

Enhancing Supply Chain Resilience Through Integrated Business Planning

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Enhancing Supply Chain Resilience

Through

Integrated Business Planning

Agenda

- Mars at a glance
- Resilience Vs Agility
- Digital case study: Agility
- Digital case study: Resilience
- Process: IBP & S&OE
- Mindsets & Behaviours

Family-owned. Future-facing. Purpose-driven.

As a global company with the footprint of a small country, we have the responsibility - and the opportunity - to leave a lasting impact on the world.

As a family-owned business, we have the ability to think in generations, rather than just business quarters, and our Purpose guides us on our way.

What we do is only as good as how we do it. We challenge our Associates, partners and suppliers to join us in transforming the way we do business every day.



The world we want tomorrow starts with how we do business today

MARS



150,000 Associates

are united and guided by Five Principles of Mars, which span geographies, languages, cultures and generations



1911

Frank C. Mars made the first Mars candies in his Tacoma, Wash., kitchen

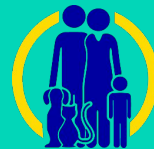


Operating in 70+ markets worldwide



Global HQ in McLean, VA

glassdoor
BEST PLACES TO WORK



Private, family-owned company



\$55B
APPROX NET SALES



165+ Markets

Mars brands are enjoyed in 165+ markets worldwide



600+ SITES

3,000 VETERINARY HOSPITALS

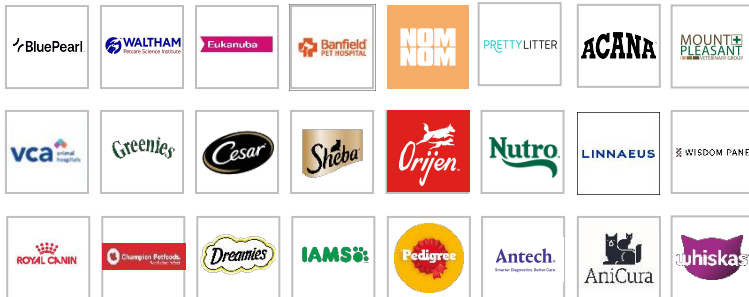


Billion Dollar Brands



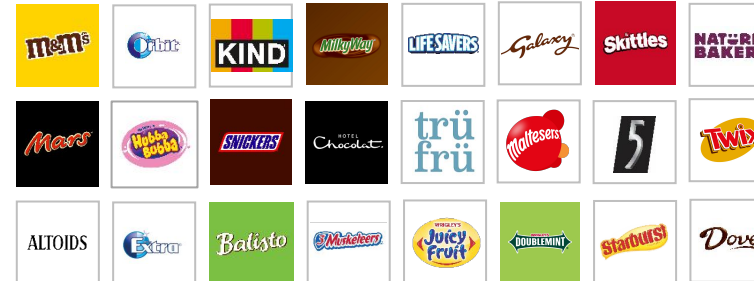
MARS
Petcare

A Better World For Pets



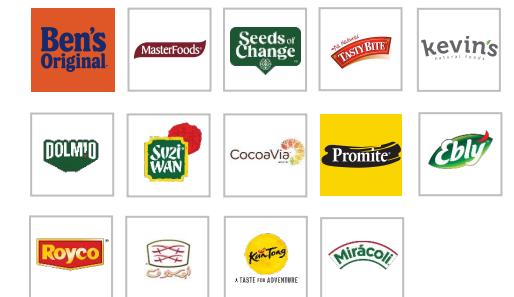
MARS
Snacking

Inspire moments of everyday happiness



MARS
Food & Nutrition

Let's make food today. Make a better world tomorrow.



Who has experienced a shortage, out of stock or significant delay on something in the last few years?

