Digital Thread for Risk Management in Supply Chain

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2023

Lakshmi Dinesh
Product Manager,
Data Analytics for Supply Chain
Boeing India

Lakshmi Dinesh

Product Management Specialist, Boeing India
11 years in product management roles

BOEING

Boeing India
Product Manager – Analytics for Supply Chain and Enterprise Performance
Aug 2018 – Today

ORACLE

Aconex (part of Oracle Construction Global Business)
Product Owner - Commercial role
Software for global mega projects in construction
2012 - 2018

PeopleFluent

Peoplefluent, Boston, MA
Business Analyst
Software for talent management
2006 – 2012

Ogilvy

Ogilvy & Mather
Creative, Communications

Communicative English, Psychology   Leadership, workforce mgmt   PG – Product Management

SHRM BETTER WORKPLACES BETTER WORLD™

Northwestern Kellogg School of Management

The Problem Space for Risk Management in Supply Chain

Supply Chain risks is a product of exposure to shocks plus vulnerabilities within Boeing and the broader value chain. We need insights to enable teams to perform network analysis that can illuminate vulnerabilities, allow predictive and proactive actions to be taken to maintain airplane program production stability."-

Senior Manager, Supply Chain, Boeing

My team is focused on finding risks within our supply chain that can cause wide-spread disruption to the Boeing supply chain. We need a repository for part level supply chain mapping that will enable a macro view of risks."

Subtier team, Supply Chain, Boeing

I need agility in planning. There are risks which didn't exist before.

Sr. Director, Transportation, Warehouse & Logistics, Boeing

Strategy Formulation to Address the Problem

Business Problem

Supply chain risk visibility is low beyond Tier 1 suppliers

Sub-tier supplier data is lacking, leading to gaps in disruption analysis

Disruptions occur as a surprise

Teams are inadequately prepared to handle delays/disruptions

Solution

Suppliers, Parts, Programs, and Risks as foundation for data association

Sub-tier network and parts flow visualization for easy reference

4 Risk categories –forms a comprehensive risk view

Supplier risk scoring based on category ratings.

Benefits

Protect: Protect supply-chain flows from adverse events

Rethink: Examine disruptions, evaluate future supply-chain needs. Operational resiliency as top priority

Redesign: Design supply chain for future operating models
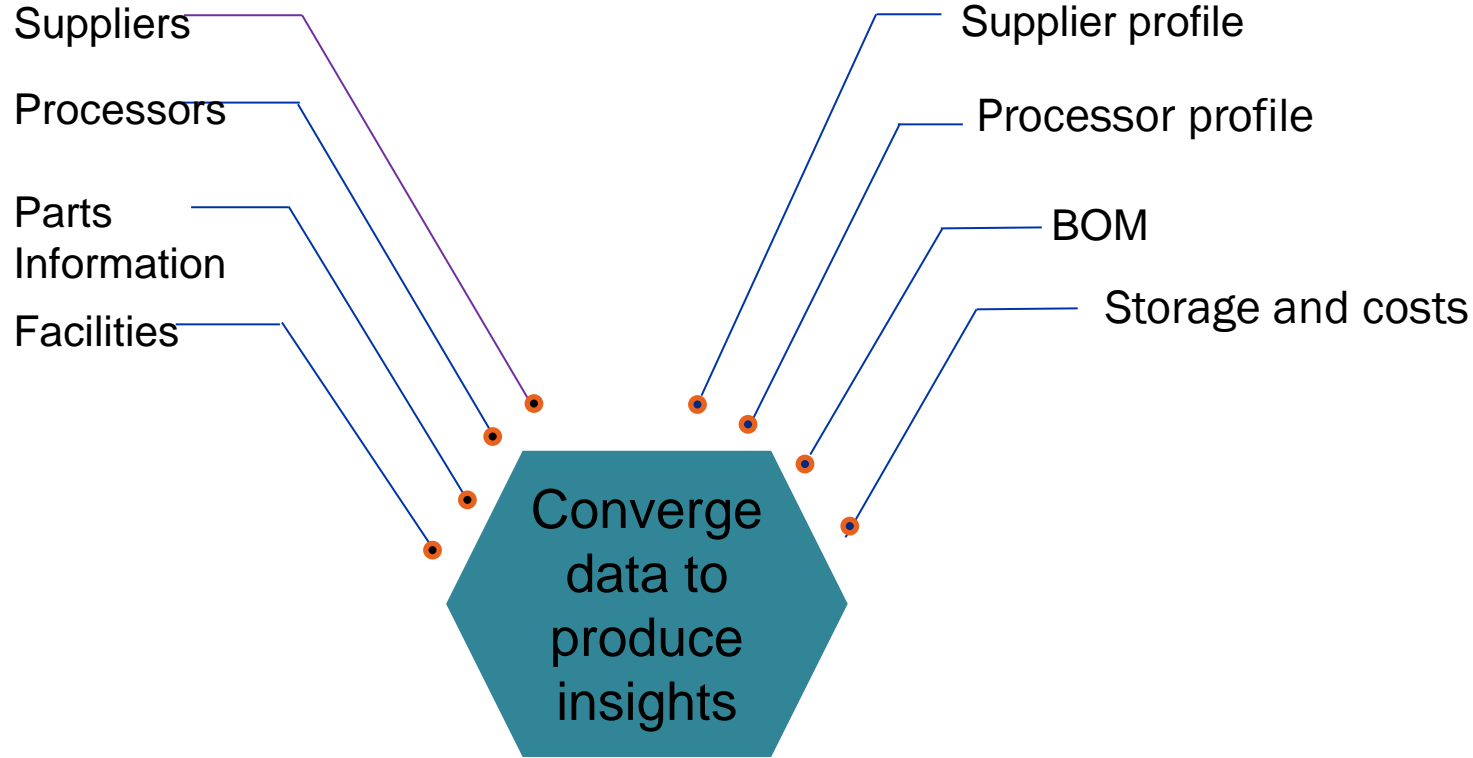
Optimize time-to-market by avoiding delays and disruptions

