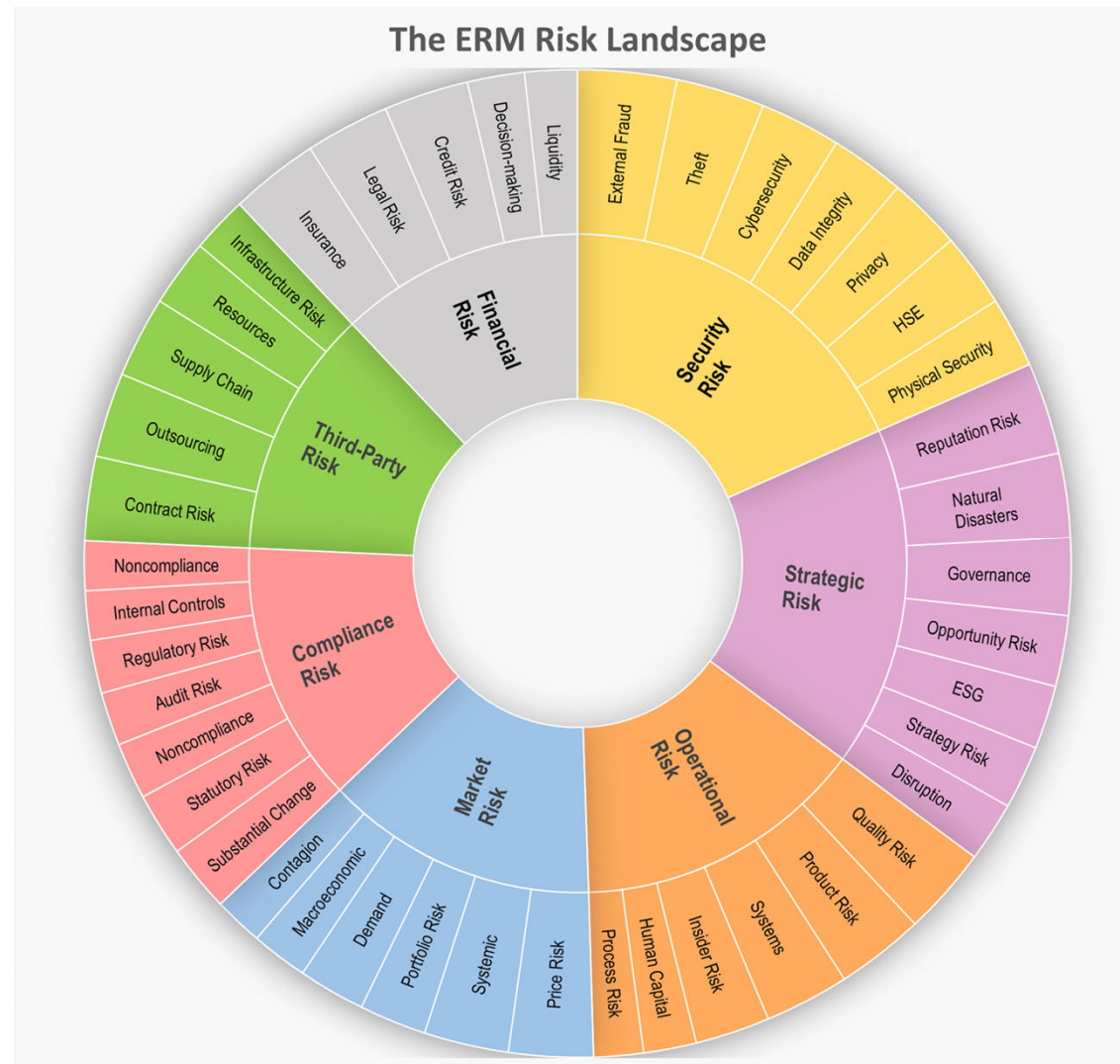
AI-based Risk Management
Behaviour Analysis
Scenario Demo
How to Setup Demo Yourself
Resources



AI-based Risk Management

7 Risk Domains

- Financial Risk
- Third-party Risk
- Security Risk
- Operational Risk
- Market Risk
- Strategic Risk
- Compliance Risk

