Dynamics 365
Intelligent Order Management

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Dynamics 365 Implementation Guide

Collective experience gained through thousands of Dynamics 365 implementations

Available at: https://aka.ms/d365implementationguide
Agenda

1. Overview of Dynamics 365 Intelligent Order Management
2. Demonstration
3. Architecture
4. Q&A.
Digital Feedback Loop: enabling digital transformation

1. Data: Capture digital signal across business
2. Insight: Connect and synthesize data
3. Action: Improve business outcomes

Engage customers
Optimize operations
Empower employees
Transform products
The digital commerce imperative

61% companies expect over 50% of sales from digital commerce in the next 1-2 years.\(^1\)

51% companies whose supply chain is unprepared to meet growing digital commerce needs.\(^2\)

Key challenges that companies face with supply chain agility today

49% experiencing slower distribution, longer fulfillment times due to Covid-19.\(^2\)

37% lack of adequate supply chain technology.\(^2\)

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\(^1\) Base: 470 global decision makers of digital transformation strategies and operations as it relates to the retail experience for customers with channel engagement from online and offline

\(^2\) Base: 624 global decision makers of digital transformation strategies and operations as it relates to the retail experience for their retail experience for customers

Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, November 2020
Key drivers for companies to improve digital commerce

- Better meet customer needs (60%)
- Be more responsive (48%)
- Explore new business models (39%)

Aspects of supply chain agility most important for companies

- Enable the most cost-efficient fulfillment options (52%)
- Increasing the use of machine learning and AI to drive process automation (56%)

Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, November 2020

Base: 624 global decision makers of digital transformation strategies and operations as it relates to the retail experience for their retail experience for customers
Considerations

Need to manage order routing across various order fulfillment systems and warehouses and delivery providers.

Need to dynamically reconfigure fulfillment pathways leveraging new partners and responding to disruptions.


Need to know where inbound and outbound orders are at every stage, accentuated by COVID disruptions and generational expectations.

Solution Considerations

- Modeled order journey
- Event/action orchestration
- Connector based ecosystem
- Scale out order capture
- Scale out execution
- Configured not coded
- Intelligent rule-based optimization
- Measurement and analytics in core
- Doesn’t require rip and replace
- Just works with Dynamics 365

Intelligent Order Management
Intelligent Order Management - Evolution

Intelligent Order Management

Multiple Order Sources

Order Capture

Order Orchestration

Order Fulfillment

Multiple Fulfillment Paths

Dataverse – (CDS)

Common Event Service
Dynamics 365 Intelligent Order Management
Adapt quickly and fulfill efficiently

Modern Open Platform
Pre-built platform connectors
Existing enterprise system integration
No-limit cloud scalability

Intelligent Fulfillment
Event driven orchestration
AI & rules-based fulfillment
Streamlined return management

Real-time Visibility
Actionable fulfillment insights
Omnichannel inventory data
Cross-organization single order view

* Can be used with Dynamics 365 and non-Dynamics 365 applications
Demo

Lachlan Cash
Dynamics 365 Intelligent Order Management
Adapt quickly and fulfill efficiently

Modern Open Platform
- Pre-built platform connectors
- Existing enterprise system integration
- No-limit cloud scalability

Intelligent Fulfillment
- Event driven orchestration
- AI & rules-based fulfillment
- Streamlined return management

Real-time Visibility
- Actionable fulfillment insights
- Omnichannel inventory data
- Cross-organization single order view

* Can be used with Dynamics 365 and non-Dynamics 365 applications
Architecture of the providers
Principles

- Leverage the Power Platform
- Enable extensibility
- Design for scale
Architecture concepts

Data Pipeline
- Data Integration Services
- Power Query Online

Orchestration Engine
- Orchestration Services
- Orchestration Compiler
- Power
  - Automate

Insights
- Power BI
  - AI Builder
- Dataverse
- Azure
Data pipeline

- Data movement
- Mapping and transformation
What is a Provider?

Provider Definition

- **Power Automates**
  - Actions & Event Handlers

- **Connectors**
  - Service API Wrapper

- **Connections**
  - Connector Credentials

- **Data Transformations**
  - Power Query Online

- **Business Events**
  - Orchestration integration

- **Parameters**
  - Instance configurations

Activate Providers

Create multiple instances of a Definition by supplying new Connections and Parameters
**System interaction & Data Flow**

**Customer**
- Deploys the IOM application
- Signs up for external service
- Configure IOM Provider/connectors in their application instance

**IOM Application**
- Events from messages received from connectors raise events.
- Events are handled in IOM orchestration
- Actions from Provider trigger events to send messages to external service customer is using.