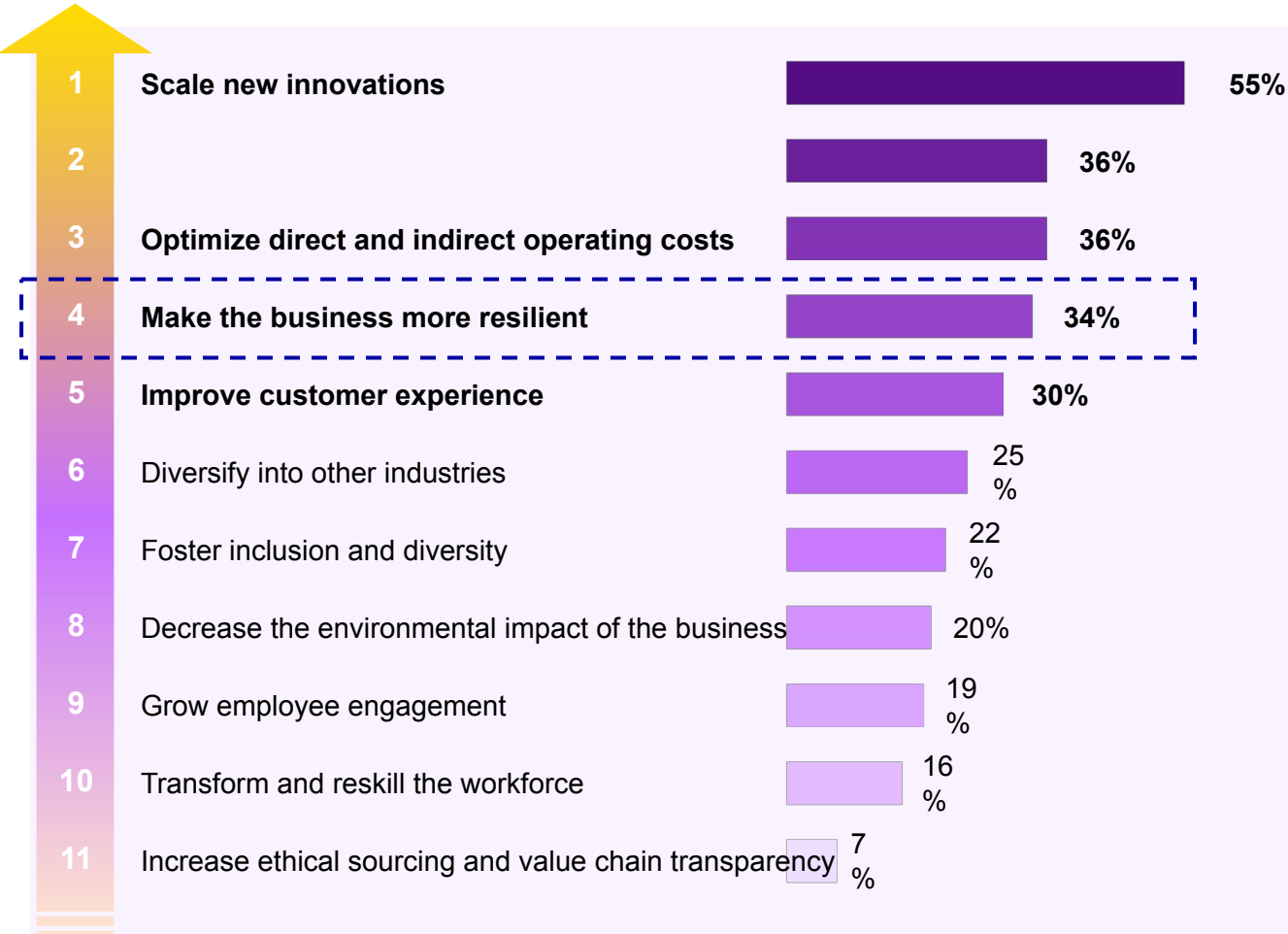


Supply Chain pressure from disruptions continues to rise

30% rise in the number of supply chain disruptions in first half 2024¹

Resilience ranks in the Top 5 2025-30 priorities for businesses²

Natural Disasters 	Armed Conflict 
Pandemics 	Geopolitical Tensions 
Trade Tensions 	Economic Crisis 



Source: 1. Resilinc EventWatchAI platform [July'24] Life Sciences, Healthcare, **General Manufacturing**, High-Tech, and Automotive sectors most affected; 2. Accenture Supply Chain & Operations capabilities global survey, 2023. Base: All Respondents (n=1148). . Copyright © 2024 Mars, Incorporated — Confidential

