Solution Strategy: Supply Chain
Adopting Next Practice on a Modern Cloud Platform

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Safe Harbor

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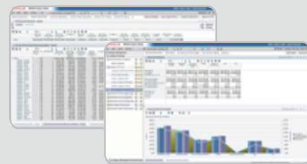
Solution Strategy: Supply Chain - Agenda

- A Look At Where We Have Been

- What's Our Strategy?

- What's Next?

- Questions?

Built On A Heritage Of Innovation
Supply Chain

Merchandise Financial Planning
Assortment & Item Planning
RDF Next Gen
Retail Science Platform
Optimization Cloud Services
Journey / Fulfilment Planning
Retail Home
RPAS Cloud Edition
Test Automation Toolkit
Performance Toolkit

Demand Forecasting
Allocation & Replenishment
Advanced Inventory Planning
Flexibility
Scalability

Digital Channels
Returns Forecasting
Expanded Distribution
Complex Demand
Slow-moving Items
Visual Planning

Optimized

Vertical Focused

- 2009	2010 - 2012	2013 - 2014	2015 - 2016	2017 - Today

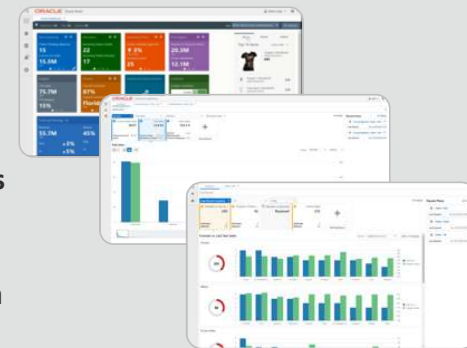**Demand-Driven**

Omnichannel

Next Generation

Replenishment Optimization
Size Profile Optimization
Pre-pack Optimization
Fusion UI
Enhanced Integration

Intra-day Replenishment
Catch-weight & Spoilage
New Item Forecasting
Retail Science Cloud Services
Planning Cloud Services
Extensible SaaS
**Retail Learning Subscription**

Built On A Heritage Of Innovation
Supply Chain

| Demand-Driven	Optimized	Multi-Channel	Vertical Focused	Next Generation
- 2009	2010 - 2012	2013 - 2014	2015 - 2016	2017 – Today
• Demand Forecasting • Allocation & Replenishment • Advanced Inventory Planning • Flexibility • Scalability	• Replenishment Optimization • Size Profile Optimization • Pre-pack Optimization • Fusion UI • Enhanced Integration	• Digital Channels • Returns Forecasting • Expanded Distribution • Complex Demand • Slow-moving Items • Visual Planning	• Intra-day Replenishment • Catch-weight & Spoilage • New Item Forecasting • Retail Science Cloud Services • Planning Cloud Services • Extensible SaaS • Retail Learning Subscription	• Merchandise Financial Planning • Assortment & Item Planning • Retail Science Platform • Optimization Cloud Services • Journey / Fulfilment Planning • Retail Home • RPAS Cloud Edition • Test Automation Toolkit • Performance Toolkit

Oracle Retail Supply Chain
Built on the Platform for Modern Retailing
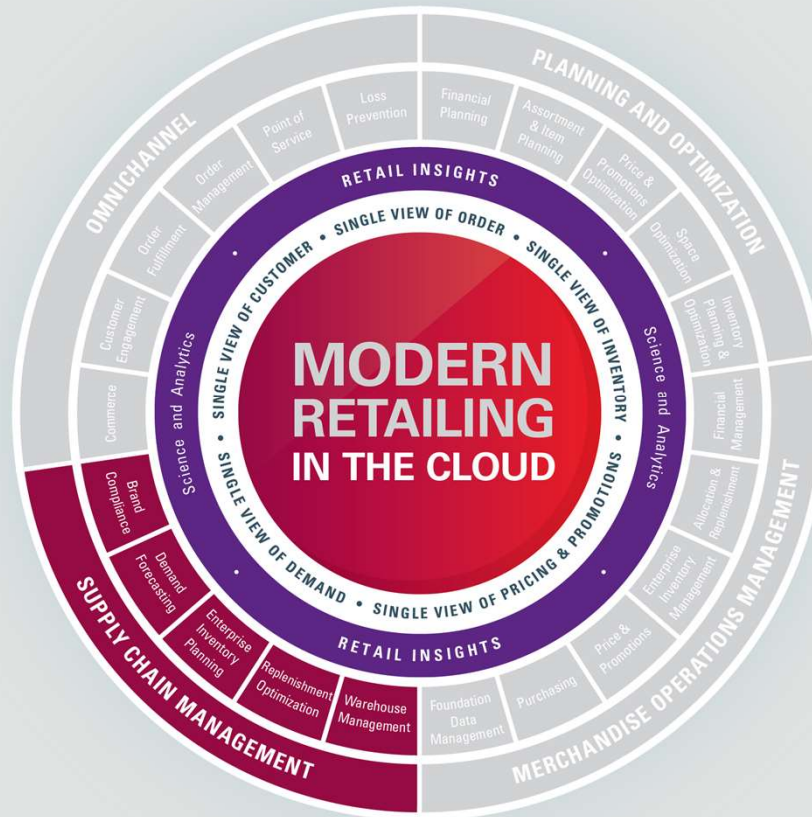
Oracle Retail Supply Chain
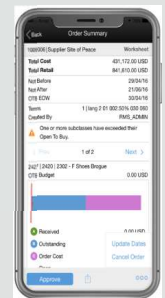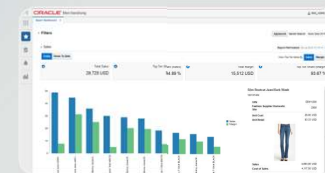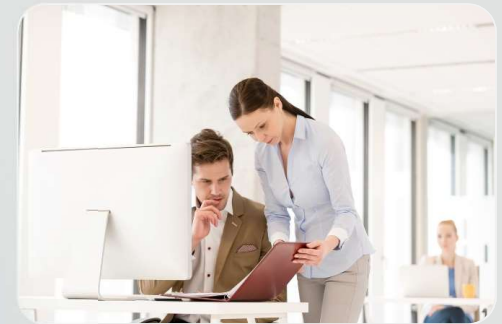
Built on the Platform for Modern Retailing

Solution Strategy: Supply Chain - Agenda

- A Look At Where We Have Been
- What's Our Strategy?
- What's Next?
- Questions?

