

Increase shipping velocity with a smaller workforce while improving accuracy

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Agenda

- Introduction
- Business Challenges
- Solution Highlights
- Results and Lessons Learnt
- Q&A

About iNYXA

Oracle
WMS / MSCA
Solutions

Flexible
Support
Models

R12 Upgrade
Program

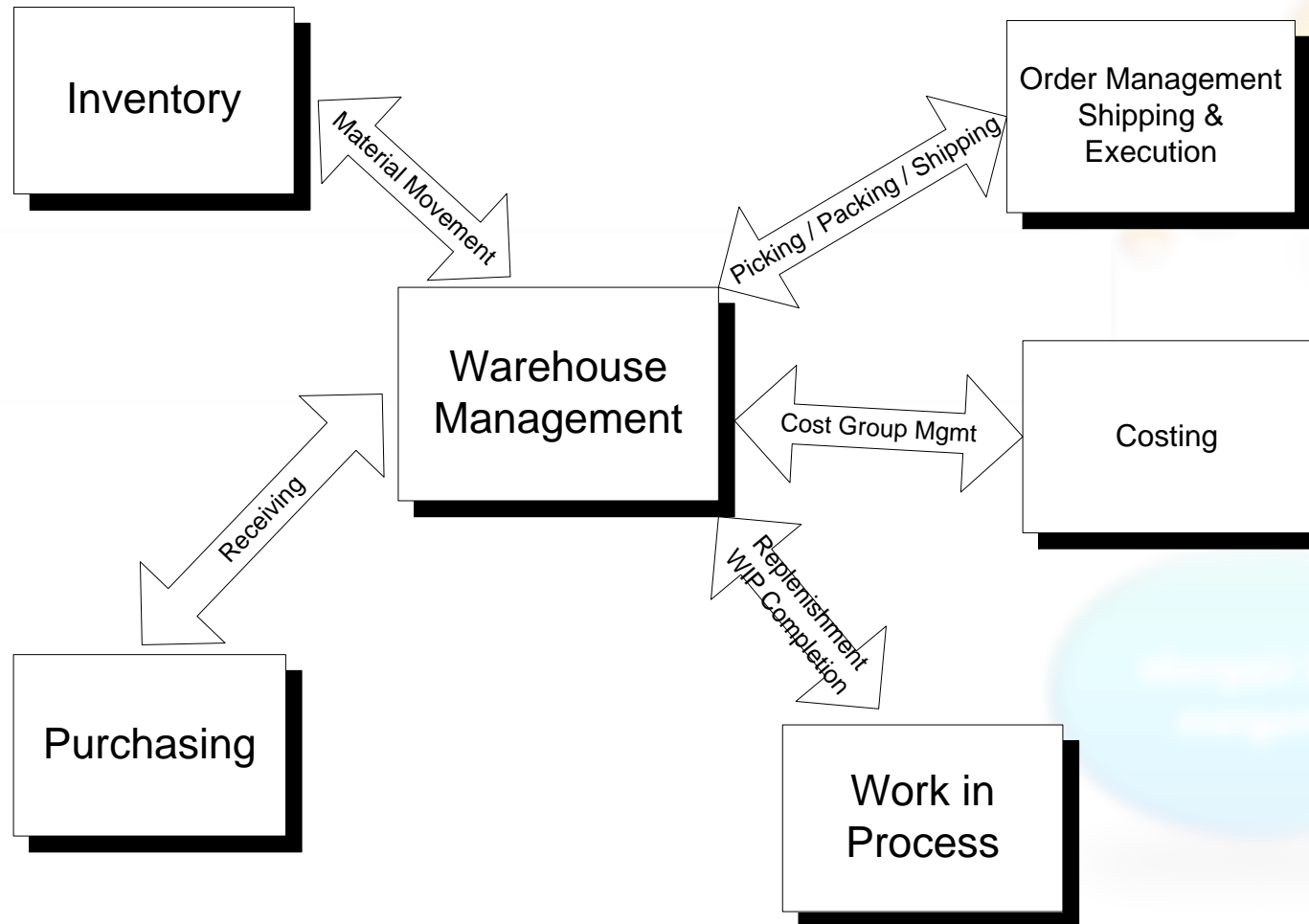
Our Commitment to your Success

- Focused exclusively on Oracle e-Business Suite.
- Value-added solutions for Oracle Distribution & Logistics products.
- Processes, Tools & Methodologies that maximize transparency, minimize risk & quantify success criteria.
- Shared risk engagement model
- Technical capabilities to build even the most complex extensions using Oracle ADF, BPEL & Web Center in addition to standard PL-SQL, Forms and Reports development.
- Managed Support DBA & Upgrade services.
- More information on the web at www.inyxa.com