Disruptions impact across the E2E supply chain



Raws volatility

Excessive spend in spot buy

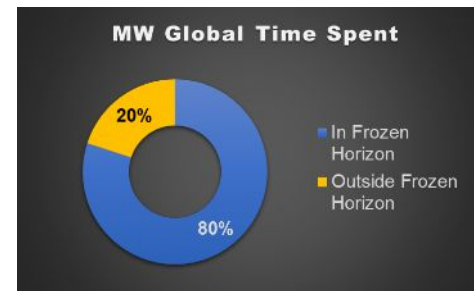


- ☐ Cost savings at risk
- ☐ Very volatile environment



Delivery dates continuously rescheduled

Massive churn; reactive state

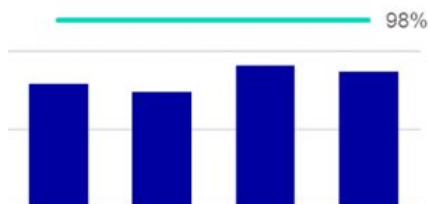


- ☐ Postponed supply security projects
- ☐ Persisting raws & packs issues



Loss of sales

Poor customer service



- ☐ Customer service well below target
- ☐ Declines of >5% in some markets and channels



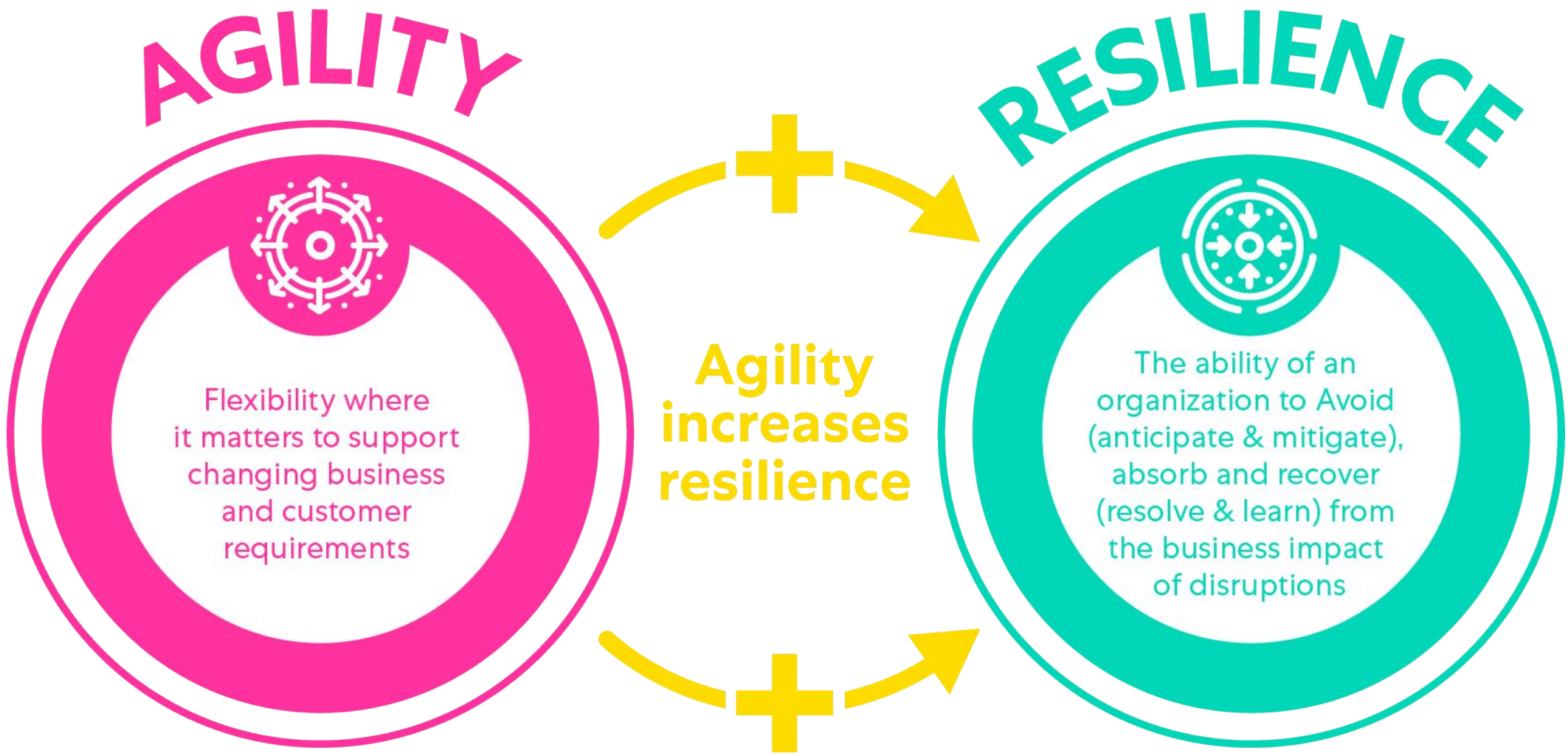
Significant increase in stress

Associates jumping from crisis to crisis



- ☐ Fatigued associates
- ☐ Retention risks

Supply Chains need both Agility and Resilience to thrive



MARS
Snacking



Supply Chain
Data & Analytics

Case Study 1: Building Agility

ARDI:

**Auto-rebalancing Decision
Intelligence**

ARDI

Product Goal

- **Protect service** by avoiding losses caused due to network imbalances and overhaul the “last line of defence” Inventory Rebalancing process
- **Manage stock distribution** for products that are fulfilled through an intermediate Hub DC enabling just-in-time replenishments and ensuring equivalent supply across a diverse network
- **Reduce expiry** and **avoid unnecessary production** by rebalancing stock to achieve better balance in the network



ARDI is an **interactive decision intelligence** product that generates **optimal recommendations for rebalancing**, **builds efficient trucks** to enact the recommendations and **writes back the outcomes** to execute decisions

The Azure model - The brain of the product

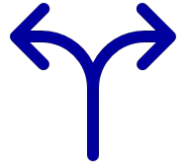