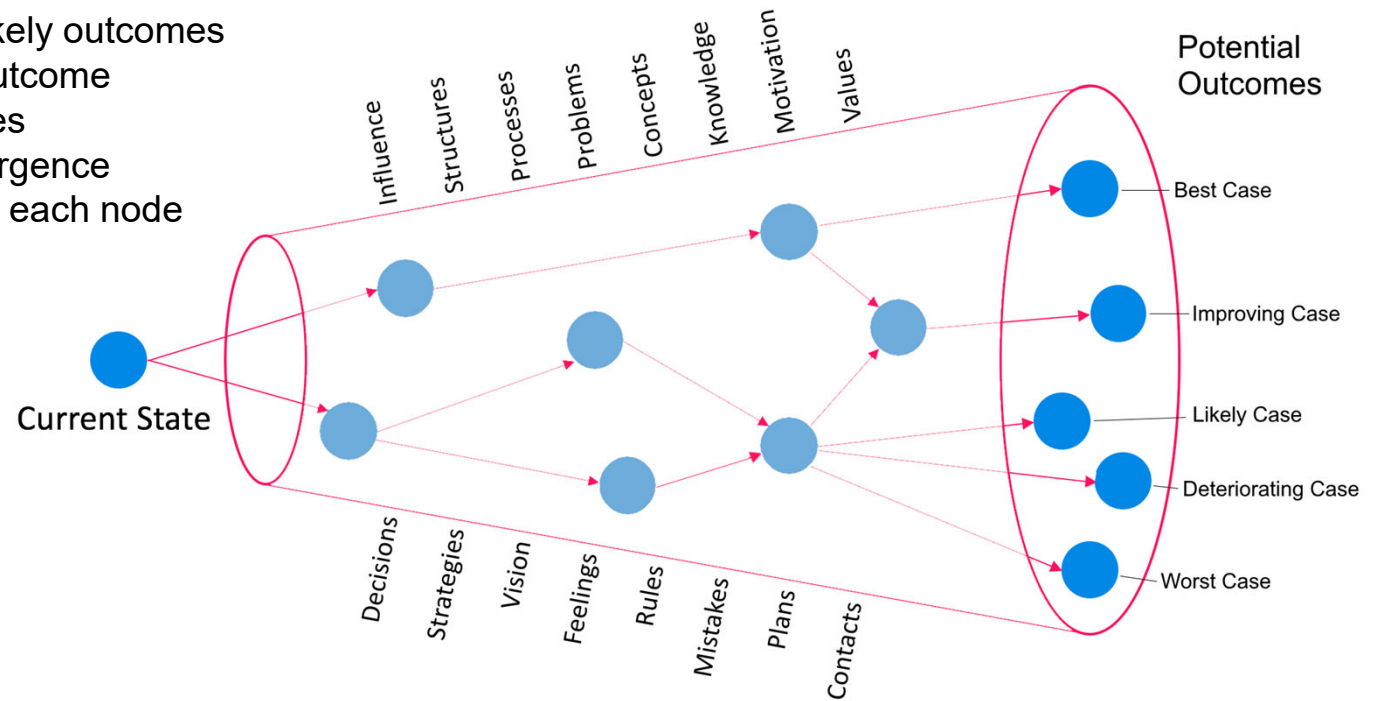


AI-based Risk Management

- Uncertainty is variation in outcomes
- Variation caused by risk events
- Scenarios Analysis identifies drivers
- Measure drivers probabilistically
- Manage risk by affecting drivers
- Monitor drivers in real-time
- AI advises how to adjust drivers

Risk Scenario

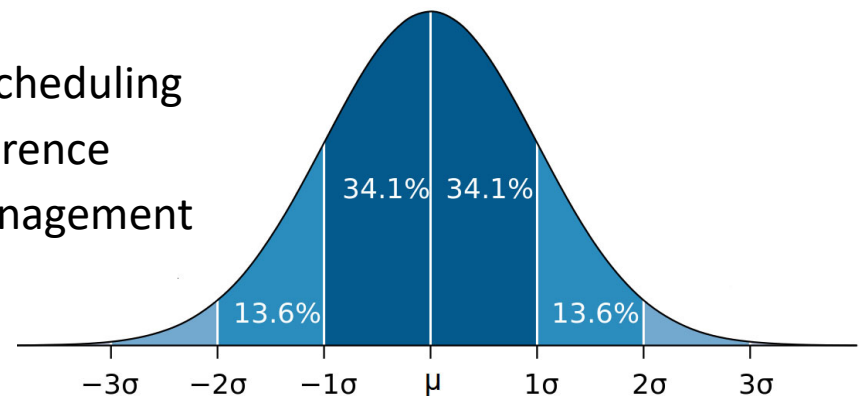
- Use Scenario Analysis
- Identify Best/Worst/likely outcomes
- Identify pathway to outcome
- Identify decision nodes
- Identify points of divergence
- Risk Drivers affecting each node