Digital transformation to protect, re-think, re-design and optimize the supply chain
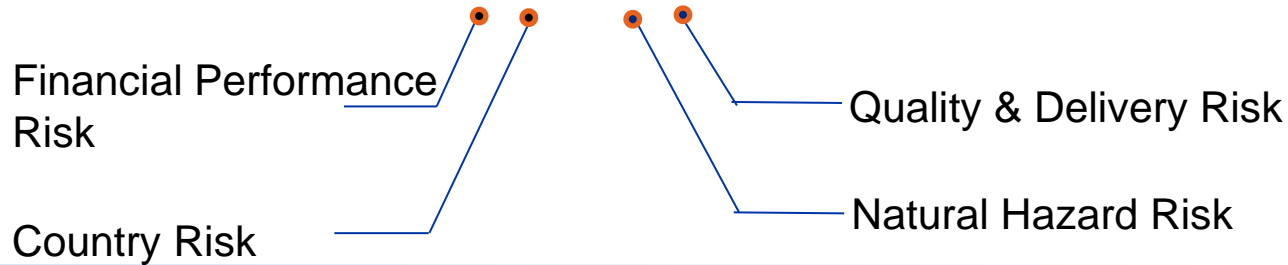
Data Interoperability – Internal and External Data Converge

Internal

- Suppliers
- Processors
- Parts Information
- Facilities

External

- Financial Performance Risk
- Country Risk

Converge data to produce insights

- Supplier profile
- Processor profile
- BOM
- Storage and costs
- Quality & Delivery Risk
- Natural Hazard Risk

Digital Thread

Internal and external data sources combine to form previously unavailable insights about risks in the system.

Comprehensive understanding of the business problem and opportunities, leading to more informed decision-making and, ultimately, better outcomes.