The Aera platform - The face of the tool



Heuristic model

Guides the optimization model with planner context

- ✓ Identifies excesses and requirements across the network
- ✓ Breaks down the paradigm into Planned or Unplanned rebalancing
- ✓ Analyzes special stock needs if there is Dependent Demand or expiry risk



Optimizer

Recommends the most cost effective and optimal decisions

- ✓ Maximizes handling efficiency by moving full pallets or layers
- ✓ Fair shares product across during deficits in Planned rebalancing



Cognitive Workbench I

Provides an UI to interact with the model recommendations

- ✓ Enables users to accept, modify or reject recommendations as well as raise their manual moves
- ✓ Allows for a deep dive into recommendations if required



Truck optimizer and CWB II

Builds efficient trucks based on the enacted decisions

- ✓ Builds truckload configurations with maximum possible efficiency in terms of weight, FP or pallets
- ✓ Enables constraints on item mixes during shipping



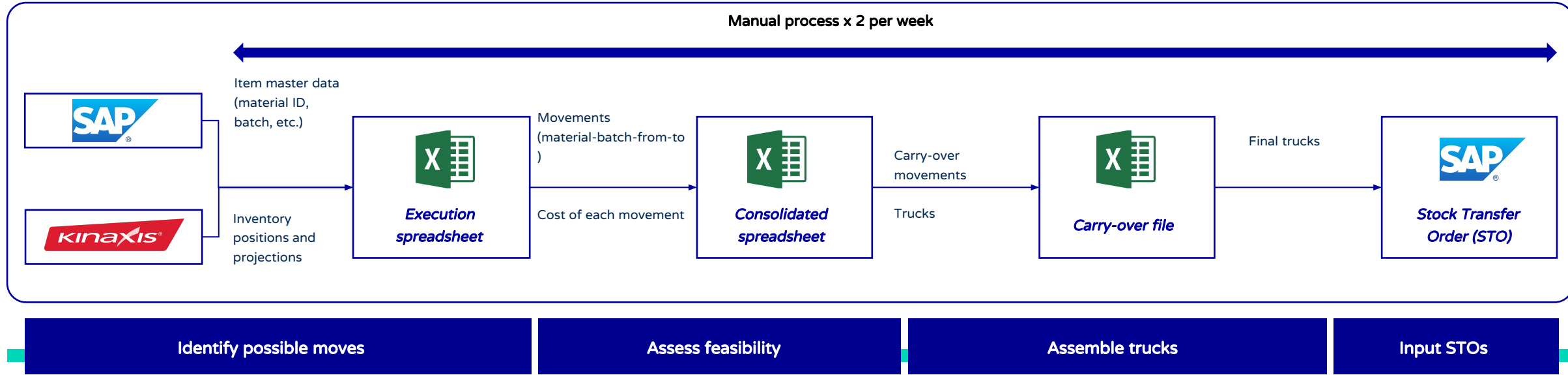
Writeback module

Automatically writes back the decisions to SAP directly for execution

- ✓ Generates STOs directly in the SAP system reducing all manual intervention for process efficiency
- ✓ Also writes back data into the data lake for Decision value tracking

From people trying to find an answer, to people taking decisions

HISTORIC



NEW



CWB1
User actions recommendations to confirm proposed movements



CWB2
User actions recommendations to confirm truck movements



CWB1 Stock Rebalancing

Transfer Qty 254 of material 10007158 to 10007159. Estimated cost 53 USD.