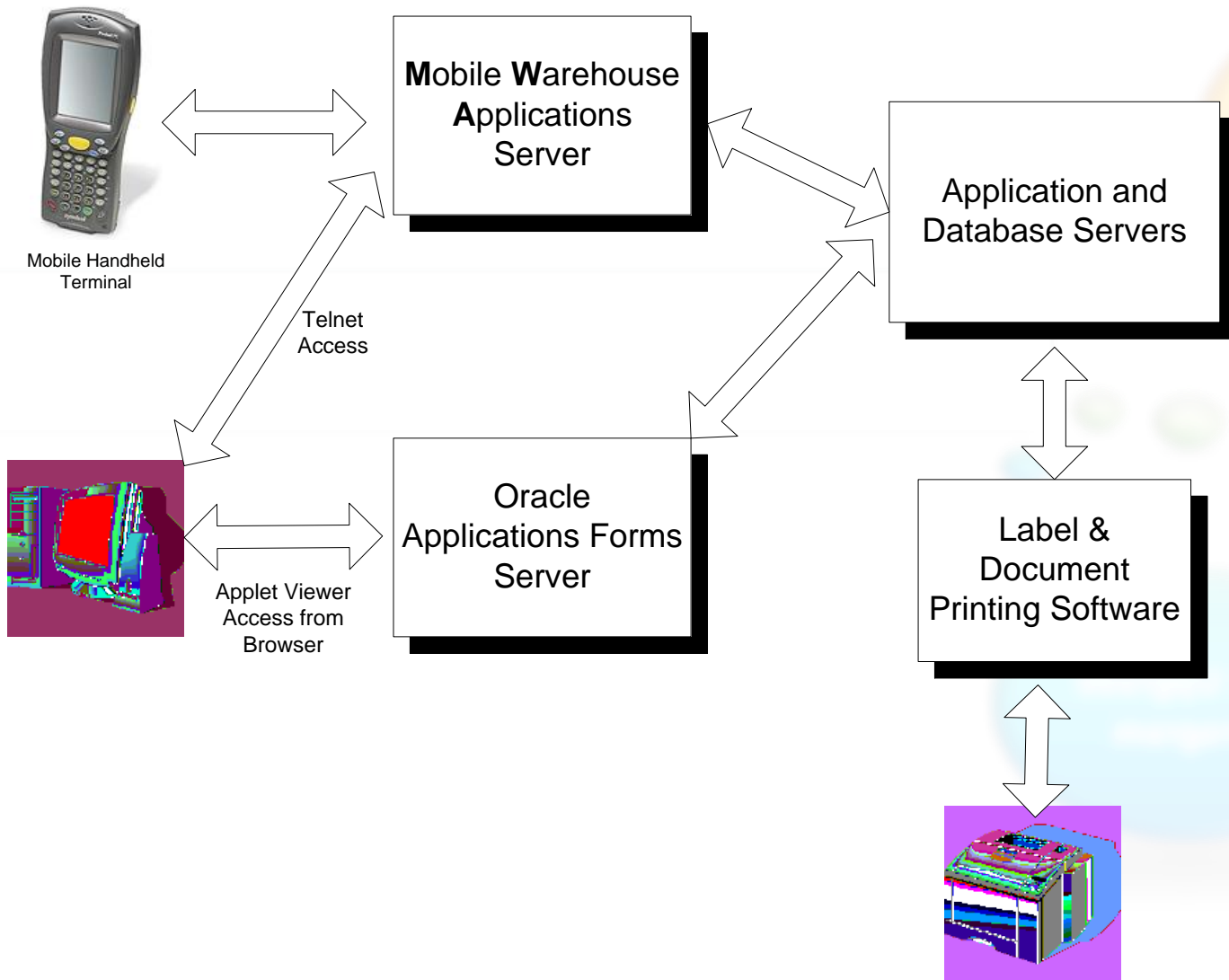
Customer Environment

- A 300K sq ft. warehouse operating 24x7
- Shipping through internal fleet, commercial TL/LTL carriers and parcel carriers
- Warehouse serves as freight pooling point for inter-plant and plant → customer shipments
- Movement of goods throughout organization is planned in a non-Oracle Transportation Management Solution.
- Significant Reverse Logistics, Re-Packaging and Testing operations.

About Oracle WMS > Place in e-Business Suite



About Oracle WMS > Architecture



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Business Challenges > Receiving & Consolidation

- Capture & track packaging code at receipt
- Segregate product by business unit.
- Locator capacity depends on item & pack code and cannot be reliably set in weight, volume or qty.
- Efficiently handle large returns
- Disposition of product arriving without proper paperwork

Business Challenges > Packing & Shipping

- Manage workload release to warehouse in 24x7 environment
- Efficient way to pick & pack large no. of Parcel shipments.
- Build pallets to customer specifications of no. of items, weight & height