Risk data collection - internal and external sources

Continuous calibration of risk scoring mechanisms

Appropriately weighted risk to enable efficient mitigation

Digitized risk scoring with continuous calibration and weighted risk logic

Part and Supplier Mapping
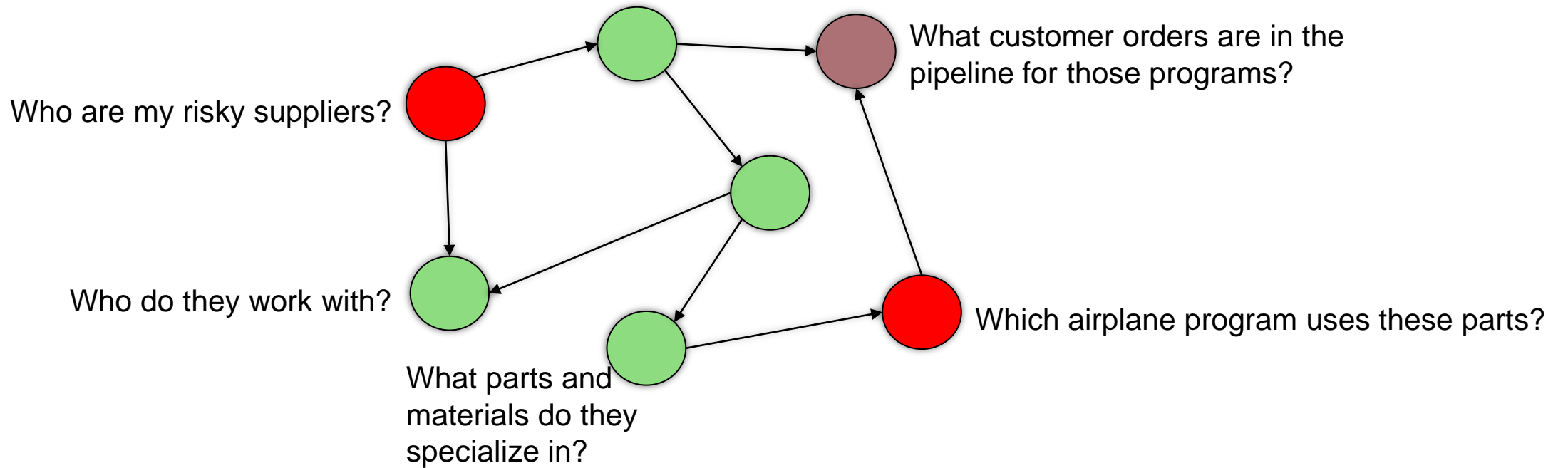
Bill of Material (BOM)

Sub-tier data
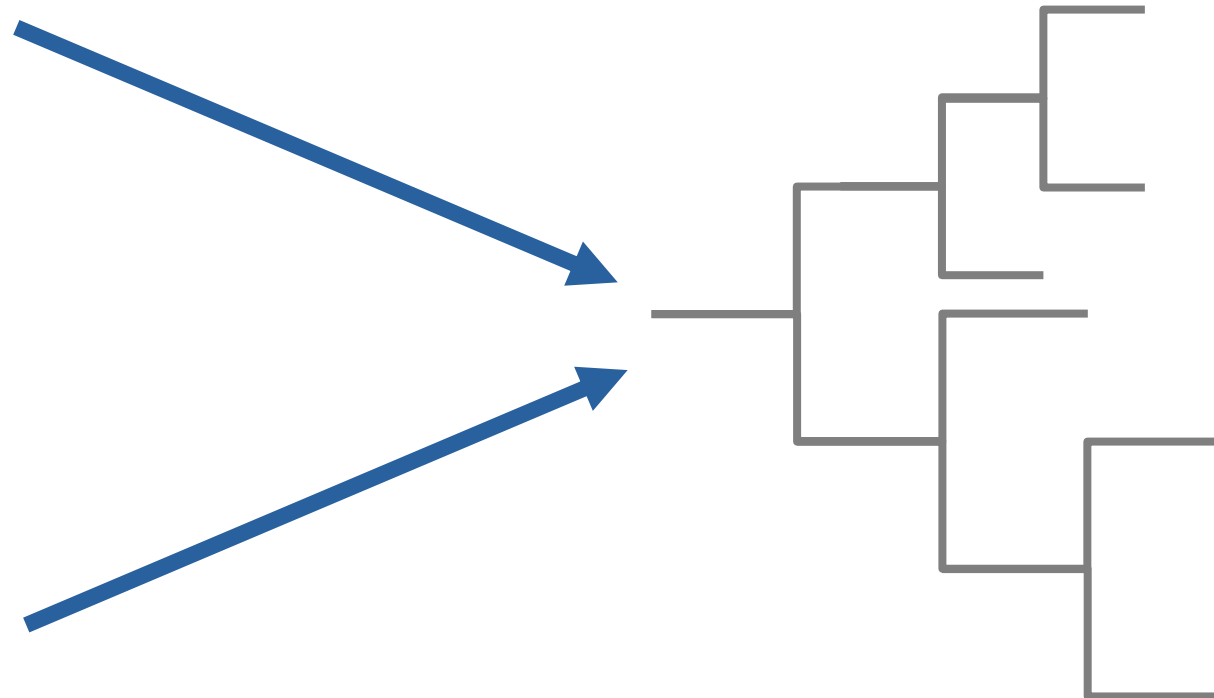
Part and sub component visualization Tier 1 and sub-tier supplier network visualization