Material	Material description	Quantity	Source	Destination	Requested Actual Date (YYYY)	Reason	Item Priority	Lead Time	Deletion	Must move
10007158	EXTRA 100% POLYMER ICE 10/10/CT 0.32 INCH	254	US04	US04	07-Dec-2022	Not Set	5	7	Yes	No
10007159	EXTRA 100% POLYMER ICE 10/10/CT 0.44	254	US07	US04	09-Dec-2022	Not Set	5	9	No	No
10007158	EXTRA 100% POLYMER ICE 10/10/CT 0.32 INCH	2073	US04	US04	08-Dec-2022	Not Set	5	4	No	No

CWB2 Truck Builder

Truck number 11 at 100% utilization (2085.000)

Material	Material description	Material Status	Quantity	Lot	Weight	Actual Package	Expected	Volume	Reason	National Inventory Status	Carry
10005004	SN SLIP MTR 9/10Z R23	Abandoning	144	US04-0504	628.34-08	1	1	2.2894	Not Set	Not Set	Not Set
10000719	MARSHALL SUP 10/10/CT 1.442-0.50	Abandoning	242	US04-0504	2003.670009	1.340004	3	34.0340	Not Set	Not Set	Not Set
10004006	DYAC 2000 1.00-1007 200-1007	Abandoning	1527	US04-0504	0001.112029	4.287003	5	0.223300	Not Set	Not Set	Not Set
10000000	01-0000-0001-0001	Abandoning	42	US04-0504	000.340000	0.40375	1	1.000000	Not Set	Not Set	Not Set

ARDI – Value Creation

Outcomes

ARDI recommendation
adoption rate YTD

75%

Stock rebalanced with
ARDI

>\$1B

NQC Reduction

\$12M

Logistics Cost Savings

\$4M

CO₂ emissions Reduction

33%

MARS
Snacking



Supply Chain
Data & Analytics

Case Study 2: Building Resilience

Material Supply Security- MARI

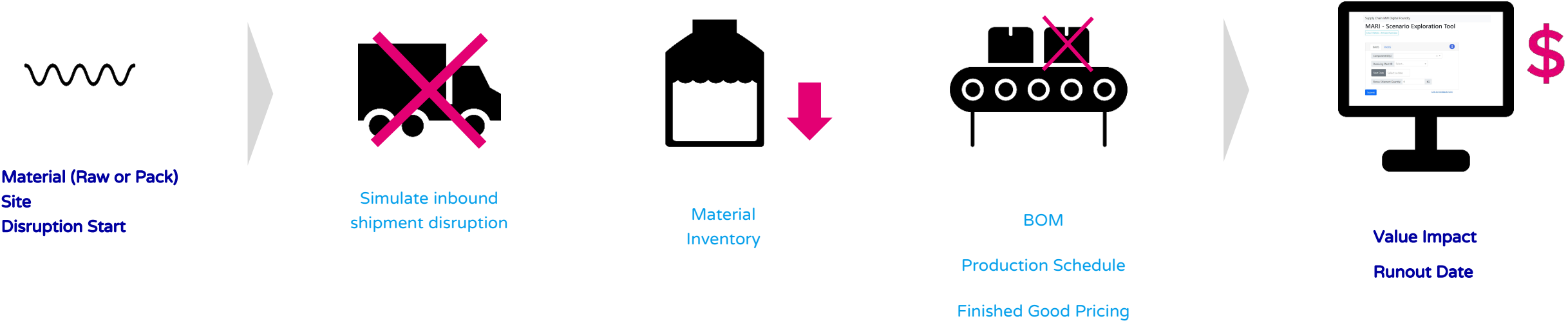
Material Supply Security Platform

Mission

Anticipate and prevent future factory losses due to material availability, while reducing mitigation spend.