- Minimize re-packaging and prevent shipping of incorrect packaging codes.

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Solution Highlights

- Pallet Building Solution
- Case Picking Solution
- Pick Wave Planning Workbench
- Advanced Rules Package

How it Works → Pallet Building Solution

2 Customer Specific packaging requirements stored in OM Quick Codes and Customer DFFs.

3  Pick Release

Pick release process creates deliveries

4 Pallet building algorithm splits / consolidates delivery lines and packs into Pallets

1 Box / Packaging info stored and associated with each item

800-VMI-8 Box Type Maintenance Query Form

Search by Box Type: Box Name:

BOX_ID	BOX_VOLUME	VOLUME_UOM_CODE	PCS_PER_LAYER	PCS_PER_SKID	WEIGHT_CATEGORY	LENGTH	WIDTH	HEIGHT
306013	3982.5	CIN	5	20	20	14.75	1.35	18.5
306073	2508	1875	CIN					18.5
306513	1680	CIN4						11.5
306592 01	1720	6875	CIN					11
306593	1214	8125	CIN					1.25
306594	2273	90625	CIN					8.75
A102032	1435	CIN						9.75
A102033	1599	CIN						8.25
A102034	831	1875	CIN					8.75
A102035	978	859375	CIN					

Box Type Detail

Org: (READONLY)