**External Service**
- Has API framework that can be called like a REST API post/response
- Messages send via API will be translated in the IOM Provider/Connector mapping.
Orchestration
Orchestration engine

- Business processes definition
- Execution and tracking
Orchestration Actions
Orchestration actions

Actions

- Providers can add functionality to order processing for external systems.
- The events raised through the orchestration can trigger the need for business functionality to be processed.
- Fulfillment
- Delivery
- Address validation
- Price validation
- Tax validation
- Denied party screening
- Credit checking.

Bring your own events.

- Customer and partners can add providers to call external systems to provider orchestration actions.
Data Management
Data Management

Dataverse

- Common entity model to share with other dynamics applications.

System Data

- Unit of measure, Currency

Master Data

- Account and Product

External Code Transformation

- Mapping system to convert external systems code from/to values
- Used to translate master data and system data.
- Post public preview.
Insights and Analytics

Overview
Insights

- Operational insights
- AI scenarios
Models

Overview
Intelligent Order Management – Possible Models

1st and 3rd Party commerce
Allow orders to flow to fulfillment systems B2C, B2B, D2C models

Retail and Social Marketplaces
Allow orders to flow to fulfillment systems

1st and 3rd CRM-Sales applications
Allow orders to flow to fulfillment systems

Applications
Allow orders to flow to fulfillment systems

Store applications
Use 3rd party store systems as fulfillment locations

Drop ship-External sourcing
Pass orders through to supplier systems for drop, ship, purchase, manufacture, customer order

EDI
Support common retail, distribution channels that require order communication over EDI

External fulfillment
Allow orders to flow to fulfillment systems, 3PLs, deliver carriers (parcel, freight, delivery). Lockers

Hub and Spoke
Allow D65 to pass orders through to corporate ERP system.

Multi-Instance
Allow companies that have instances of D365 to exchange intercompany orders e.g. corp in US manufacturing in China.

Legacy ERP fulfillment
Allow orders to be aggregated from legacy system to fulfillment

Small business applications
Communication to Microsoft and external small business applications.
Fulfillment Optimization

Overview
Frictionless Fulfillment

Dynamics 365 Intelligent Order Management

- Policies
- Data Validation
- Real-time Inventory
- Orchestration Designer
- AI Result utilized in rules
- Designer Flow Customization
Meet growing digital commerce needs

**Deliver on your order promise.**
Automate and optimize fulfillment with a rule-based orchestration system leveraging AI. Effectively manage delivery capacity to support fulfillment strategies.

**Real-time inventory visibility**
Enable smarter fulfilment orchestration and achieve optimal stock levels using real-time omni-channel inventory data.

**Manage the entire order lifecycle.**
Gain real-time visibility into the order from intake to delivery with customizable integrated dashboards to track and improve operational efficiency.

**Respond instantly to disruptions.**
Model and automate the response to order-fulfillment constraints and help ensure on-time delivery by using drag-and-drop tools to modify the order journey.

**Get up and running quickly.**
Integrate with your existing enterprise systems, and scale to support order intake, fulfillment, and delivery partners using pre-built connectors.
Intelligent Fulfillment Optimization (DOM)

An intelligent optimization service that maximizes orders fulfillment within the supply chain network, which involves suppliers, retailers and customers, so that products are delivered to the customers at the right quantities, from the right sources and at the right time, in order to maximize profits, minimizing costs and satisfying service-level requirements.

1. Problem Statement

Historically there was a well-defined linear relationship between suppliers, manufacturers, distributors, retailers, and customers.

In a modern supply network where product fulfillment can be from multiple channels, retailers must adapt to order changes, supplier availability issues, or a spike in demand quickly. DOM is becoming a necessity for today’s organizations.

2. How DOM works

Intelligent Fulfillment Optimization is focused on finding right source for delivery of the products based on different business objectives and within constraints imposed on it.
Intelligent Fulfillment Optimization (DOM)

**Demand Sources**
- 1st Party Commerce
- E-commerce platforms
- Retail and Social Marketplaces
- Apps
- 1st and 3rd party CRM-Sales Apps
- EDI

**Data Inputs**
- Sales and Returns
  - Online Stores, Franchise, Wholesale, Call Center, Corporate
- Use Real Available Inventory or Assume 100%
  - Suppliers, Stores, DC, Fulfillment Centers, 3PL etc.

