



Technology Options for Order Selection

Scanning vs. Voice

Using Multiple Technologies to Improve Customer Service

- ▶ Using Voice Selection Technology in Conjunction with Scanning Technology in other activities including Receiving, Put-away, Stocking, Inventory Control and Electronic Proof of Delivery
- ▶ Multiple Technologies Improve PDC's ability to Meet or Exceed Customer Expectations

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Reasons for Choosing Voice

- ▶ Improve accuracy of selection
- ▶ Reduce time to train selectors
- ▶ Many items are non-scannable
- ▶ Scannable items are not consistent in symbologies across multiple vendors
- ▶ Ability to incorporate OSHA approved pallet jack inspection
- ▶ Ability to capture weights and dates
- ▶ Real time tracking of work flow, selection, loading, idle time, etc

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When to Use Voice

- ▶ You need both hands to do your job
- ▶ You need to record additional information – Voice is faster and more accurate than keying by non keyers
- ▶ You work in less than optimal conditions including all temperature zones (-10 to 80)
- ▶ The ergonomics of the task makes scanning slow and inaccurate



System Used for Voice

- ▶ Server – Dell Power Edge 2800, 2 processors, 4 GB RAM, Raid5, Win2003 Server
- ▶ Server Database – SQL Server 2000
- ▶ Software – Lucas Systems VoiceSelect™
- ▶ Wireless LAN – 2.4 GHz RF Wireless LAN, Symbol Backbone (same as current RF receiving, put-away & stocking)
- ▶ Voice unit & Headset – Symbol MC9060S (scan & key punch capable) plus headset

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Meet Jennifer

- ▶ Jennifer is an integral bi-lingual virtual member of the PDC Operations Team



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The Process

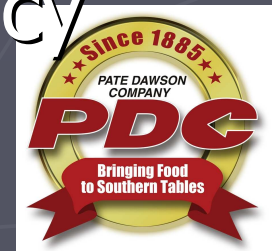
- ▶ Train selector's voice to Jennifer & Jennifer's voice to selector
- ▶ Learn Voice vocabulary and commands
- ▶ Start selection training with Trainer using hand held speaker and monitoring the dialogue between selector and Jennifer
- ▶ Once pallet is completed, the pallet is staged for audit

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The Process - continued

- ▶ Audit process is established in system and varies by individual and/or case value
- ▶ Typical time for new selector to complete the training is less than 4 hours
- ▶ Initial results for new hires are error free selection with low productivity
- ▶ Supervisor can assign selector to single or double pallet jack based on competency



The Process - continued

- ▶ Typically, the selector's voice is retrained to Jennifer after two weeks due to reduced stress, anxiety, etc.
- ▶ Productivity improvements trend upward as selector's pallet building skills and familiarity with the process improve



Management Tools

- ▶ The following three slides illustrate some of the tools used to manage the selection process using Voice technology

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- in
- Route Browser
- Assignments
- Reports Utility
- am
- Users
- Location Manager
- Groups
- Reports
- Productivity
- Stock Slot
- Reports
- Markouts
- Inter Map
- Virtual Zones
- Logout

Assignment Details : 31492

Summary			
Route:	426	Items Picked:	21
No. Pallets:	1	Items Skipped:	0
Pallet ID:	R02	Items Short:	0
Total Items:	21		
Selector:	1771	Status:	Closed

- Place On Hold
- Reset Status
- Release
- Re-Assign
- Change Priority
- Delete
- Print Labels
- Print Sheet

Location	Product	Item Count	Picked	Skipped	Shorts
CB4712	57286 - DRESSING HOMESTYLE RANCH REF	1	1	0	0
CB5812	14484 - CHEESE CHED MILD FEATHER SHRED	1	1	0	0
CB8711	09450 - CUCUMBERS #1 SMALL FANCY	1	1	0	0
CB9611	44757 - JUICE ORANGE CHILLED GABLETOP	3	3	0	0
CC0211	37194 - BOJ LIQUID EGGS BRKFAST BLEND	5	5	0	0
CC2211	08283 - SALAD MIX 80/20(ROM/ICEG)S/CLR	1	1	0	0
CC2512	08286 - LETTUCE SHREDD 1/4 2/2.5LB.	1	1	0	0
CC4111	15790 - MARGARINE LIQUID	4	4	0	0
CC4611	16393 - BOJ COLESLAW CREAMY	2	2	0	0
CD0712	11100 - TOMATO 5X6 LYR LT PNK	2	2	0	0