BoxId: A122

L: 11 B: 6.75 H: 7.375 in Inches

Volume: 547.29 (READONLY FIELD) in Inches Cube

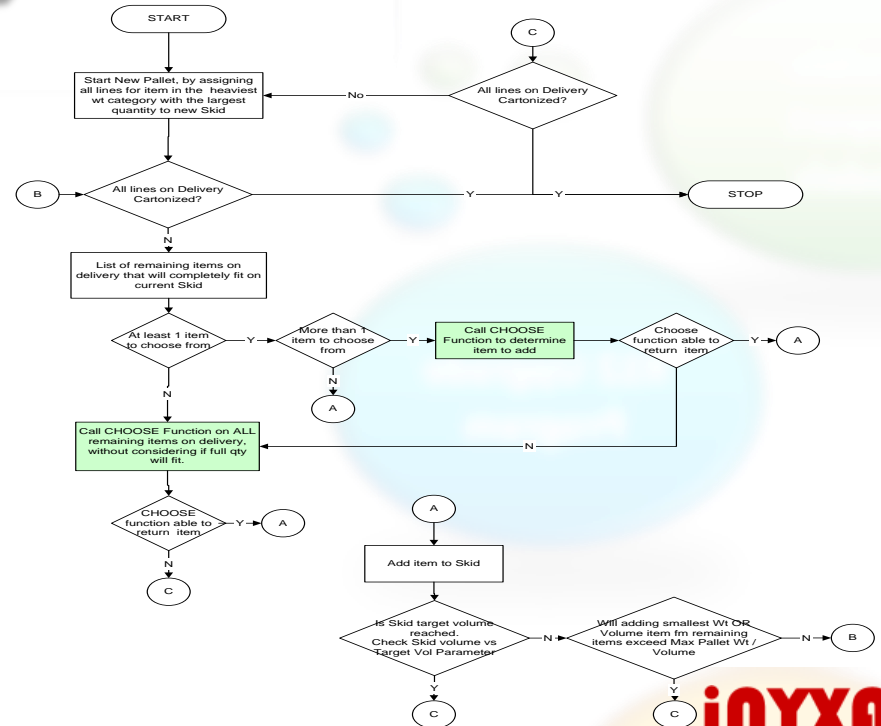
Pcs per Skid: 15

Pos per Layer: 12

Weight Category: 2 Greater Number is heavier product

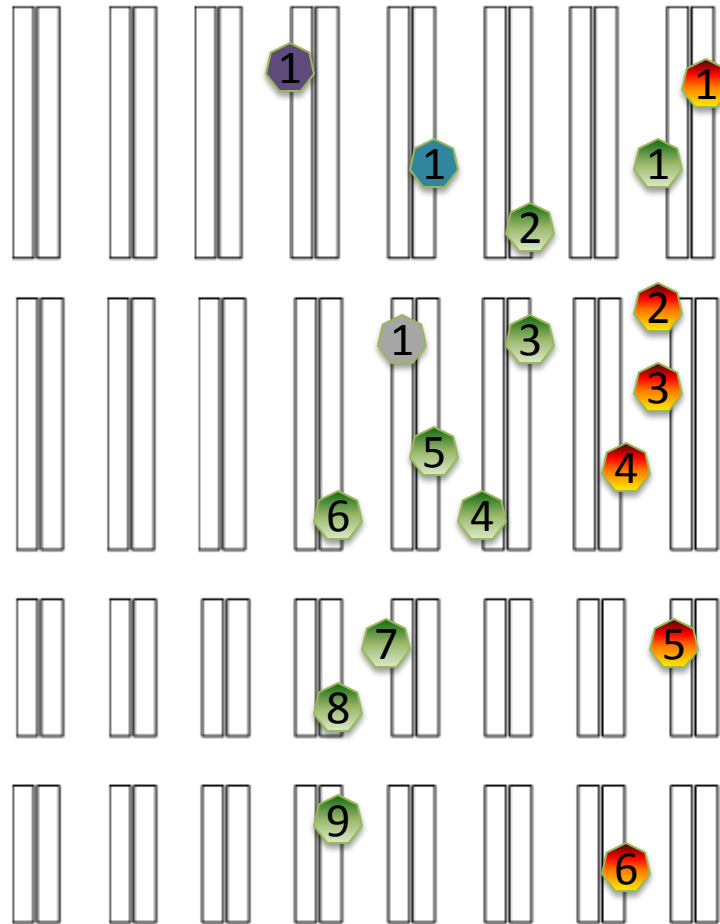
Items Assigned to Box

ITEM	BOX	LIMIT_WEIGHT	WEIGHT_UOM_CODE	QUANTITY	PRIORITY	LINE_BOX_ID
464A101067	A122	11 LB		15	A141	A122
464A101239	A122	14 LB		15	A147	A122
464E102086	A122	14 LB		20	A145	A122
464E102087	A122	15 LB				