BOM and Sub-tier data combine to produce comprehensive part and network views

From risky supplier to potential customer impact

Who are my risky suppliers?

What customer orders are in the pipeline for those programs?

Who do they work with?

What parts and materials do they specialize in?

Which airplane program uses these parts?

Supplier ecosystem visualization for mitigation analysis

Data in siloed systems

Absence of common governance mechanisms

Independent storage & maintenance

Risk data from external vendors

Company data from internal sources
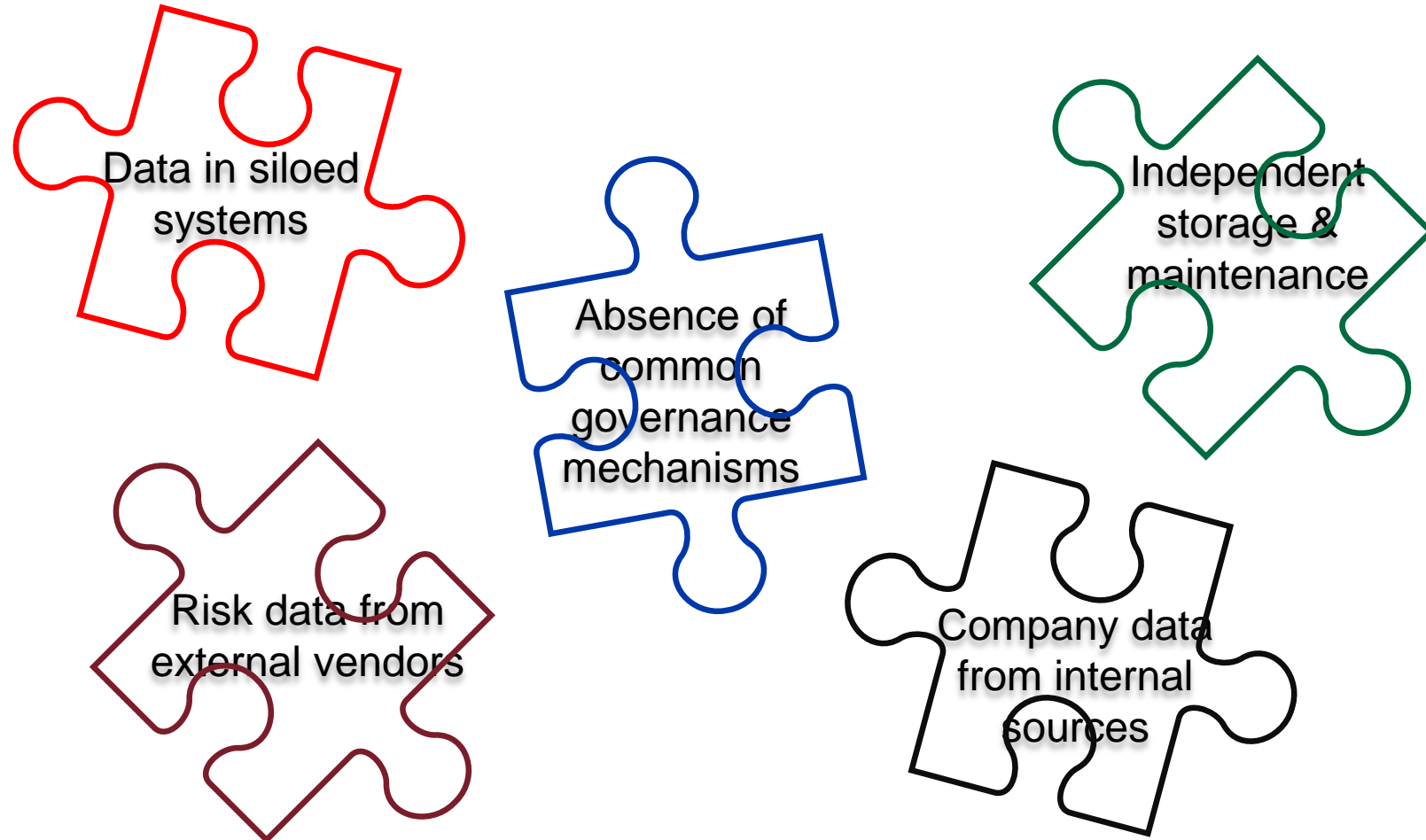
Silos in data management, absence of alignment and common governance