- in
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Assignments

Selector	Route	Pallets	ItemCount	PalletCube	Start Time	Stop Time	Status
Kenneth Bradstock	330 MU-ROME	D12	50	71.97	9/26/2006 3:49:51 PM		In Progress
Cliff Charles	330 MU-ROME	D11	35	42.59	9/26/2006 3:49:25 PM		In Progress
Candelario Guterrez	330 MU-ROME	D10	49	70.88	9/26/2006 3:47:46 PM		In Progress
Ubaldo Guterrez	330 MU-ROME	D09	49	70.83	9/26/2006 3:46:48 PM		In Progress
Cesar Arjon	330 MU-ROME	F08	31	47.93	9/26/2006 3:45:29 PM		In Progress
Elizandro Gomez	330 MU-ROME	F06, F07	52	81.91	9/26/2006 3:42:53 PM		In Progress
Anthony Forrest	381 MU-JACKSONVILLE, FL	D08, D09	67	95.75	9/26/2006 3:37:57 PM		In Progress
Jonathan McKinney	330 MU-ROME	D07	32	37.47	9/26/2006 3:27:43 PM		In Progress
Jose Castillo	330 MU-ROME	D04, D05	74	97.80	9/26/2006 3:25:41 PM		In Progress
Hector Hernandez	330 MU-ROME	R01	87	60.46	9/26/2006 3:20:20 PM		In Progress
Jorge Contreras	302 MU-VA. BEACH	R01	97	63.84	9/26/2006 3:09:58 PM		In Progress
Linwood Lee	302 MU-VA. BEACH	M01	43	30.66	9/26/2006 3:07:28 PM		In Progress

Reset	Route	Route Name	Pallet	Item Count	Pallet Cube
<input type="checkbox"/>	302	MU-VA. BEACH	D01	47	70.23
<input type="checkbox"/>	302	MU-VA. BEACH	D02	2	7.78
<input type="checkbox"/>	302	MU-VA. BEACH	D03	62	47.88
<input type="checkbox"/>	302	MU-VA. BEACH	D04	44	35.50
<input type="checkbox"/>	302	MU-VA. BEACH	D05	55	70.08
<input type="checkbox"/>	302	MU-VA. BEACH	D06	50	56.25

Create Assignment From Selected Pallets

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ROUTE: 425 (MU-DURHAM/RTP (TRI))

Route 425 (MU-DURHAM/RTP (TRI)) **Assign To Door**
Status **Ship Date** 9/28/2006 12:00:00 AM
Priority **Load Date** 9/28/2006 2:30:00 AM

|

Stop	Customer ID	Customer	Priority	Status
1	16133	BOJ/TRI-ARC/#10 MIAMI BLV	0	Ready
2	16150	BOJ/TRI-ARC/#26 HILLSBORO	0	Ready
3	16141	BOJ/TRI-ARC/#18 BUTNER	0	Ready

Pallet	Priority	Status	Pieces	Selector	Start Time	Stop Time
D01	0	Complete	72	Jonathan McKinney	9/27/2006 8:53:09 PM	
D02	0	Complete	67	Linwood Lee	9/27/2006 8:57:23 PM	
D03	0	Complete	3	Ubaldo Guterrez	9/27/2006 8:58:58 PM	
D04	0	Complete	64	Fortunato Hernandez	9/27/2006 9:00:19 PM	
D05	0	In Progress	83	Raymundo Castillo	9/27/2006 9:04:58 PM	
D06	0	Complete	25	Jose Castillo	9/27/2006 9:11:33 PM	
D07	0	In Progress	72	Jonathan McKinney	9/27/2006 9:28:52 PM	
D08	0	Complete	70	Cliff Charles	9/27/2006 9:24:01 PM	
D09	0	Complete	10	Emilio Martinez	9/27/2006 9:31:46 PM	
F01	0	In Progress	66	Jorge Angeles	9/27/2006 9:02:16 PM	
F02	0	In Progress	30	Jorge Angeles	9/27/2006 9:02:16 PM	
F03	0	Complete	55	Ricardo Gomez	9/27/2006 9:13:13 PM	

The Results

- ▶ Error rate before Voice = >1 per 1,000 cases
- ▶ Error rate after Voice = <1 per 10,000 cases
- ▶ Thru put before Voice = 125 cpmh
- ▶ Thru put after Voice = 125 cpmh
- ▶ Reduction in warehouse clerical staff after voice
- ▶ Jennifer reduces travel time by directing selectors to closest label printer in warehouse

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Next Steps

- ▶ Voice directed loading
- ▶ Voice directed returns
- ▶ Opportunities to expand use of Voice are only limited by our thought process

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Time for Questions

▶ Thank you

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