

## Transforming the Wireless Handset and Accessory Supply Chains

**Scott Searls**  
**Alltel Wireless**  
[Scott.Searls@alltel.com](mailto:Scott.Searls@alltel.com)

### **EXECUTIVE SUMMARY** **Organizational Structure**

#### **ORGANIZATIONAL STRUCTURE**

The Procurement and Logistics Group (PLG) provides centralized end-to-end supply chain services including, strategic sourcing, demand management, forward and reverse logistics, repair, construction and warehouse management. The organization manages \$4.5 billion of supply of cellular handsets & accessories, network & IT technologies and solutions, telecom services and expense commodities. The group is comprised of 175 employees, led by Scott Searls, Senior Vice President.

In 2004 it became clear that the business was financially suffering under a complex, disjointed and slow handset supply network and was losing purchasing leverage against the large global cellular handset manufacturers as well as operational efficiency. The vision was to create an organization that could address all elements of operational supply performance and generate significant financial improvement.

PLG focused on the journey of consolidating and centralizing all of the supply chain functions that are created throughout the lifecycle of a handset or accessory. These elements include sourcing, deal-making, supplier performance and relationship management (including demand and order management) and distribution and logistics (including supplier quality, return, repair and reverse logistics) into one full-stream supply management organization. The organizational structure was constantly evolved as new accountabilities were added. Centralization allowed for supply chain simplification – which created leverage and lowered the total delivered cost per unit, increased availability while increasing inventory velocity and customer satisfaction, and ultimately led to best in class operational performance.

#### **OVERVIEW**

The initial organization was formed as a traditional purchasing group to execute contracts, place orders and manage deliveries of cell phones and accessories from the suppliers to the retail stores (exhibit 1). By 2005 the team had demonstrated improvements in order management and began to take on an expanded role by performing tasks that were either missing or improving processes – all of which allowed related functions to be swept in. The organization evolved in scope by:

- Hiring new leaders to build trust, alignment, and chemistry between all the organizations that impacted sourcing decisions. Team members were chosen based on professional expertise, ability to collaborate, be deal-makers, build teams and manage with metrics.
- Launch a supplier quarterly scorecard and supplier management process that created a “total-cost” approach to decision making and placed the organization into the earliest moments of the supplier selection process. Detailed supplier management allowed for significant purchasing leverage as volume was concentrated with three strategic suppliers resulting in a lower cost per phone (exhibit 2), resulting in significant reductions in purchase prices (exhibit 3)
- Collapse the warehousing and forward distribution into the organization – this also allowed for supply chain simplification as warehouses were reduced from 14 to 2 (exhibit 4), reducing cost per line and doubling inventory turns. (exhibit 5)
- Collect and collapse all the elements of the reverse logistic functions, including return, repair and warranty as well as fulfillment of repaired and certified phones for handset insurance claims. This action created full stream visibility of inventory and ensured 3PL providers were managed through a supplier quality management program.(exhibit 6) This created the platform for centralizing triage, eliminating supply legs (exhibit 7), lowering repair cost and obtaining significantly better visibility (exhibit 8). Other benefits included significantly shortened DOA intervals allowing for much more rapid defect identification, lower inventories,

increased customer service and allowed for new programs (like exchange by mail) to be launched (exhibit 9)

- Created a low-cost region sourcing team accountable for cost and availability of accessories. The team was formed in Shanghai China and direct-sourced accessories throughout Asia -- eliminating up to four layers of suppliers and reducing cost up to 54% (exhibit 10).
- Total lifetime value analysis was applied allowing for better handset selection and promotional planning (exhibit 11) and enhanced replenishment algorithms were employed to increase inventory velocity (exhibit 12).

## **LEADERSHIP**

PLG continually looked at all of the elements that touched or were related to the total operational and financial flow of handsets; including suppliers and supply chain management and the reverse logistics / return process and persuaded Alltel leadership that the business could be improved if these functions were combined and integrated into one full-stream supply organization. The organization and its accountabilities grew over time as well as the influence PLG had on handset selection and promotional planning.