The Platform For Modern Retail

—

1 **From Best Practice to Next Practice**

Exploit ML/AI To Manage Speed & Scale

2 **Tailor the Experience**

Coordinate, Explain & Predict Outcomes

3 **Operational Agility**

Offering Choice and Flexibility with an End-to-End Modern Cloud Platform

The Platform For Modern Retail

1 **From Best Practice
to Next Practice**

Exploit ML/AI To
Manage Speed & Scale

Maximizing Lifecycle Accuracy
Retail Demand Forecasting

Prepare Reference Data → Estimate Demand Parameters → Prune → Escalate → Forecast

Next Gen Science maximizes the value of your data

Reflect the unique demand drivers of your business
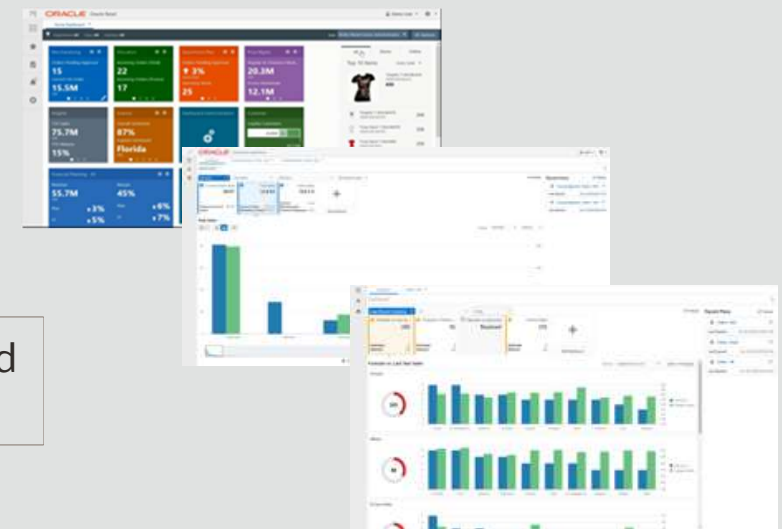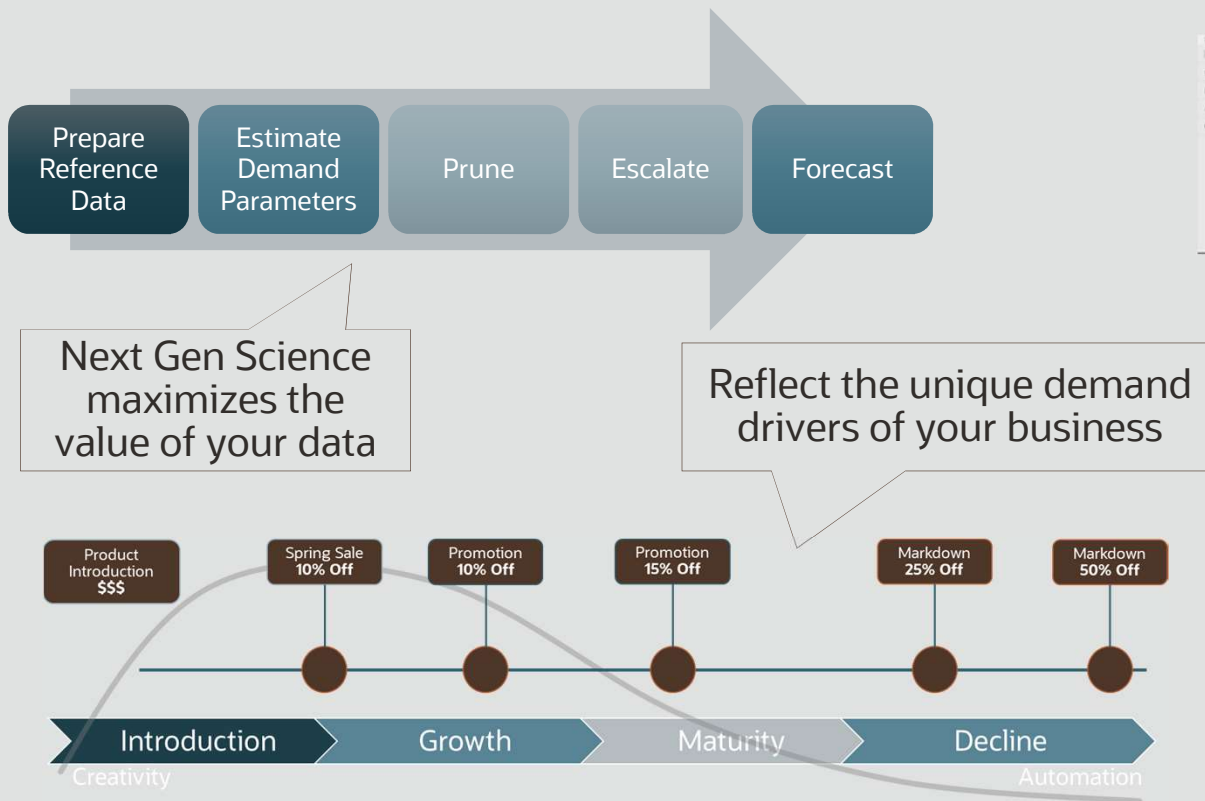
Maximize the productivity of your team

| Product Introduction $$$ | Spring Sale 10% Off | Promotion 10% Off | Promotion 15% Off | Markdown 25% Off | Markdown 50% Off |