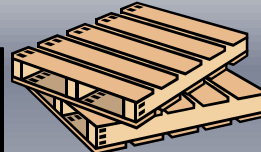
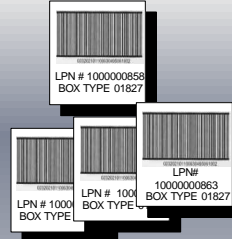


How it Works → Pallet Building Solution

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OFFICE



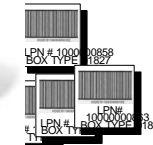
Picks are full pallet picks.
Balance delivery lines are divided into mixed Label. e.g. Label picks from 6 locators, whereas Label picks product from 9 locators to create a full pallet, per customer / company rules. Picks for Picks arranged by weight & location rules.

G

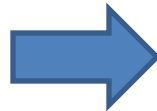
How it Works → Pallet Building Solution

6

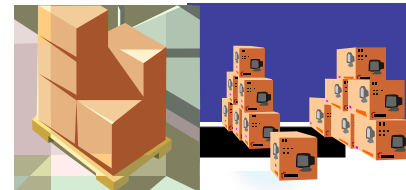
Picker scans pallet label to assign all tasks on pallet to self, then confirms each pick on Mobile Device



```
Load (D) (W1)
Sub      :TC-Store1
Confirm  :
Loc      :TC-1.1
Loc/LPN  :
Item Desc:Gatch Weig
Item     :TC-Gatch1
Confirm  :
UOM      :>Ea(1 Ea)
Req Qty  :5.0
Confirm  :
<Exception>
<Skip Task>
<Info>
```



```
Drop (W1)
From LPN :LPN200
To Sub   :STA
Confirm  :>STA
To Loc   :L1.1.1
Confirm  :]L1.1.1
Drop LPN :>
<Done>
<Cancel>
```



7

Once all tasks on Pallet have been picked, Pallet is wrapped and dropped to outbound staging lane.