Probabilistic Modelling of Risk

Related Session at RAW2021

- 12-Oct Forest fires and floods are not the same
- 12-Oct Using stochastic decision trees to quantify environmental risks
- 13-Oct The next phase of FrankenSME: The latest developments in combining expert judgements
- 14-Oct **Chancification goes live** (up next)
- 14-Oct A Beginner's Path to Probabilistic Project Scheduling
- 15-Oct How to kill James Bond using Bayesian Inference
- 15-Oct Chance-Informed Healthcare Resource Management in the Face of Pandemic Uncertainty



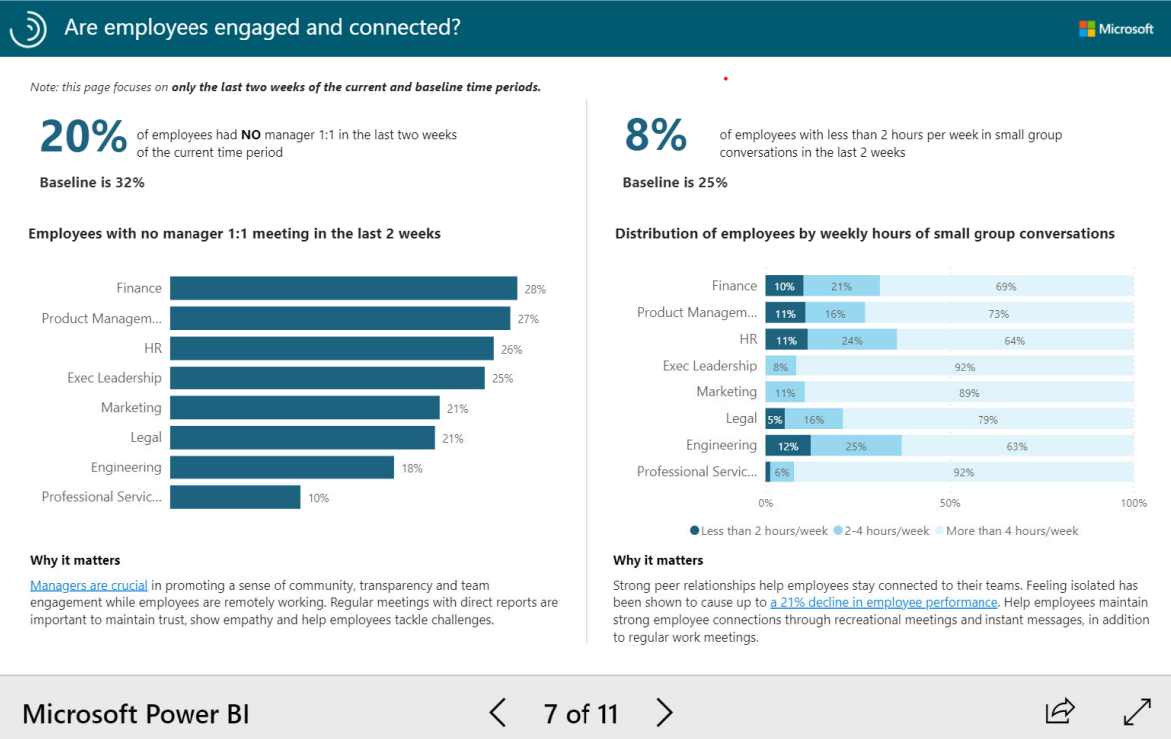
Behaviour Analysis

Behaviour eats Strategy for Breakfast

Behaviour Analysis

- How are collaboration activities changing?
- What are the impacts of work-life integration?
- Are external relationships being maintained?
- Are employees engaged and connected?
- How are work patterns evolving?
- How can remote work effectiveness be improved?