MSS is an **interactive app** that provides direct visibility on **sales impact** & **runout risk** for all raw & pack materials



MSS – Value Tracking

- **Resilience enablement:** MSS allowed commercial associates to proactively prevent **multi-million \$** per week in losses from upcoming supply security risks (2024)
- **Empowering associates:** Users across Commercial, Supply and R&D used MSS 2,400 times to gain insights on their materials (FY 2024)
- **Cost reduction:** MSS helped drive significant decline (>50%) in Spot Buys

2 Signature Processes are key to building and sustaining resilience ...



MARS

S&OE

Sales & Operations Execution

AGILITY

IBP

Integrated Business Planning

RESILIENCE

Market



Enterprise

E2E Supply chain & sales



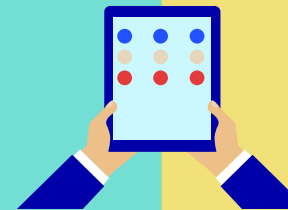
Leadership

0-12 weeks



Rolling 18 months

Service, NQCs, Inventory

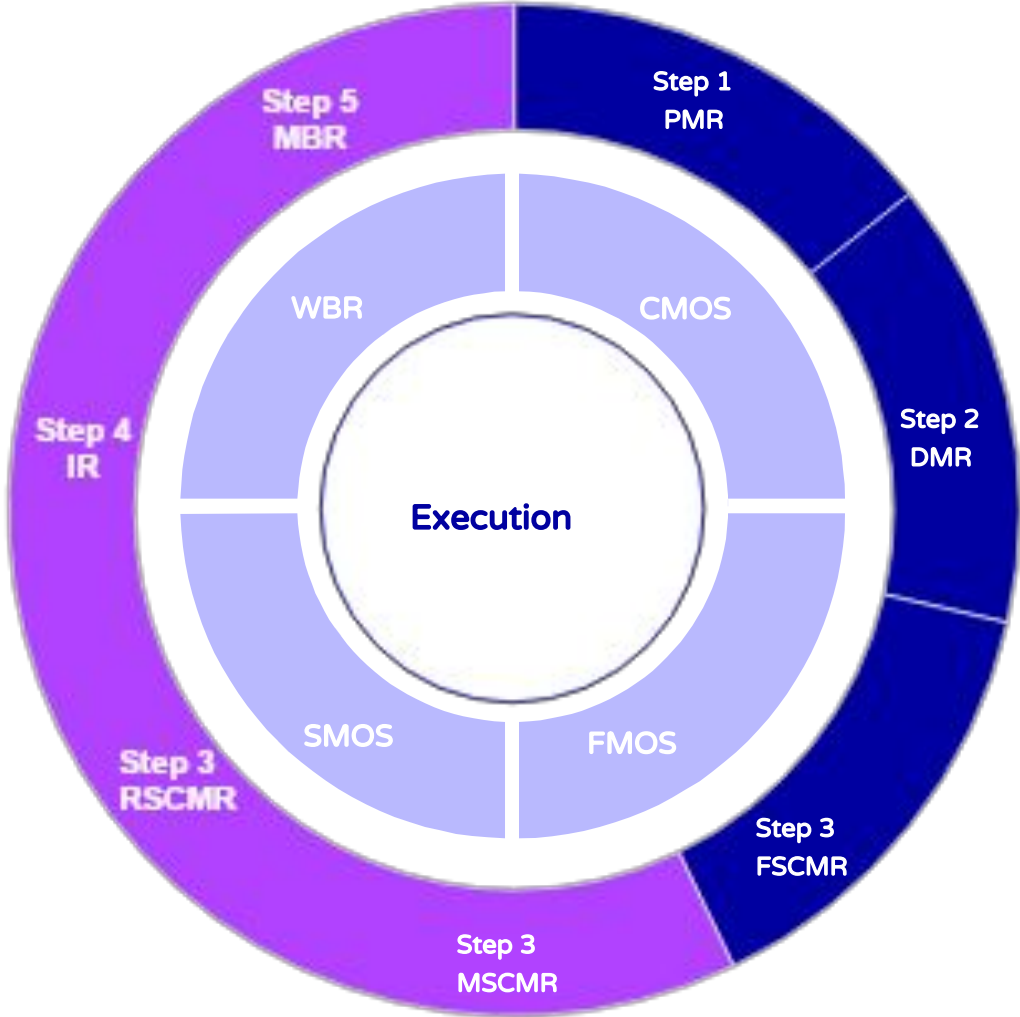