**Fulfillment Strategy**
- Objectives
- Business Constraints
- Sales Origins
- Mode of Delivery

**Fulfillment Costs**

**Optimization**
- Objectives
  - Shortest Distance (Public Preview)

**Business Constraints**
- Coverage Area by Source
- Maximum Orders by Source
- Maximum number of sources
- Source Priority
- Offline Sources
- Minimum Inventory
- Maximum Rejects

**Data Outputs**
- Fulfillment Plans
  - Order and Line Inputs
  - Proposed quantity to be fulfilled
- Fulfillment Sources
  - Warehouses (Distribution Centers, Fulfillment Centers
  - Stores, Third Party Logistics)
  - Others (Drop ship vendors)

Order Orchestration

Optimization by batching
Objectives – Shortest Distance as cost variable

Maximizes orders fulfillment within the supply chain network, which involves suppliers, retailers and customers, so that products are delivered to the customers from the closest source where distance between customer and fulfillment source is treated as a cost within other business constraints defined.
Business Constraints

- Safety Stock or Minimum sellable inventory
- Coverage area (circular area initially. Potentially defining a zone in future)
- Maximum orders
- Source priority by product family or product
- Number of fulfillment sources
- Maximum rejections
- Offline Sources
Multi tenant processing pipeline

Tenant 1 Environment

1) Read config updates periodically
2) GetFulfillmentLocation API invoked as plug in

Write back fulfillment plans, lines and logs

Tenant 2 Environment

1) Read config updates periodically
2) GetFulfillmentLocation API Plug in

Write back fulfillment plans, lines and logs

DOM processing pipeline

Management and Dashboards (UCI)

Management UI

Azure Maps
Planned Optimizations and Constraints

**Demand Sources**
- 1st Party Commerce
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- EDI

**Data Inputs**
- Sales and Returns
  - Online Stores, Franchise, Wholesale, Call Center, Corporate
- Available Inventory or assumed 100%
  - Suppliers, Stores, DC, Fulfillment Centers, 3PL etc.
- Fulfillment Strategy
  - Objectives
  - Business Constraints
  - Sales Origins
  - Mode of Delivery
- Fulfillment Costs

**Optimization**
- Multiple Objectives
  - Shortest Distance (Public Preview)
  - Fulfillment Cost (Post Public Preview)
  - Customer Promised Delivery Dates (Post GA)
  - Sources with highest inventory (Post GA)
  - Sources with highest margins (Post GA)

**Business Constraints**
- Coverage Area by Source
- Maximum Orders by Source
- Maximum number of sources
- Source Priority
- Offline Sources
- Minimum Inventory
- Maximum Rejects
- Customer based priorities (Post GA)
- Product Bundling (Post GA)

**Data Outputs**
- Fulfillment Plans
  - Order and Line Inputs
  - Proposed quantity to be fulfilled
- Fulfillment Sources
  - Warehouses (Distribution Centers, Fulfillment Centers)
  - Stores, Third Party Logistics
  - Others (Drop ship vendors)

**IOM Order Orchestration**
Entity view

- Sourcing Strategy
- Objectives (Optimizations)
- Rules
- Cost Config
- Sources and Source Lists
- Sales Origins
- Delivery Modes
- Products, Categories
- Warehouses, Sales Orders, Order Details, Customers
- Outputs of DOM – Fulfillment Plan, Plan Line, Plan Input Line

- Shared Solution with IOM
- Part of DOM Solution
- Entities from Dynamics 365 Sales and Field Service that need to be moved to Common Solution

Management and Dashboards (UCI)
Inventory Service

Overview
Inventory Visibility Vision

Omni-Channels Demands

- OMS or OPS integration to enable fulfilment sourcing optimization
- ERP or WMS integration to empower inventory real-time control

Inventory Storage

- Factory
- Store
- Warehouse

Global View Inventory Visibility

Real Time On Hand Tracking

Across Channel\Location Availability

Extensibility with 3rd party Integrations

Fulfillment Location

- 3PL
- DC Net
- Store
Q&A

Thank-You

You can access a trial at
https://www.dynamics.com
https://dynamics.microsoft.com/en-us/get-started/?appname=IOM