Making It Work

Collaboration and trust between players

Agreement on data sharing and usage

Common, understanding of data and its purpose

Golden records

Data security definitions
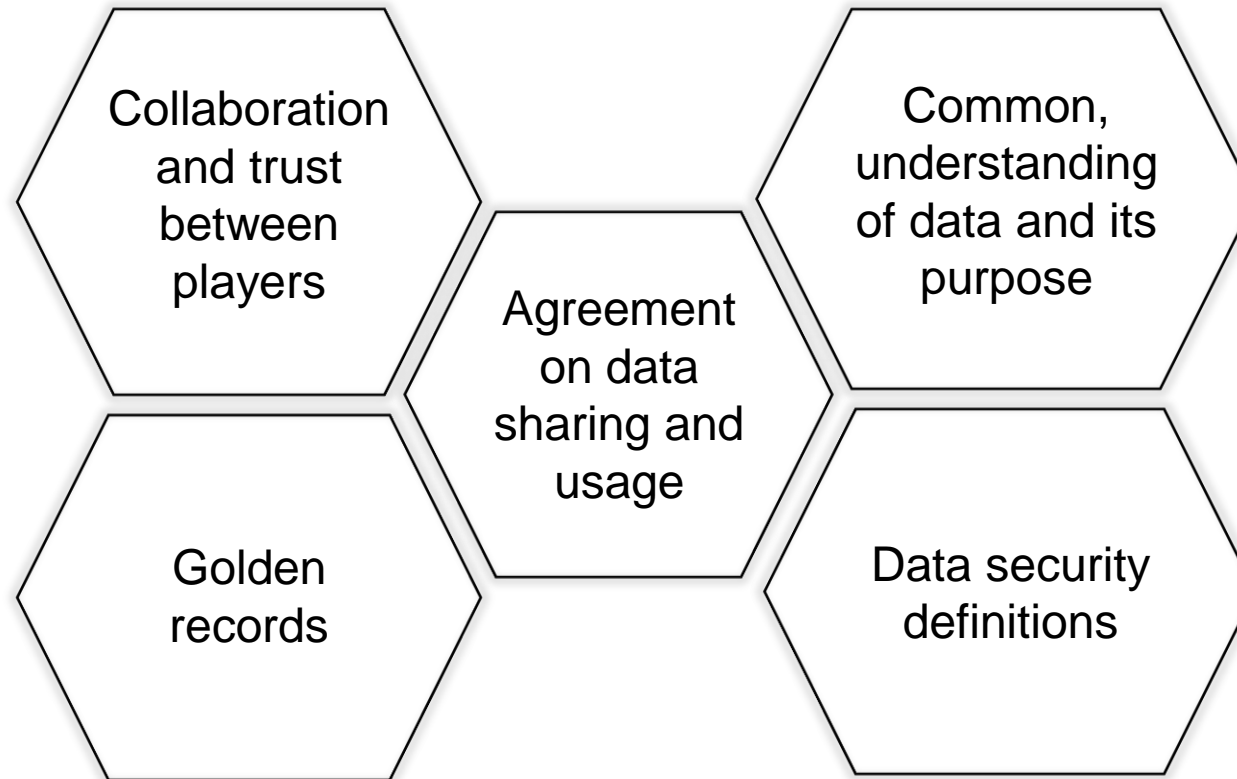
Alignment involves both human and technical efforts to produce a singular view

Evolution - from Data to Insights

Evolve

Learn

Research

Discover untapped potential in network

Identify unseen relationships in supply chain network

Causal analysis for supply chain incidents

Analytics modeling approaches for supply chain

Knowledge graphs – plot entities and relationships

Thank you!