Growth, Profit, EBITDA

IBP and S&OE Connectivity Builds Resilience

IBP

- Step 1 PMR**
Finalize portfolio master plan
- Step 2 DMR**
Finalize unconstrained demand plan
- Step 3 SCMR**
Approve supply plan and trade-offs to manage demand
- Step 4 IR**
Agree trade-offs and recommendations to close gaps (business plan)
- Step 4 MBR**
Finalize business plan



S&OE

- FMOS**
Execute plan and resolve production risks and challenges
- CMOS**
Mitigate and eliminate projected service risks and manage trade-offs
- SMOS**
Manage demand & inventory at risk
- Weekly Business Review**
Execute business plan, manage risks and opportunities

Combining process and digital

IBP

Step 1 PMR

Finalize portfolio master plan

Step 2 DMR

Finalize unconstrained demand plan

Step 3 SCMR

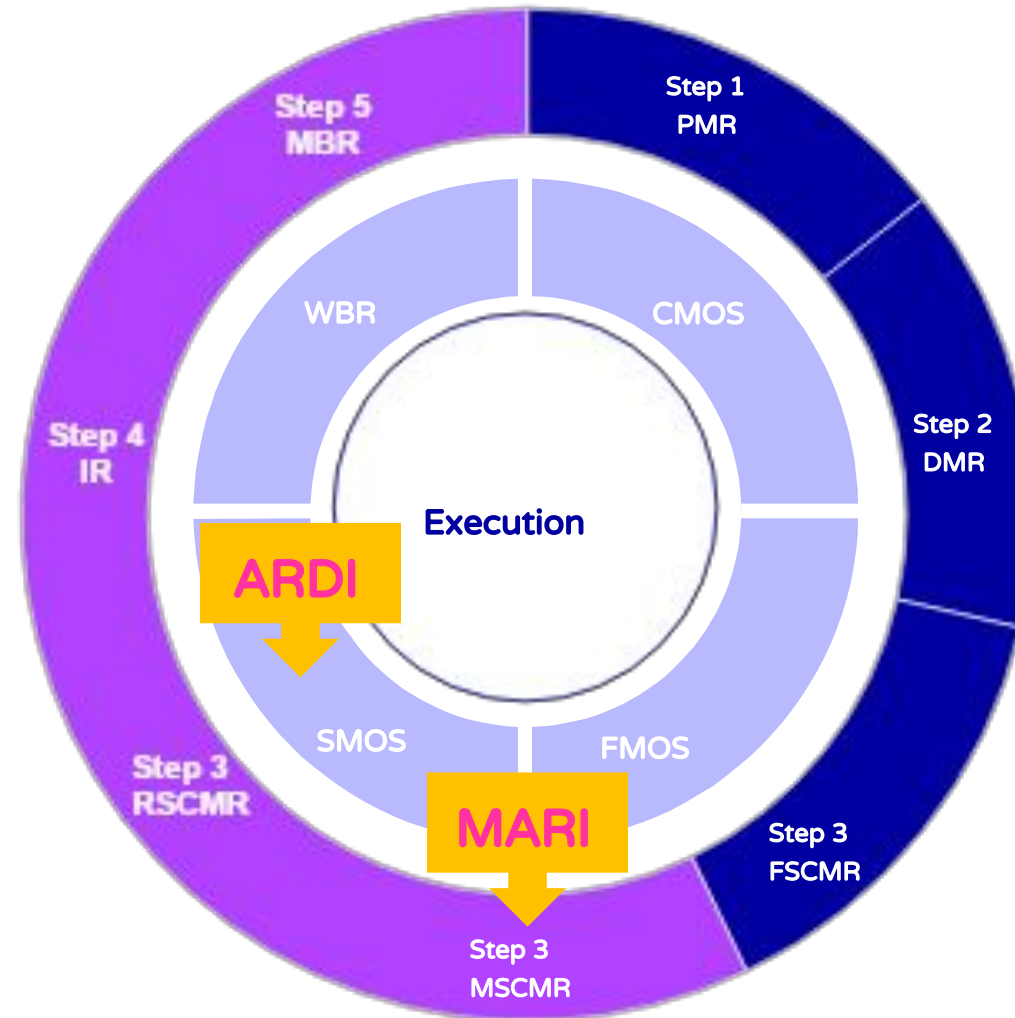
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Step 4 MBR