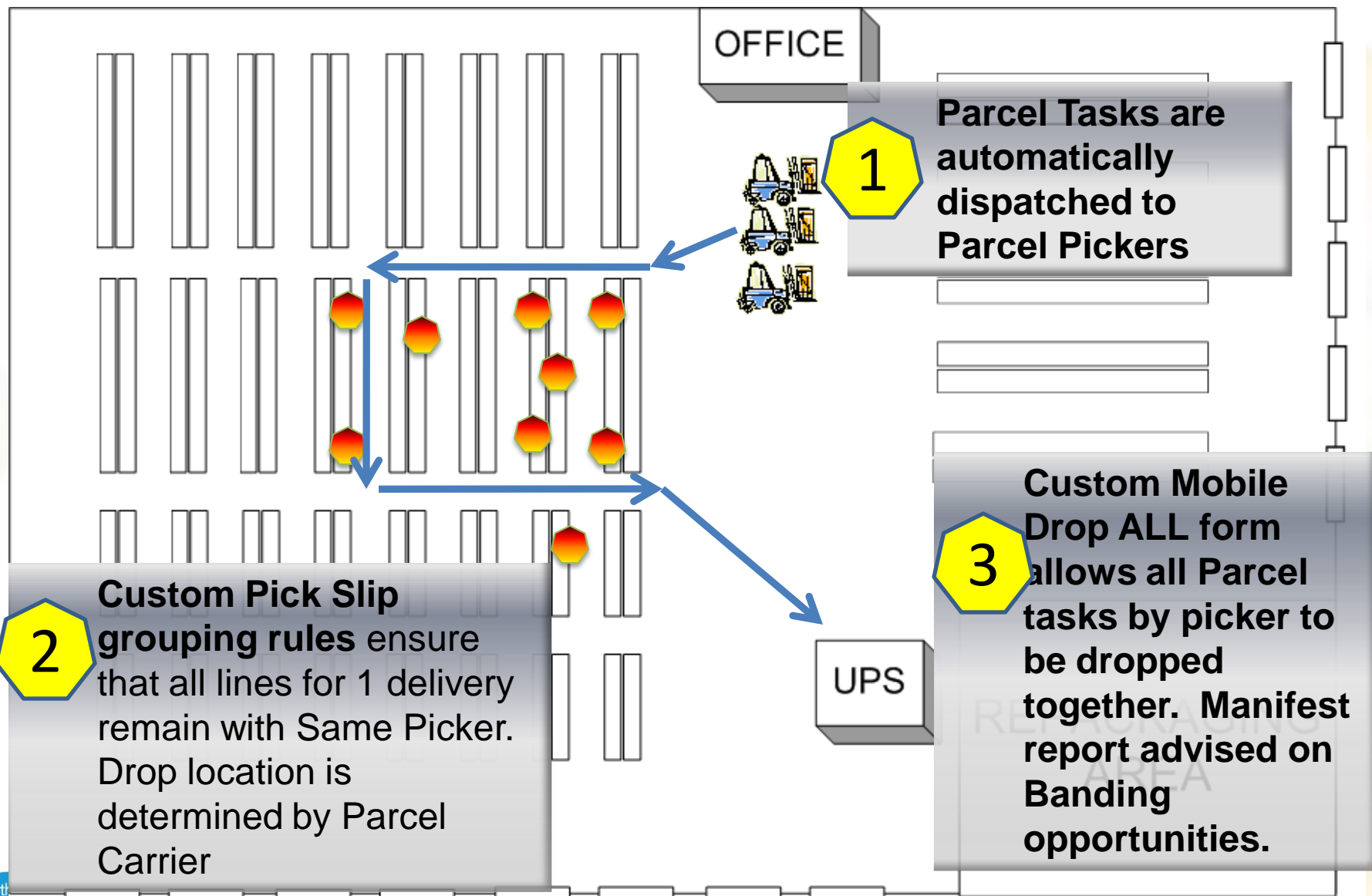
Pallet Building → Benefits to Customer

- Speed up of entire pick – pack – ship process.
- Visual distribution of picking work, by dividing labels.
- Ability to comply to customer and internal directives of Pallet Height, Weight & no. of items.
- Reduction in training time for new pickers.
- Met Internal / Customer Specifications of Pallets built
 - Pallets to height of not more than 60”.
 - Minimize fragmentation of same item across pallets.
 - Heavier items pick first and are placed on bottom of pallet

Need for Solution / Support in Vanilla e-Business Suite

R11.5.10 Support	R12.1 Support	Inyxa Pallet Building Solution
<p>R11.5.10 provides a pick by label mobile screen, and basic cartonization setups.</p>	<p>Release 12.1 adds to cartonization functionality by providing a rules based cartonization forms.</p>	<p>This solution consists of forms that can capture packaging information for each item that the warehouse handles, including box size, dimensions etc. Quick Code Parameters also capture target pallet height & weight for all customers, and for specific customers.</p>
<p>Cartonization can be used only to place product into standard pack sizes and pre-generate LPNs for these standard pack sizes. Inability to create rules for mixed item pallets.</p>	<p>A program stub is also provided to create custom cartonization logic.</p>	<p>Post pick release, a concurrent program combines this packaging information with lines that have been picked, intelligently packs product into pallets, then sets the picking order so that tasks are suggested in a logical order to build a shippable pallet.</p>
<p>Key drawback is that system cannot be configured to build mixed pallets or even single item pallets to different customer specifications.</p>	<p>Without custom logic, it is still not possible to create mixed item pallets built to specific height, or to determine order in which items need to be placed on a pallet, in order to build a stable pallet for shipping.</p>	<p>Lastly, a shipping label is printed for each pallet instead of a pick slip for the order. A large mixed order may consist of multiple shipping labels, with pick by label LPNs. Picker scans the LPN and is directed in sequence to all picking tasks to build the pallet.</p>