Introduction → Growth → Maturity → Decline

Creativity — Automation

Maximizing the Value of Your Data
Increasing Accuracy with Data Science

Retail Demand Forecasting

| Prepare Reference Data | Estimate Demand Parameters | Prune | Escalate | Forecast |

Core Output

Base Rate of Demand

Trend

Seasonality

Pricing Effects

Promotions Effects

Model Enrichment

Demand Transference
Analytical Clusters
Size Profiles
Attribute Importance
New Models

Pack Optimization
Invoice Match Optimization
Inventory Re-balancing
Inventory Optimization
Halo / Cannibalization
Returns Optimization   Replenishment Optimization

| ASO | OO |
| Assortment & Space Optimization | Promotion, Markdown & Offer Optimization |

Science-driven Actionable Insights

| AA | SC | CS | CDT | DT | AE&B | PS | IW |
| Affinity Analysis | Store Clustering | Customer Segmentation | Customer Decision Trees | Demand Transference | Attribute Extraction & Binning | Profile Science | Innovation Workbench |

Retail Data Model

Driving Customer Success
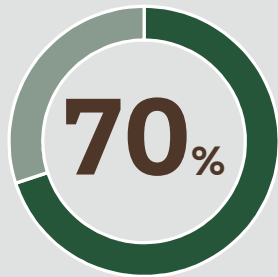*Customer Case Studies*
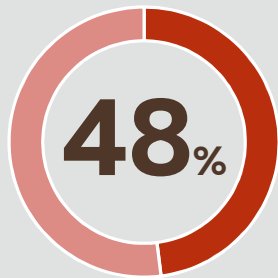
48%
Baseline Forecasting
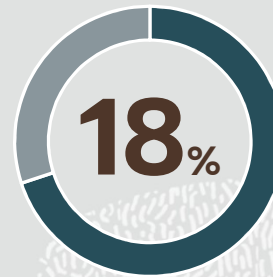Increase in overall forecast accuracy using next generation forecasting science
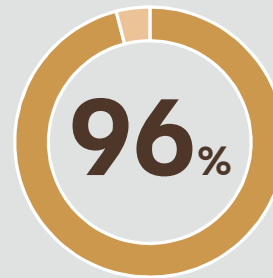
96%
Baseline Forecasting
Forecasts improved using next generation forecasting science

70%
Promotion Forecasting
Promotional forecasts improved using completely automated next generation forecasting science

18%
Demand Transference
Accuracy improvement for department with frequent assortment changes

Driving Customer Success
A Customer Case Study

70% promotional forecasts improved using completely **automated** next generation forecasting science
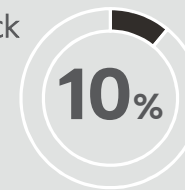
30% reduction in Inventory while achieving same Service Levels

10% decrease in Safety Stock from higher forecast confidence

10% improvement in Service Levels through smarter placement of same Inventory

50% forecasts **adjusted by end-users** using **current** solution

Current Performance

10%

30%

Inventory Level

Service Level
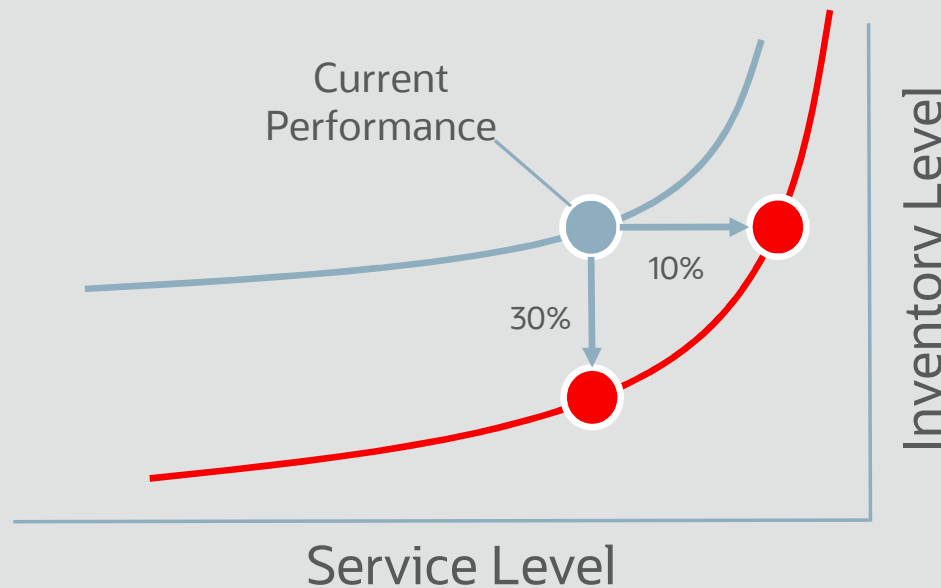
Delivering Tangible Results:

Our next generation forecasting science was evaluated against 2.2M units sold over the holiday season. With the forecast accuracy improvements, the retailer could achieve the same sales with at least 345K units less of inventory.