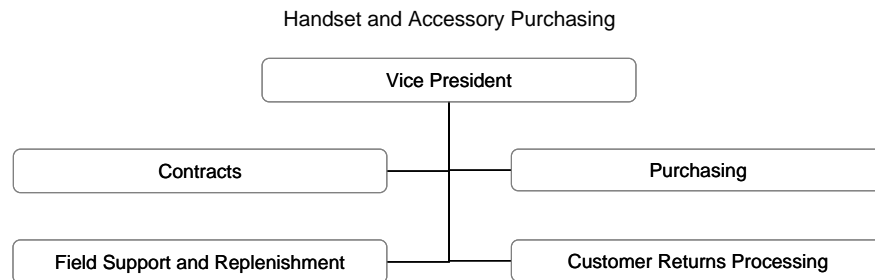
## **VALIDATION OF RESULTS**

- Three times more products are available with limited stock-outs and inventory turns at industry best-in-class levels (Exhibit 5).
- 54% reduction in accessory cost of goods sold, leading to a 15% increase in product margins. (exhibit 10)
- Distribution center costs decreased by more than 50% (exhibit 5).
- Consolidation of reverse logistics and process improvements yielded \$500,000 to \$1,000,000 per week in expense reductions.
- Implementation of total cost of ownership has allowed repair costs to be identified and shifted back to the OEMs. (exhibit 8)
- Interval for customer returned product reduced from 70 days to 5 days. (Exhibit 9)
- Internal business partner satisfaction ratings continue to improve year over year. Most recent results show an improvement from an all time low of 75% in 2006 to a current score of 90.3%.
- Since 2005, Alltel's Customer Net Promoter Score has improved and increased by more than 20 points, the largest increase of any U.S. wireless carrier. No other wireless carrier in the industry has the momentum and improvement that Alltel has experienced over the past eight quarters (Exhibit 13).

## **NEXT STEPS**

- Improve processes and procedures as the complexity of Alltel's business increases. These include:
  - Increasing the number of product offerings for both handsets and accessories.
  - Constantly reviewing inventory policies to ensure product is appropriately distributed to minimize retail stock-outs yet increase inventory velocity.
  - Aiding suppliers that use Alltel's rapid feedback mechanisms as benchmarks in their defect diagnosis. Handset manufacturers prioritize Alltel product launches based on this data to determine how their products will perform in mass markets -- a true competitive advantage.

Exhibit 1 – Original State (circa 2004)



Contracts – led contract negotiations; resolved contract compliance issues; oversaw day to day relationship issues with suppliers

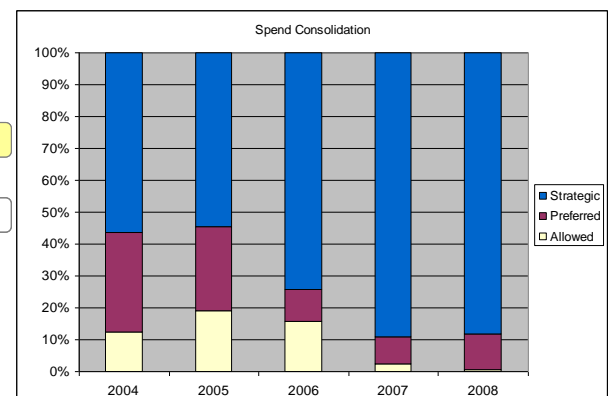
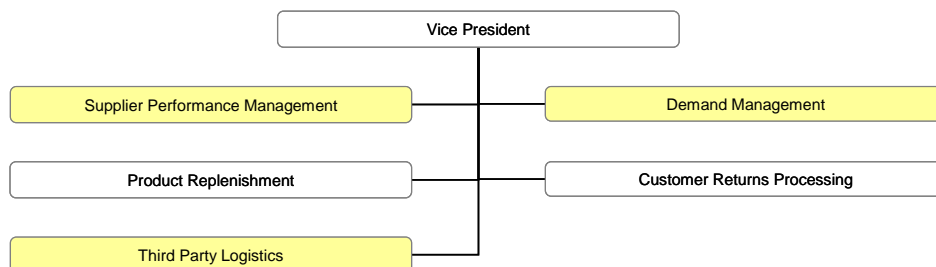
Purchasing – oversaw forecasting process with suppliers; placed purchase orders; managed flow of inventory