How it Works → Case Picking Solution



Case Picking → Benefits to Customer

- Speed up Pick – Manifest – Ship process by directing pickers through an optimal route of picking multiple orders and dropping all at correct manifest station.
- Systematically identify banding opportunities to reduce parcel shipping costs.
- Eliminate printed pick slips, by dispatching parcel tasks directly to picker

Need for Solution / Support in Vanilla e-Business Suite

R11.5.10 Support	R12.1 Support	Inyxa Case Picking Solution
<p>Offers bulk picking functionality to create a single pick when multiple orders for different customers require same item.</p>	<p>High Volume Case Picking feature in R12.1 allows the operator to affix all of the labels at once onto all cases that have the same source & destination; so the operator enters the information only once.</p>	<p>The solution provides maximum benefit for customers that use the same warehouse for picking LTL / TL and parcel shipments and do not have significant investment in conveyors for their parcel pick line.</p>
<p>If ship confirming from WMS mobile device, user must affix label on a case, enter pick information, scan label and then confirm.</p>	<p>In a single task window, an operator is asked to scan all, one after another. Once complete, the operator confirms once for all case picks and drops the picked items to a pallet or conveyor. In essence, R12.1 High Volume Case Picking feature speeds up the outbound processing by eliminating the need to enter any duplicate information.</p>	<p>The key tenant is to divide Case picks in a pick wave into pallet loads & assign each pallet load a unique pick slip. Care is taken so that no single sales order is divided across more than one pallet.</p>
<p>The process is efficient for a single item/case pick, but it is a time-consuming process to repeat hundreds of times.</p>	<p>This is a good fit for businesses that have automated conveyor equipment, and are not using a 3rd party parcel processing system like a Fedex or UPS terminal.</p>	<p>A custom PARCEL DROP ALL screen allows picker to drop all picked product to the processing line. A pallet report is printed that identifies all banding opportunities on the orders picked for the processor.</p>

How it Works → Pick Wave planning workbench

1

Filter Order lines
Eligible for Pick
Release

Complete Ship Qty

Freight Carrier /
Group / Schedule

Promise / Schedule
Ship Dates

Customer / Ship To

Priority

2

Simulate Pick
Release

Reserve stock for
Pick Release

3

Release Pick Wave
to warehouse.
Restrict amount of
work released

No of Lines

Type of Equipment

Weight by Carrier

Pallets by Carrier

Pallets by Carrier

4

Reporting

1. Orders in Queue
2. Orders Late
3. Pending Work
4. Picker Productivity
5. Suggested Consolidations & Repacks
6. Pick Exception Reporting

Wave Planning → Benefits to Customer

- Prevent excessive locator level reservations by only pick releasing orders for current wave.
- System suggested consolidations and re-packs before pick release, to improve picker productivity.
- Ability to simulate pick wave before actual pick release.

Need for Solution / Support in Vanilla e-Business Suite

R11.5.10 Support	R12.1 Support	Inyxa Wave Solution
<p>Pick waves generated from pick release functionality lack the planning aspects of fulfillment (preview of lines and tasks, expected completion, fill rate and labor needs).</p>	<p>Advanced wave planning functionality in R12.1 significantly adds to the simple planning capabilities available in R11.5.10 control board. R12.1 wave planning dashboard also includes a single Wave Dashboard that allows a warehouse manager to view wave status and drill down to detailed line or task status.</p>	<p>A custom pick release / wave planning workbench that displays orders eligible for pick release.</p>
<p>Sales orders can be released by order number, carrier, scheduled ship date or combination</p>	<p>The exception engine can be configured for specific business case to proactively look for exceptions so that corrective action can be taken.</p>	<p>Ability to select one or more groups of orders. Sort orders based on priority, customer, ship to, carrier etc. Integrate with 3rd party transportation software, to consider only orders that have transportation planned in workbench.</p>
<p>Tasks can be set to Planned, so that after pick release tasks can be manually released to warehouse.</p>	<p>Key drawback of R12.1 advanced wave planning dashboard is that it comes into play only after orders have been pick released, thereby creating reservations to locator / LPN level. Hence orders not released in wave, but pick released, still reserve material down to locator level.</p>	<p>Ability to determine pick wave size by pallets, when Inyxa Cartonization module is also installed.</p>