Connecting Customer Preference

Demand Transference Science

Learn customer preference

Item 1 | Item 2 | Item 3 | Item 4

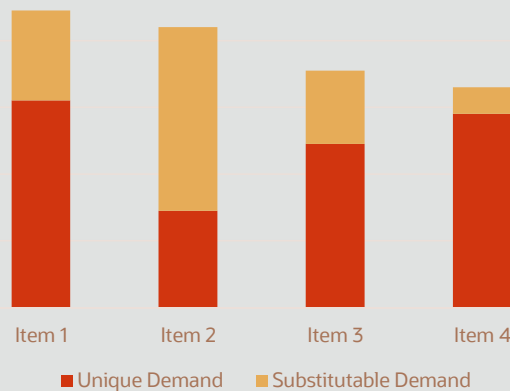■ Unique Demand ■ Substitutable Demand

Adapt to assortment and availability

Item 1 | Item 2 | Item 3 | Item 4

■ Unique Demand ■ Substitutable Demand
■ Transferred Demand
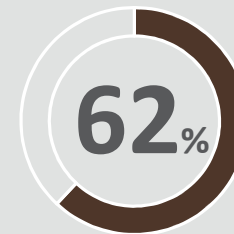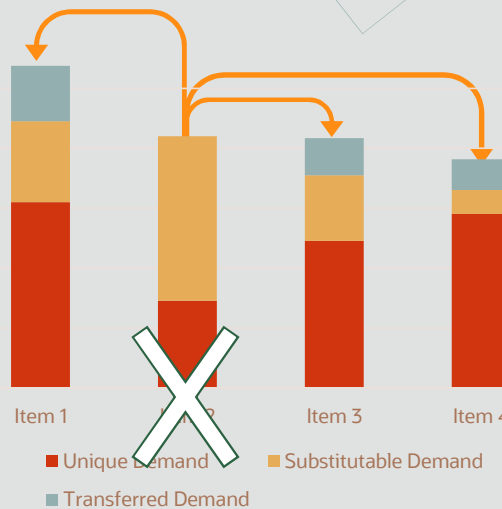
62% Current accuracy for department with frequent assortment changes

80% Accuracy with next generation RDF paired with Demand Transference science
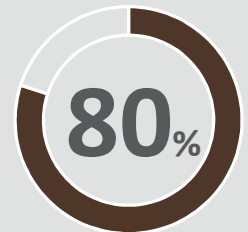
Exploit AI to manage speed and scale

Optimizing Customer Fit Preferences

Size Profile Science

Recommended Size Profile — Store 1

Recommended Size Profile — Store 2

Recommended Size Profile — Store 3
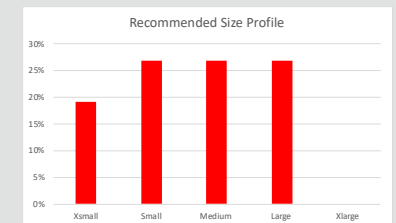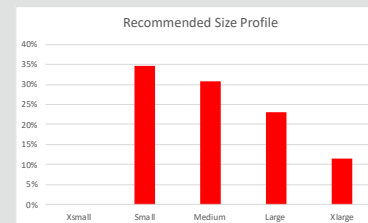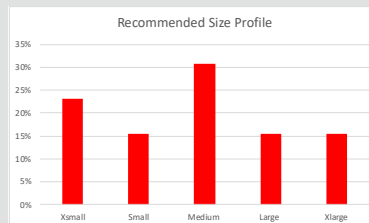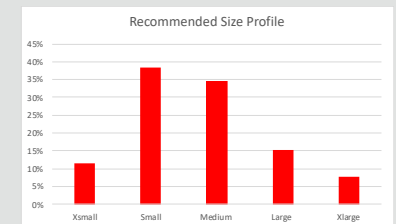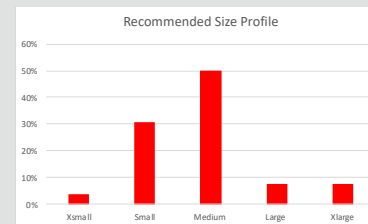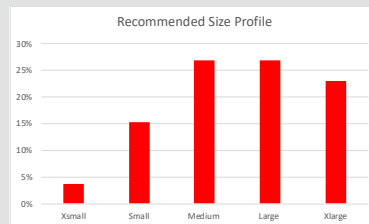
Store 1

Store 2

Store 3

Demand & Inventory Planning
Right Product, Right Location, Right Time, Right Quantity

Align placement with fulfilment

Inventory movement optimized for Profit and Service
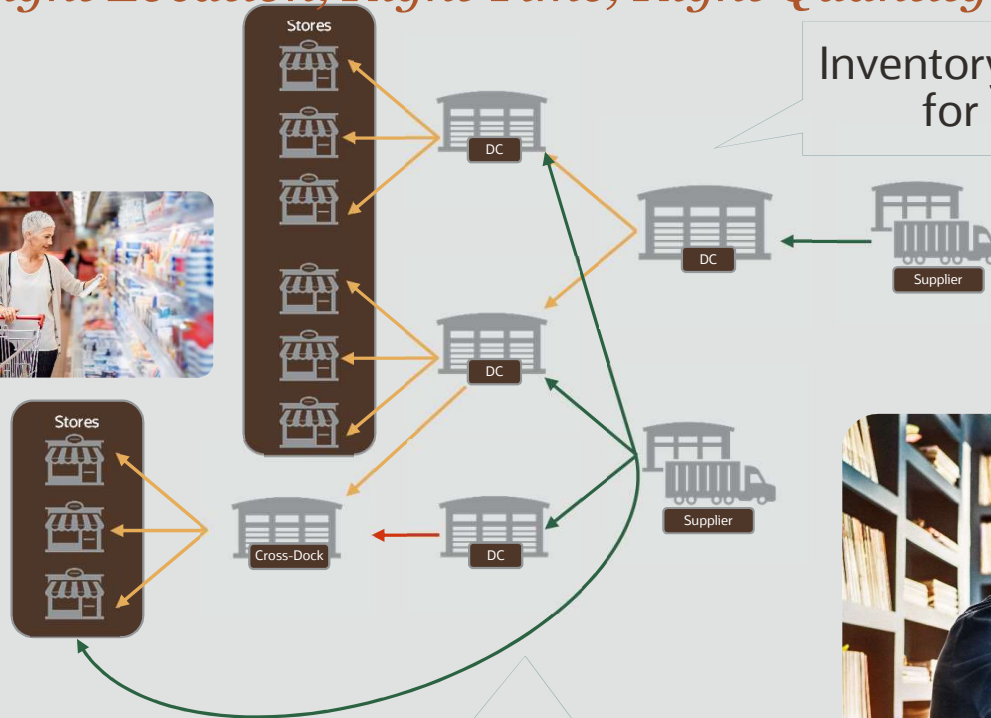
Flexibility for the Modern Supply Chain
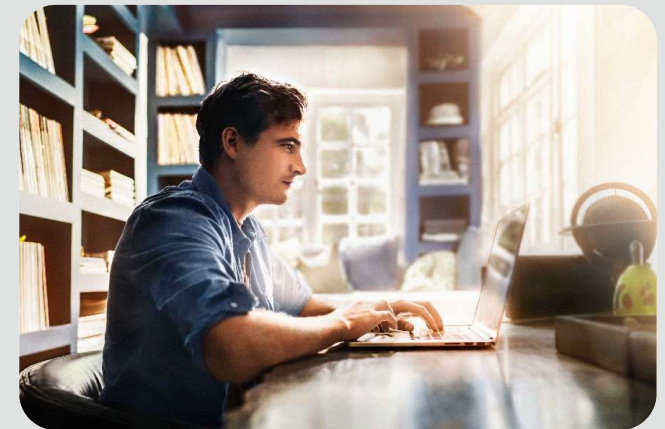
Demand & Inventory Planning
Transforming Lifecycle Strategies into Inventory Movement