Field Support & Fulfillment – supported retail stores with product replenishment

Customer Returns Processing – return center for customer returns within 30 days of purchase; sorted and shipped back to original equipment manufacturer

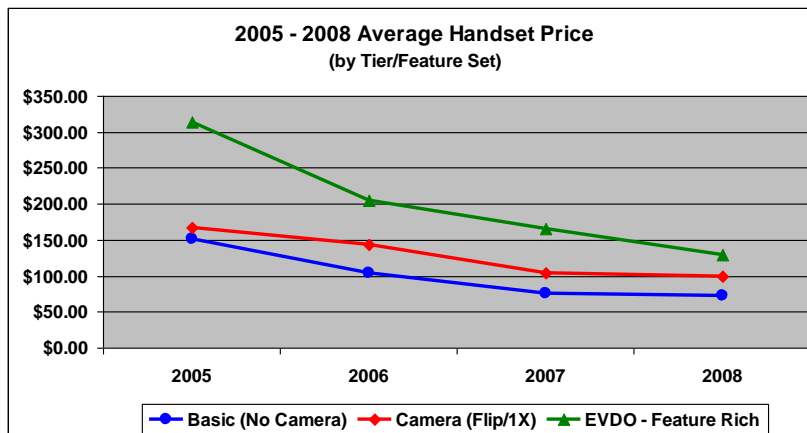
Exhibit 2 – circa 2005

Handset and Accessory Supplier Management



**Spend was concentrated on 3 global OEMs resulting in purchasing leverage and improved supply relationship.**

Exhibit 3 – Average Handset Price

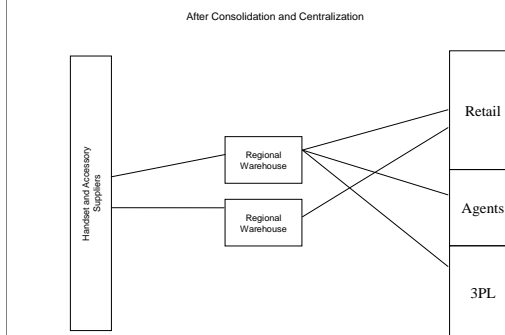
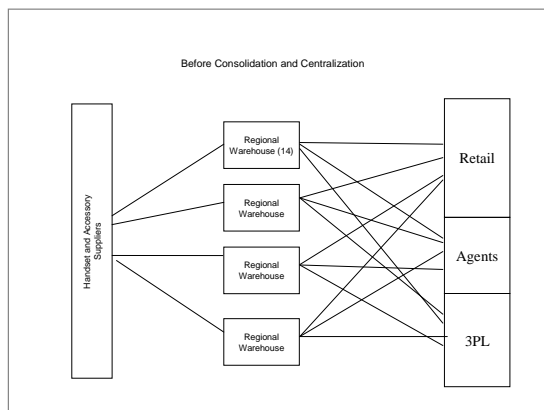
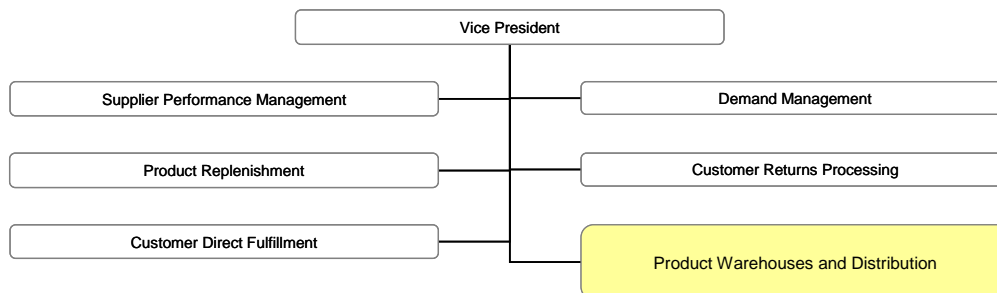


Through leveraged and improved relationships, average price of all device tiers has consistently been

Exhibit 4 – circa 2006

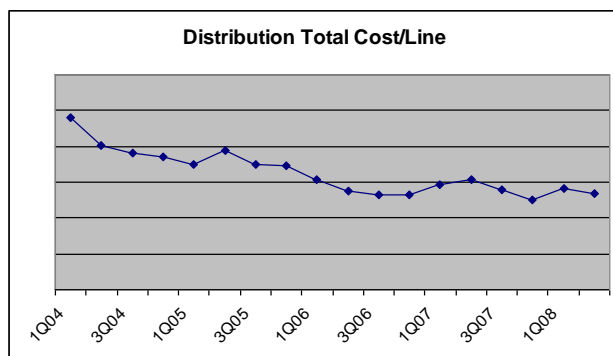
Organization expanded to include distribution centers and ownership of the customer direct fulfillment process.