Microsoft 365 Workplace Analytics Dashboard

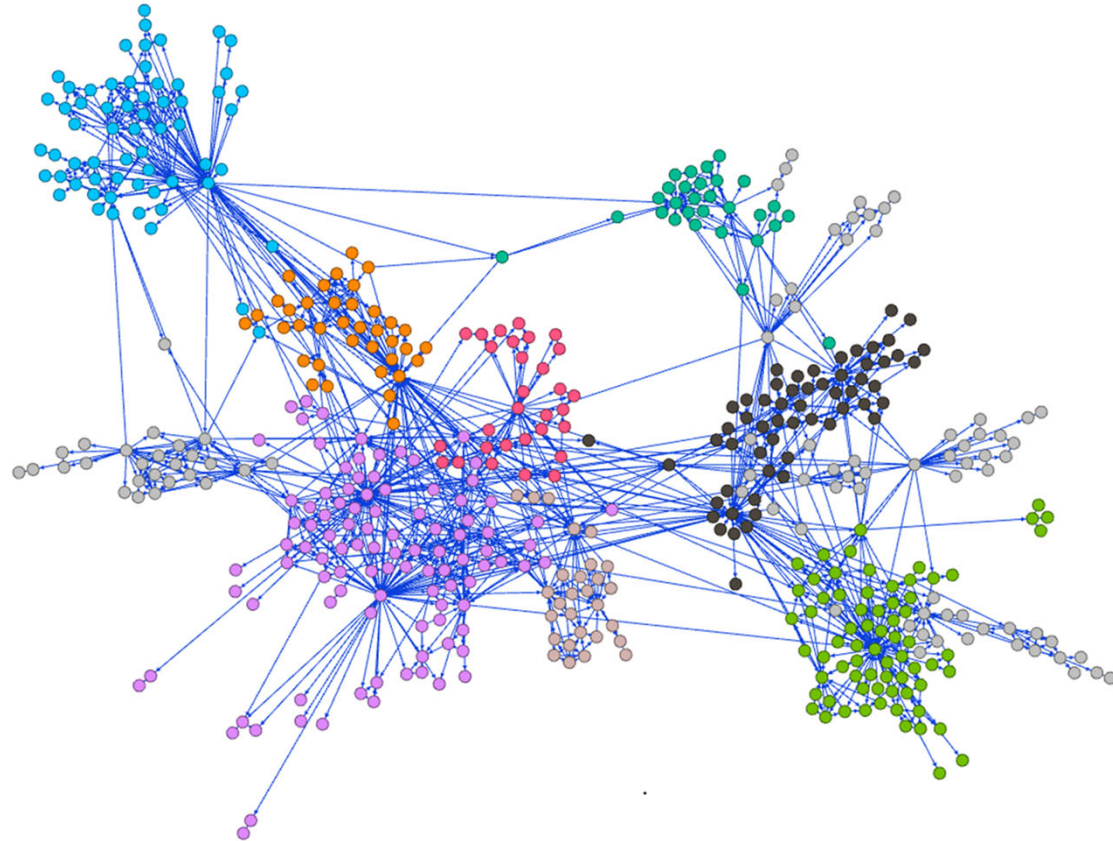


<https://docs.microsoft.com/en-us/workplace-analytics/tutorials/power-bi-bc>

Identifying Groups and sub-cultures (influencers & insider risk)