	Year X											Year X+1		
	2	3	4	5	6	7	8	9	10	11	12	1	2	3

MAT — EOL
IA — DIS — MAT — EOL
IA — DIS — MAT — EOL
MAT

Today

| IA | Initial Allocation | DIS | Discovery | MAT | Maturity | EOL | End Of Life |
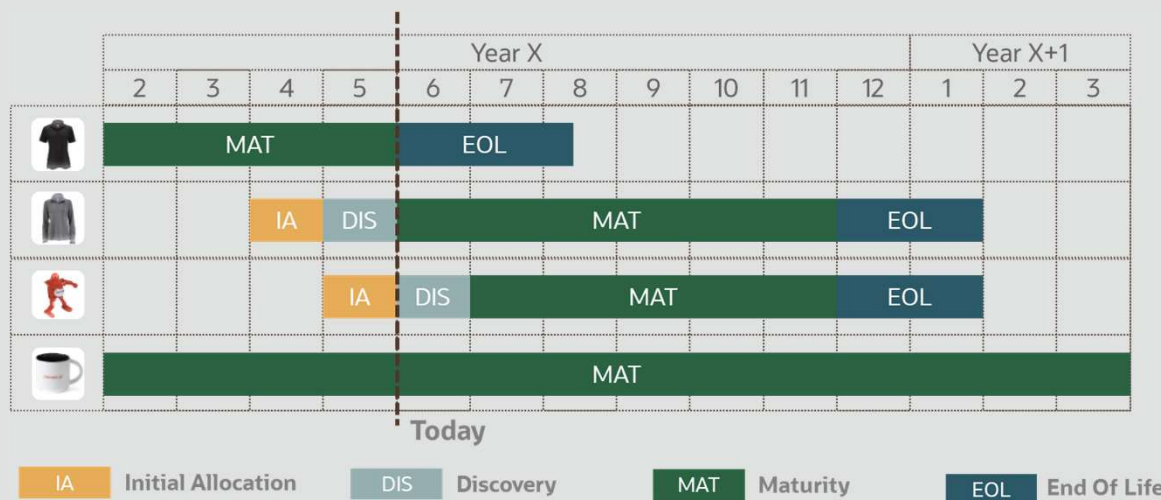
	C	B	A
End of Life	EOL SL 50%	EOL SL 50%	EOL SL 50%
Maturity	SL 90%	SL 95%	SL 98%
Discovery	SL 95%	SL 98%	SL 99%
Initial	20% Season Sales	25% Season Sales	30% Season Sales

SKU-Store Behavior Profile

| Introduction | Growth | Maturity | Decline |

Order Broker

Optimizing Inventory with Intelligent Fulfilment

Online Order

Primary DC

?