#### Handset and Accessory Supplier Management & Distribution

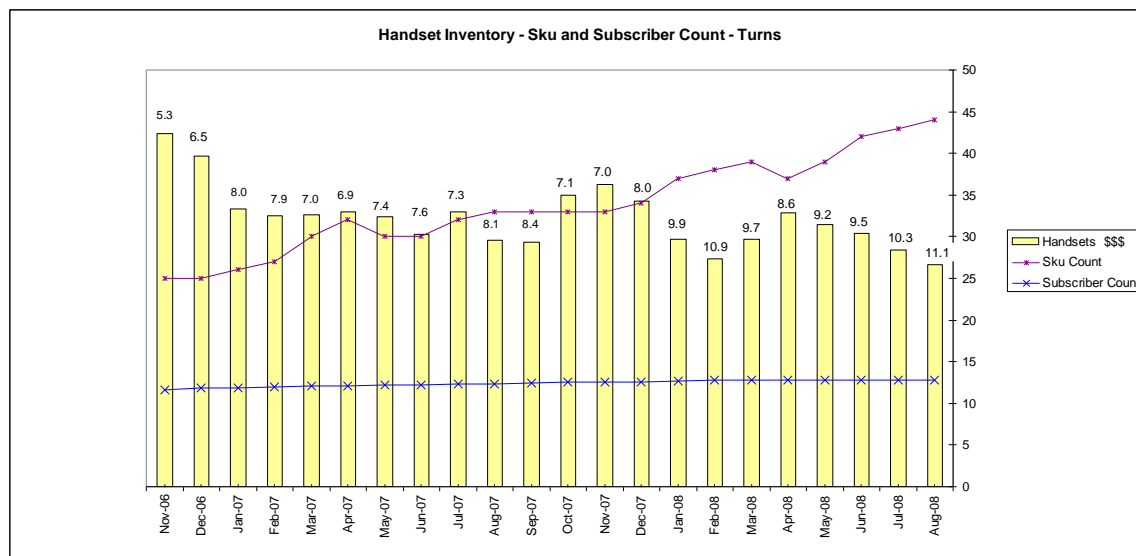


Transformation of the Forward Logistics Process brought supply chain simplicity, operating efficiencies and improved inventory turns.