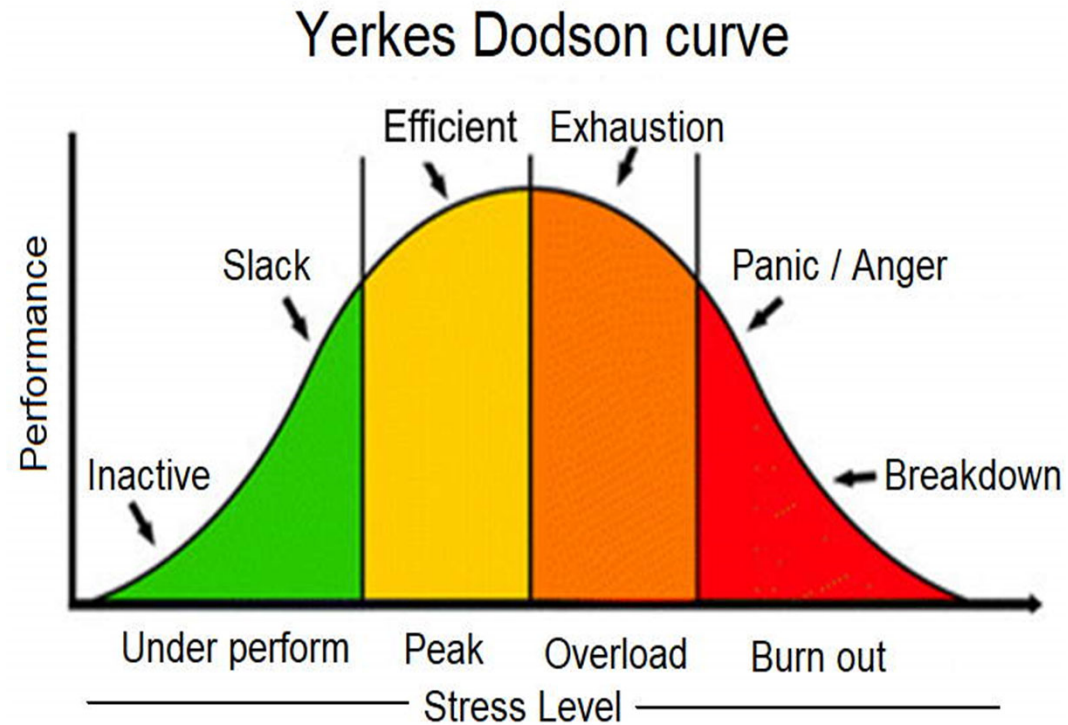
Knowledge Graphs

- Entity relationships
- Clustering activity
- sub-communities
- Non-op comms
- Vulnerability Points
- Sources of Stress



Modelling Behaviour

- Probabilistic
- Use behaviour frequency
- Value standard deviations
- Include as risk drivers



Sentiment Analysis

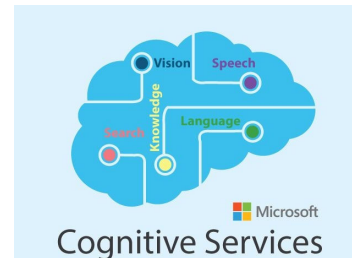
Using Cognitive Services and Text Analytics

Sentiment Analysis

Cognitive Services

- Natural Language Processing (NLP)
 - Text Analytics
 - Subject Classification
 - Translation
 - Sentiment Analysis

Big 4 AI Service Providers



Scenario Demonstration

Technology Components

- Yammer - MSOffice Chat Channels
- Power Automate - automated Workflows
- Azure Cognitive Services - Text Analytics
- Sharepoint Lists - store history
- Outlook - Notifications
- Power BI - Visualisation Dashboard

Microsoft Yammer

An enterprise social networking Chat service used for private communication within organizations.

Yammer - Internal Chat

Set up Channel for:

- CEO
- Executives
- Internal Communities

For

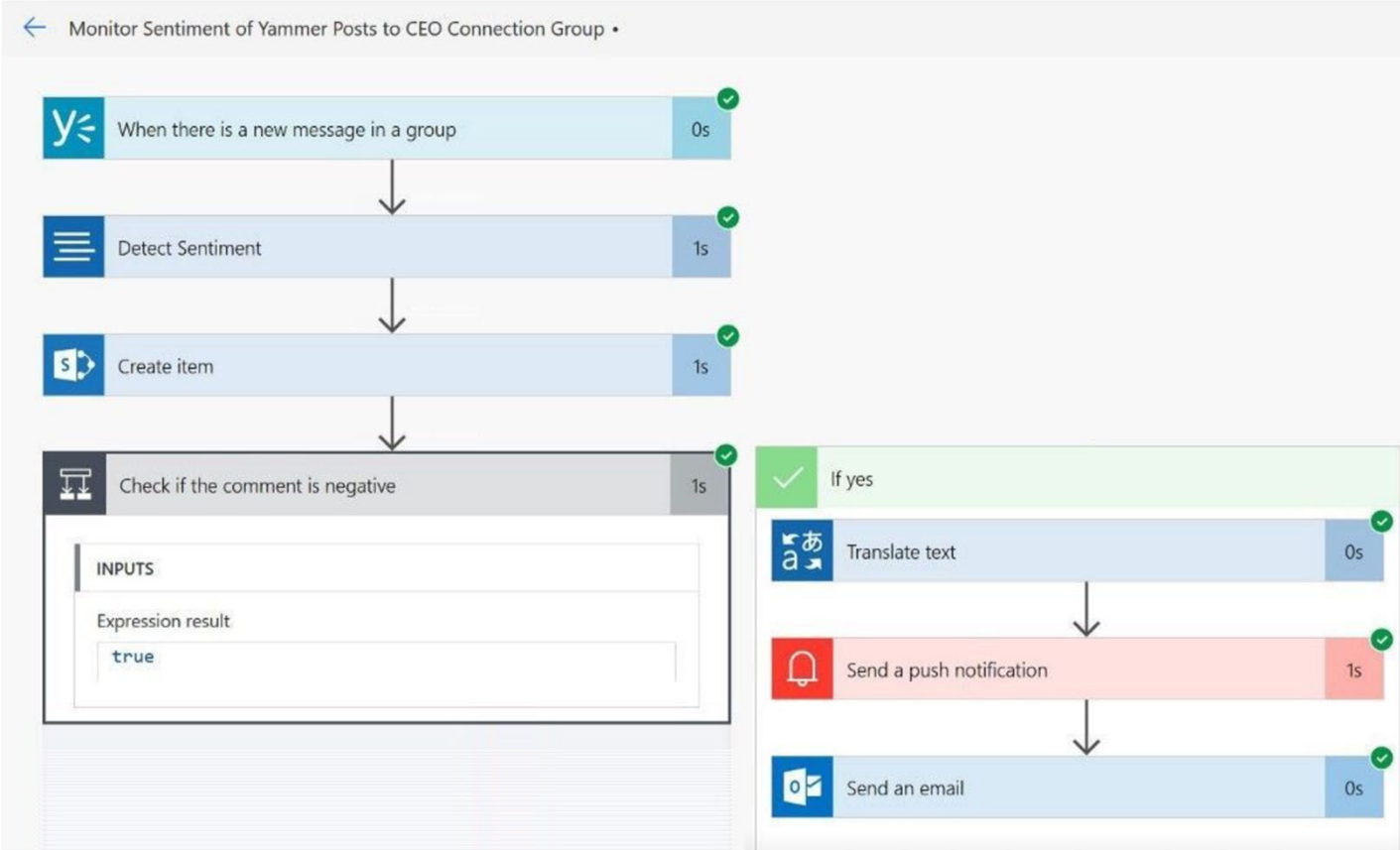
- engage employees
- water-cooler talk
- informal advice
- Ideas



The screenshot shows a Yammer channel interface. At the top, there is a search bar and a dropdown menu for 'CEO Connection'. The channel name 'CEO Connection' is prominently displayed, along with a 'Confidential' status and a 'Joined' button. Below the channel name, there are tabs for 'Conversations', 'About', 'Files', and 'Events'. A post by Chris Bortlik is visible, asking 'What are we doing to fix our poor stock performance?'. The right sidebar contains 'Members 44', 'Info' (with an 'Edit' link), and 'How to ask a question:' instructions. A 'Pinned' section lists 'Employee Event' and 'Our Intranet'. At the bottom right, there is a 'Create Live Event' button.

Monitoring Workflow

Power Automate - eWorkflow



Demo Setup

Technology Components

- Microsoft 365 E5
 - Yammer, Office 365, SharePoint, Power Automate
 - 90 Developer account: <https://developer.microsoft.com/en-us/microsoft-365/dev-program>
- Azure Cognitive Services
 - Azure Free account: <https://azure.microsoft.com/en-au/free/free-account-faq/>
- Power BI Pro
 - Try Power BI for free: <https://powerbi.microsoft.com/en-us/getting-started-with-power-bi/>
 - Pro required to embed in SharePoint, Teams or collaborate (interactive)

Resources

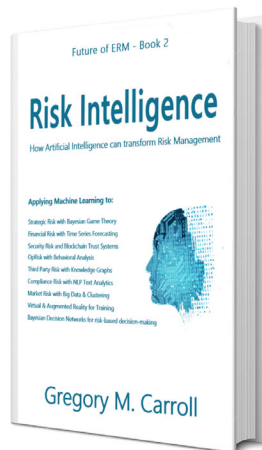
Tutorial Instructions

- [Identify sentiment of comments in a Yammer group by using Azure Cognitive Services and Flow](#)
- [Embed a report web part in SharePoint Online - Power BI](#)
- [Get Power BI Desktop - Power BI](#)
- [Business continuity dashboard - Workplace Intelligence](#)
- [Hands on with AI - Text Analytics](#)

Book Offer

Risk Intelligence

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Available at [Amazon.com](https://amazon.com) \$34.99 RRP

3 Free Copies will be drawn from attendees

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