Secondary DC

Nearby Store

Fulfill to Strategy

Optimize for Service and Profitability

Online Order

Handling Cost
Gross Margin
Proximity
On Hand
Sales Velocity
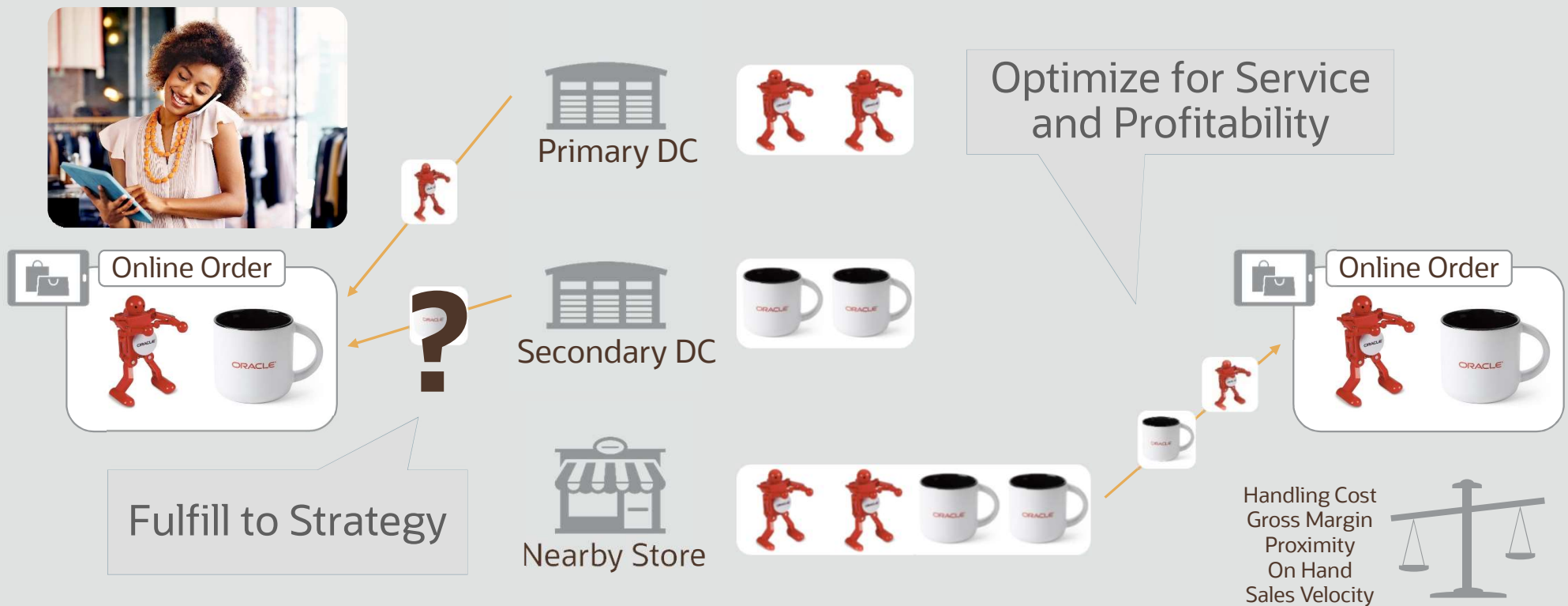
Returns Logistics
Increase Profitability of Returns

Keep in Store
Ship to DC
Discount **?**

RETURNED

50% Return rate in key fashion categories for online channel

Optimal Returns Strategy

1. Ship to DC, No Discount
2. Ship DC, Consider Discount
3. Keep in Store, Consider Discount

Return Rate — Shipping Cost

Revenue increase opportunity from markdown reductions **2**%

Modern Retail Sciences
Exploiting All Your Levers to Optimize Inventory

Increase Shelf Efficiency with
Assortment & Space Optimization

Shape Demand with
Offer Optimization

5-12% reduction in inventory based
on multiple retail case studies

5% average sell thru increase
based on 15+ retail case studies

The Platform For Modern Retail

2 **Tailor the Experience**

Coordinate, Explain & Predict Outcomes

Exception-driven Retailing
Retail Demand Forecasting Cloud Service

Connect

Analyze

Experiment, Explore and Act

Menu | VAR Highlight Alert (0) | Manage Views

VAR Details

Position Query | Merchandise
Measure

User Filter PROD - LOC	☐
Fcst Variant VAR Meas. Image	
Revwd PROD - LOC	☐
PROD Alerts	Promo
Ast. VL Start	2014.12.29 ▼
Ast. VL End	2017.12.11 ▼
Ast. VL Fcst Count	11
Ast. PL Fcst Count	11
.	
ISB Like Item	

VAR-WEEK Chart Simple

Calendar | Position Query | Merchandise
Measure

- Actual Sales Wk Units
- Actual Adj. Sales Wk Units
- Last Year Adj. Sales Wk Units
- System Fcst Wk Units