Advanced Rules Configuration

Locator Capacity

- Forms to hold Pack Configuration per box type & box-types per item pack codes.
 - No of items per Carton
 - No of cartons per Pallet
- Pack code associated with item on receipt and tracked through LPN / Locator attributes
- Locator Capacity set in Locator Attributes, as no. of pallets or cartons
- Custom Capacity Function to correctly resolve available capacity.

Put away and Picking Rules

- Item Categories and Locator Zones used to match up each item to a valid storage locator.
- Non-dedicated pick faces. Putaway rules that automatically assign forward locators for product with high upcoming case picking volume.
- Setup of Half Skid and Less than Layer locators to handle broken skids.
- Consolidation program to auto create move orders for stock in less than ideal locators.

Advanced Rules Configuration → Benefits to Customer

- Customer now able to use Directed put away throughout the warehouse, as system correctly resolves available capacity.
- Non-dedicated pick faces auto assign top 50 items with large number of up-coming picks to forward locators.
- Ability to direct over-sized parts to special over-sized locators designated to hold them.

Need for Solution / Support in Vanilla e-Business Suite

R11.5.10 Support	R12.1 Support	Advanced Rules Package
<p>R11.5.10.2 offers a highly evolved rules engine. A key requirement for directed putaway, is to provide system with exact capacity for each product and each locator .</p>	<p>Rules engine in R12.1 is very similar to the rules engine in R11.5.10 . Correctly modeling capacity for locators remains a key part to get putaway and picking rules to work correctly.</p>	<p>As part of the advanced rules package, Inyxa team will conduct a series of interviews with warehouse personnel to:</p> <ul style="list-style-type: none"> • Determine product categories and locator zones. • Design a custom capacity function that can model the storage requirement. • Create rules and strategies for each product category to achieve warehouse picking and putaway requirements.
<p>Oracle WMS allows business to set capacity of each locator based on Weight, Volume or Quantity. WMS also offers a stub by which a custom capacity function can be written.</p>	<p>If the system cannot determine capacity for a locator, it is not able to determine if a particular product on receiving dock will fit, and this can prevent business from implementing a system directed put away process.</p>	<p>Inyxa’s team of WMS Rules experts have capability in adding new elements to the rules package, creating complex expression rules as well as creating completely custom rules packages.</p>

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Results

- This twelve week WMS re-implementation project was completed on-time and budget.
- A 50% reduction in number of keystrokes necessary for receiving product.
- Substantial speed-up of Pick – Pack – Ship processes by elimination Manual processes used for assigning workload / tasks to pickers.
- Improvement in Inventory Accuracy through implementation of Directed Put away rules.
- Creation of Global Processes that can be deployed in all other Manufacturing & Distribution Warehouses of company

Lessons Learnt

- Don't shy away from extending / customizing Oracle WMS, as each extra keystroke or process can result in substantial cost in increase time & labor when you take no. of transactions into consideration.
- Oracle WMS is highly extendable, through various open interfaces and stubs, MWA personalization framework or simply extending Mobile Screen JAVA classes. Almost all changes done for customer will sustain unchanged through upgrade process.
- Collecting packaging, weight, volume and locator data is the most time consuming part of the project. Plan plenty of time in project for such activity.
- Be very sure of system performance in test system before you agree to go live.

Q & A

More Information

On the web

<http://www.inyxa.com> >> Solutions

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