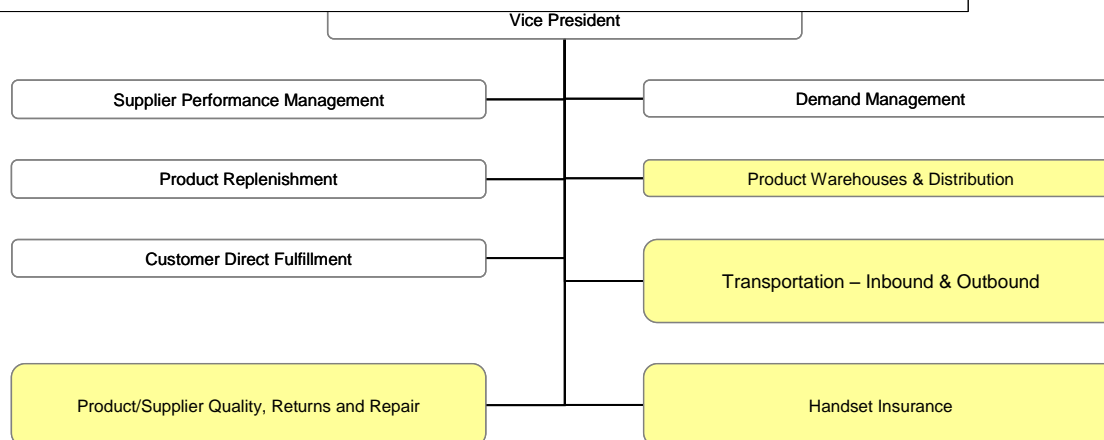
Exhibit 5



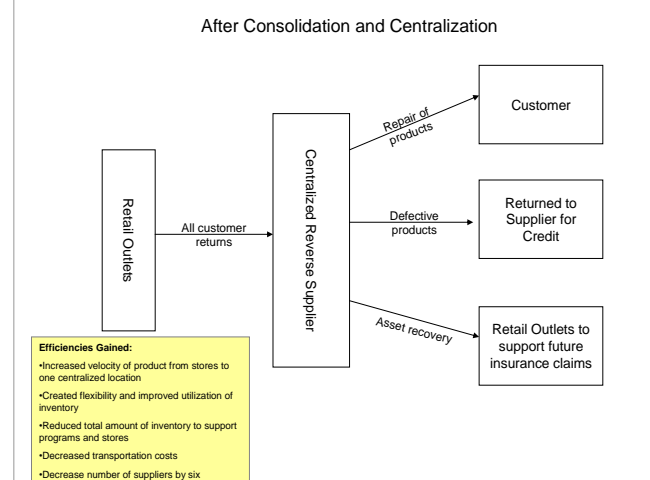
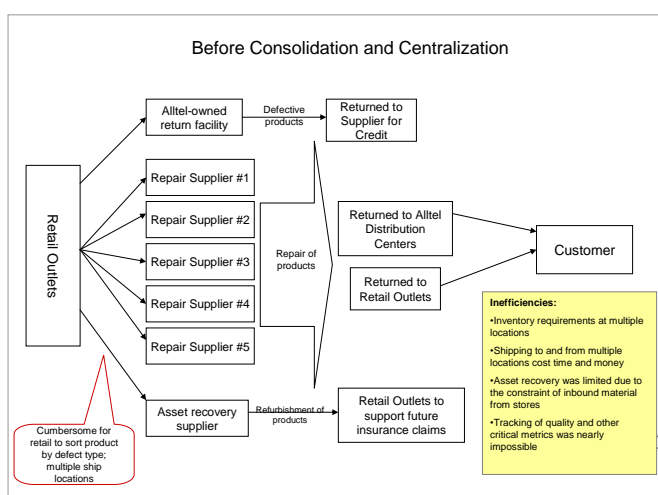
Converting the two distribution centers allowed for economies of scale.

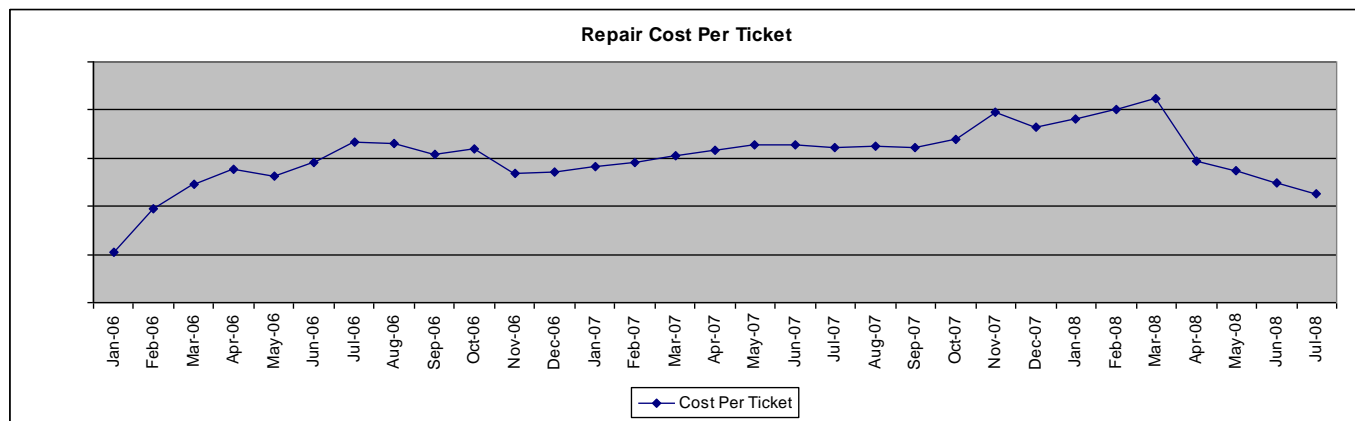


Through revised replenishment algorithms and more strictly controlled ordering and inventory management processes, turns consistently improved in '08 despite increase in number of part numbers.