VAR-WEEK

Measure | Position Query | Merchandise
Calendar

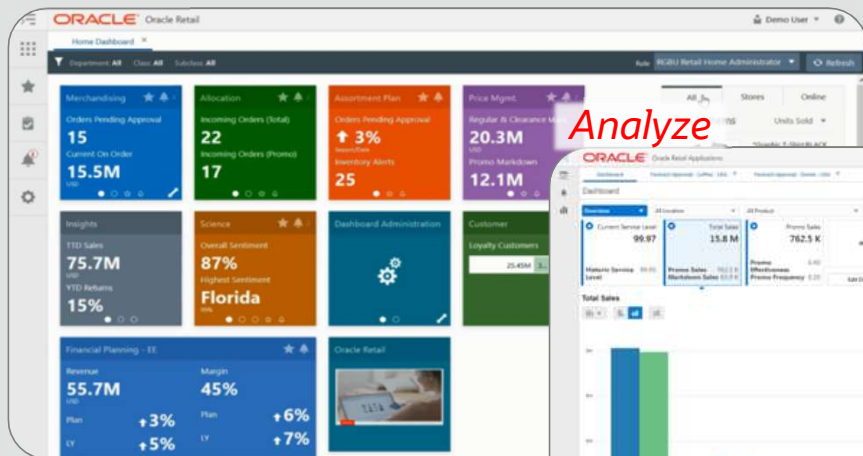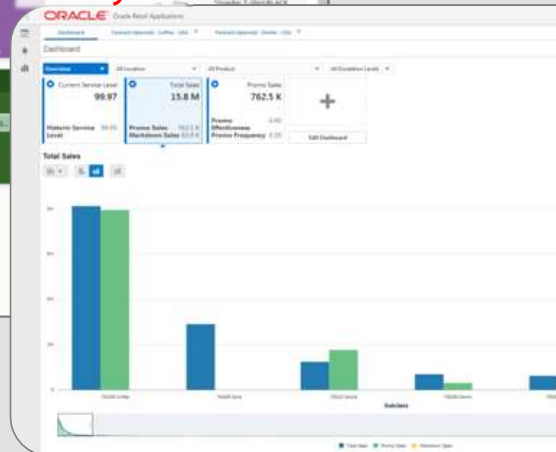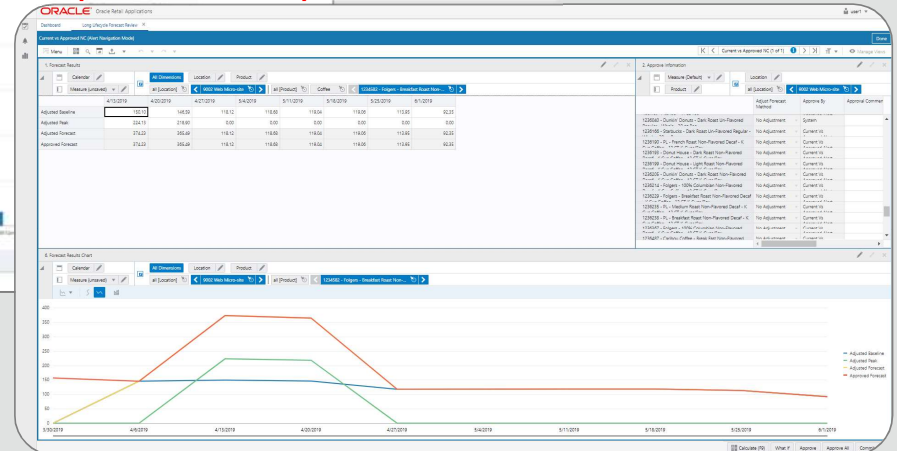|	Actual Sales Wk Units	User Input Sales Wk Units	Actual Input Sales Wk Units	Actual Adj. Sales Wk Units	Actual OOS Wk	Actual Promo Wk	Actu Outa Wk	Actual Outlie Wk	Last Year Adj. Sales Wk	System Fcst Baselin Wk Units	System Fcst Event Wk	System Fcst Event Wk	System Fcst Event Wk	System Fcst Event Wk	Syst Fc W Un
2017.01.02	19,483		19,483	17,447		☑	☐	☐	18,673		Promo 2017 01	Off:20% Cat	0.24		
2017.01.09	21,546		21,546	16,926	0.14	☑	☐	☐	16,427		Promo 2017 01	Off:20% Cat	0.42		
2017.01.16	21,460		21,460	16,522	0.14	☑	☐	☐	16,127		Promo 2017 01	Off:20% Cat	0.18		
2017.01.23	21,287		21,287	17,097		☑	☐	☐	16,217						
2017.01.30	17,878		17,878	16,655		☑	☐	☐	17,019		Promo 2017 03	Off:20% Cat	0.24		
2017.02.06	16,870		16,870	15,332	0.14	☑	☐	☐	14,840		Promo 2017 03	Off:20% Cat	0.42		
2017.02.13	20,402		20,402	14,914		☑	☐	☐	14,751		Promo 2017 03	Off:20% Cat	0.18		
2017.02.20	20,017		20,017	15,275	0.14	☑	☐	☐	14,837						
2017.02.27	17,486		17,486	14,768		☑	☐	☐	14,189		Promo 2017 05	Off:20% Cat	0.24		

VAR-WEEK Chart Full

Calendar | Position Query | Merchandise
Measure

- Actual Sales Wk Units
- Actual Adj. Sales Wk Units
- System Fcst Baseline Wk Units
- System Fcst Wk Units
- User Fcst Wk Units

Scenarios | Views

4 Tiled

1 VAR Details
3 VAR-WEEK
4 VAR-WEEK Chart Full
2 VAR-WEEK Chart Simple

56.103:7001/rpasceui/# | 06:45 PM | Calculate (F9) | Apply Parameters | Calc Initial Sales Rate | Calc Forecast | Rank Like Items & Stores | Calc MAPE Weight | Calc Initial Fcst | Clear Filter | Commit (F8)

Coordinate the Outcomes
Store Inventory Operations Cloud Service

Item

Customer Order Picks
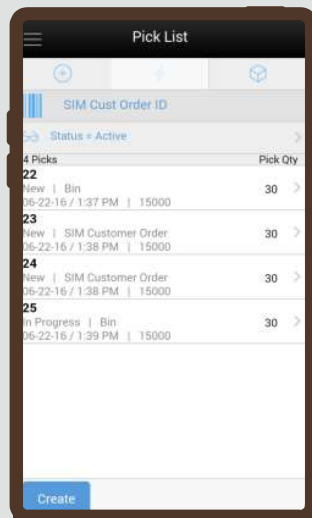
Pick Substitutions

The Platform For Modern Retail

3 **Operational Agility**

Offering Choice and Flexibility with an End-to-End Modern Cloud Platform

The Platform for Modern Retail
Driving Innovation Leveraging Extensible Capabilities

Dashboards
Exceptions
Workflows
Visualizations
Views

Evolve Your Cloud Service with Upgrade-Compatible Extensions

Data Model
Analytics
Models & Algorithms
Integrations
Orchestration

slack

Digital Assistant

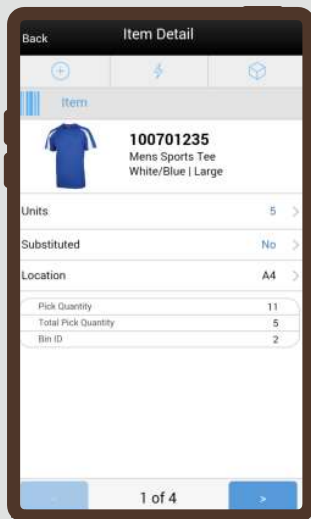| Merchandise Financial Planning	Assortment & Item Planning	Allocation	Replenishment	Item Lifecycle Pricing

Inventory Planning

ORACLE Cloud

TensorFlow

Retail Demand Forecasting
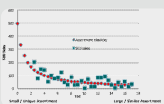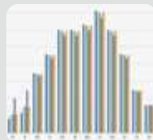
DT	AC	PS	AE&B	CDT	AA	CS	OO	IW
Demand Transference	Advanced Clustering	Profile Science	Attribute Extraction & Binning	Customer Decision Trees	Affinity Analysis	Customer Segmentation	Offer Optimization	Innovation Workbench

Driving End User Value
Self-Sustaining Service

Speed to Value

'On Trend' Best Practice Templates + Exception Based Workflows

+

Continuous Delivery

Maintenance *Monthly*	Minor *Quarterly*	Major *Bi-Annually*

Frequent, Low-risk Releases Categorized by Impact to End-user

+

Holistic Support

Customer Success Manager	Customer Success Toolkit	Test Automation Tooling

=

Get the Most From Your Cloud Service

Continuous Value = Continuous Delivery + Continuous Adoption

... with the end-user at the center

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- What's Our Strategy?
- What's Next?
- Questions?