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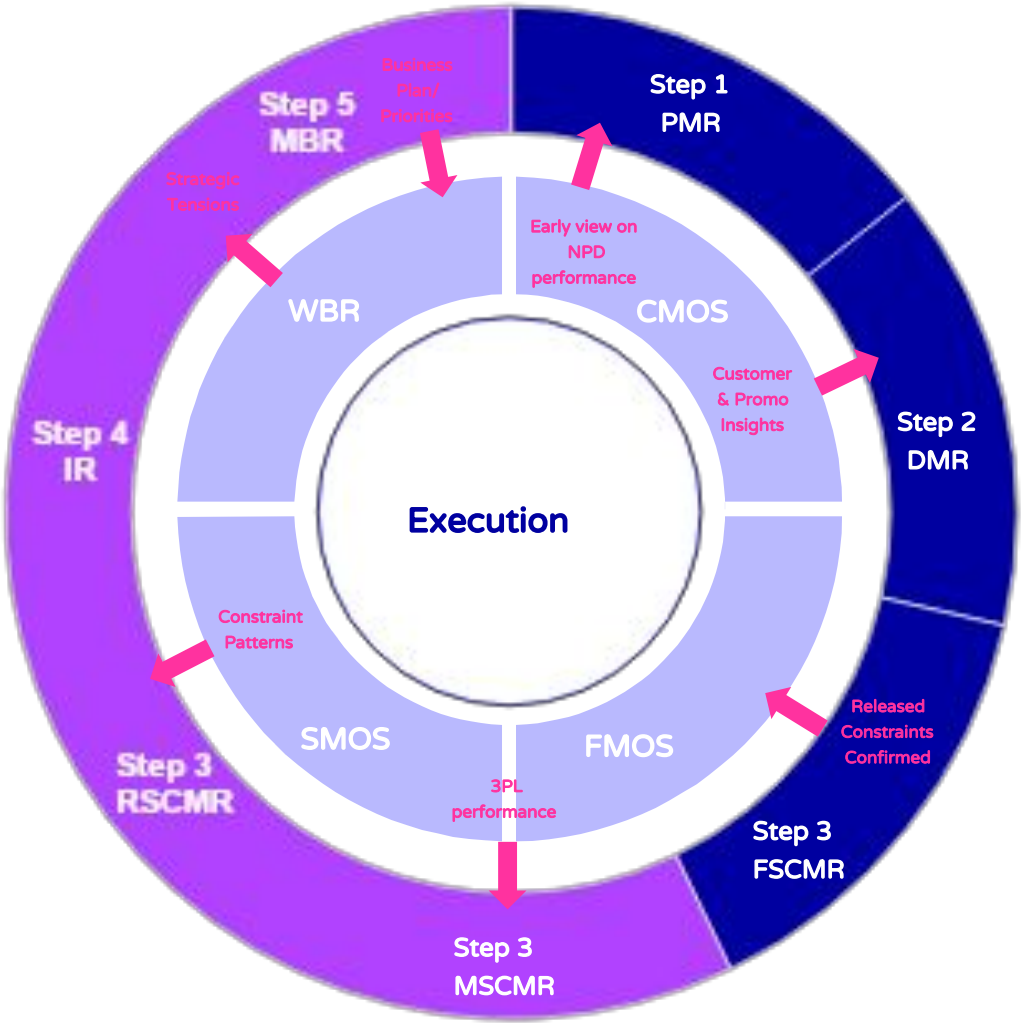
Weekly Business Review

Execute business plan, manage risks and opportunities

Leveraging Powerful Insights ...

IBP

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Underpinned By 3 Key Mindsets



Anchor around KPIs that optimize service, cost, and cash.

Track and monitor process health.



**Eliminate manual work.
Unlock speed to insights and action.**



**Empower decision-makers from across the enterprise
Share learnings & outputs across people & functions**

Enhancing Supply Chain Resilience

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- **Digital case study: Agility**
- **Digital case study: Resilience**
- **Process: IBP / S&OE**
- **Mindsets & Behaviours**