Supply Chain Planning Logical Architecture
High Level Overview

Advanced Science

Advanced Clustering

Lifecycle Policy Optimization

Customer Segmentation

Customer Journey Forecasting

Attribute Extraction

Inventory Productivity Optimization

CDT/DT

Innovation Workbench

Parameters Management

Supply Chain Network

Planning Calendars

Forecasting Parameters

Replenishment Parameters

Constraints Parameters

Rule Engine

Continuous Replenishment Optimization

Demand Forecasting

Demand & Inventory Statistics & KPIs

Classification & Clustering

Seasonality / Lifecycle Profiles by Attribute

Pre-processing
Demand Decomposition
Advanced Profiling
Promotion Forecasting
Automatic New Item
Composite Forecast
Algorithm Extensibility

Tuning & Management

Collaborative Demand Planning

Forecast Review & Approval

Allocation & Replenishment

Synchronized Multi-Level Time-Phased Constrained Allocation & Replenishment Planning

Collaborative Allocation & Replenishment Planning

Orders Review & Approval

Store to Store Rebalancing

Merchandise, Assortment & Pricing Planning

Merchandise Operations Management

Store Inventory Operations

Supply Chain Reporting & Insights

Supply Chain Planning Logical Architecture
High Level Overview

Advanced Science

- Advanced Clustering
- Customer Segmentation
- Attribute Extraction
- CDT/DT
- Innovation Workbench

Parameters Management

- Supply Chain Network
- Planning Calendars
- Forecasting Parameters
- Replenishment Parameters
- Constraints Parameters

Rule Engine

Replenishment Optimisation

Demand Forecasting

- Demand & Inventory Statistics & KPIs
- Classification & Clustering
- Seasonality / Lifecycle Profiles by Attribute
- Pre-processing
- Demand Decomposition
- Advanced Profiling
- Promotion Forecasting
- Automatic New Item
- Composite Forecast
- Algorithm Extensibility
- Tuning & Management
- Collaborative Demand Planning
- Forecast Review & Approval

Allocation & Replenishment

- Synchronized Multi-Level Time-Phased Constrained Allocation & Replenishment Planning
- Collaborative Allocation & Replenishment Planning
- Store to Store Rebalancing
- Orders Review & Approval

Merchandise Operations Management Execution & Reporting

P&O / Supply Chain / Science
Release and Roadmap Candidates

Recently Launched	12 – 24 Months	24-36 Month Candidates

Recently Launched

- Accelerate Next Practice
  - Launch of RPAS Cloud Edition
  - Merchandise Financial Planning w/ Customer Journeys
  - Assortment & Item Planning
  - Next Gen Retail Demand Forecasting
  - Retail Science Platform
  - Offer Optimization
  - Digital Assistant
  - Size Profile Science
- Tailor The Experience
  - Retail Home – Connected Workflow Focus
  - Dashboard Driven Processes
  - Contextual Launch
  - Focused & Visual Workflow
  - What-if Scenario Planning w/Parallel Workspaces
  - Evolution of Placeholder Maintenance
- Operational Agility
  - Speed to Value
  - Continuous Updates, w/ Test Automation & RLS
  - SaaS Extensibility
  - Online Administration w/ Dashboarding

12 – 24 Months

Solutions
- Next Practice Expansion
  - **Forecasting Expansion**
  - **Next Generation Allocation & Replenishment**
  - Assortment Planning Expansion (FSL / GHL)
  - KPI Modernization
- Customer Strategy Planning

Science
- **Inventory Optimization**
- Initial & Regular Price Optimization
- **Next Gen Demand Transference**
- **Evolution of Promotional Driven Halo & Cannibalization**
- Customer Specific Attribute Correlation
- AI-Enabled UI / Digital Assistant Expansion
- Space Optimization Expansion

SaaS/Platform
- **Right Time Integration Architecture**
- **Enterprise Orchestration Expansion**
- Self-Sustaining Autonomous Platform
- User Feedback Framework
- Guided Feature Introduction

24-36 Month Candidates

- Expansion of SaaS Solutions
- Continued Focus On
  - User Experience
  - SaaS / Cloud Operations
  - Integration Improvements
  - Leveraging Cloud Scalability
  - Science Research & Innovation
  - Analytics & Insights

Roadmap

Past

Planning & Optimization Cloud Services

Retail Science Cloud Services

Next Generation Cloud-native Planning Platform

SaaS Continuous Delivery

Current

Next Generation Retail Demand Forecasting

Offer Optimization Science

Size Profile Science

Customer Journey Planning

Visual Assortment Planning

Digital Assistant

Self-Sustaining SaaS

Next

Modern Retail Planning KPIs

Assortment Optimization

Fashion Sciences Expansion

Next Generation SaaS Integration Architecture

Future

Inventory Optimization

Initial Price Optimization

Space Optimization

Next Generation Promotion-driven Halo & Cannibalization

AI-Enabled UI / Digital Assistant Expansion

Solution Strategy: Supply Chain - Agenda

- A Look At Where We Have Been

- What's Our Strategy?

- What's Next?

- Questions?

Thank You

Oracle Retail Team