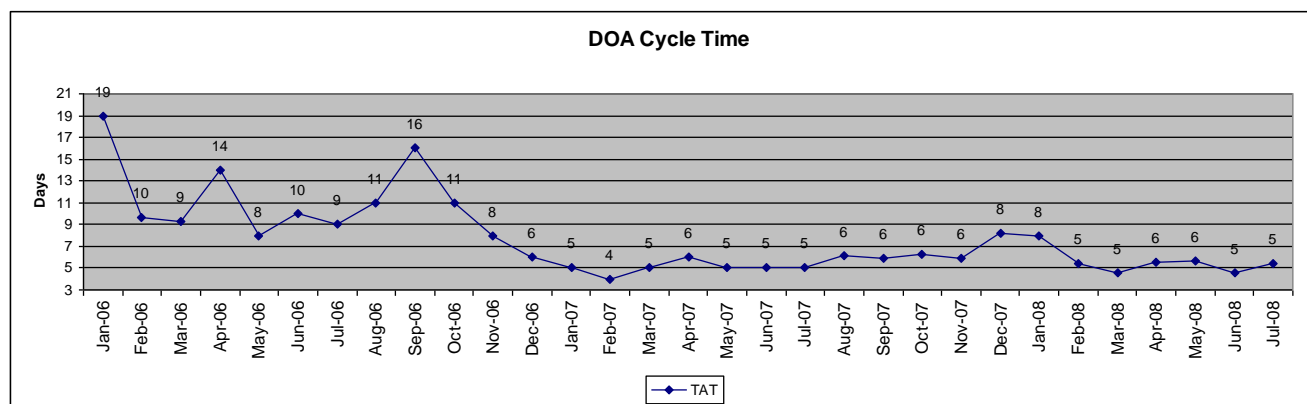
**Exhibit 7 – Before and After Reverse Logistics Centralization**





**Alltel's cost to repair dropped as process improvements allowed for more costs to be shifted back to the OEM.**

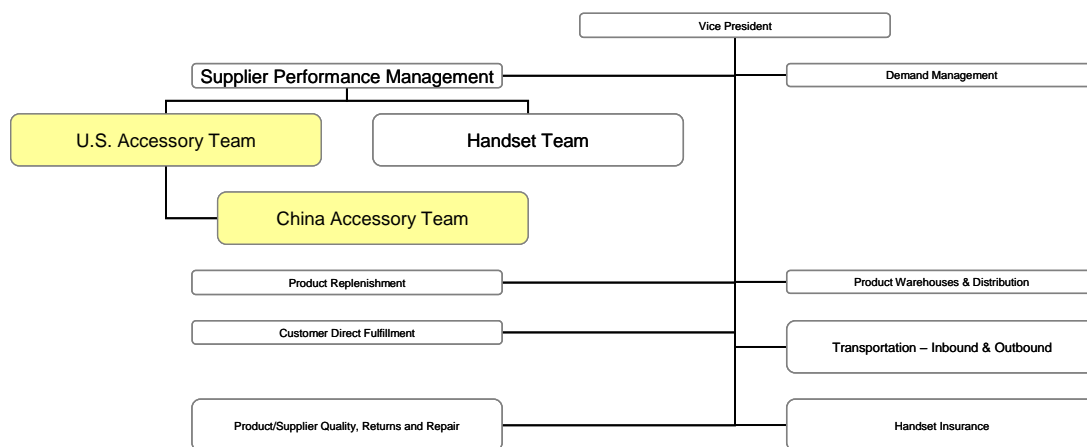
Exhibit 9



**Reduced cycle time allowed for earlier defect identification and resolution as well increased velocity of warranty reimbursement.**

Exhibit 10 – 3Q06

### Handset and Accessory Supplier Chain Management



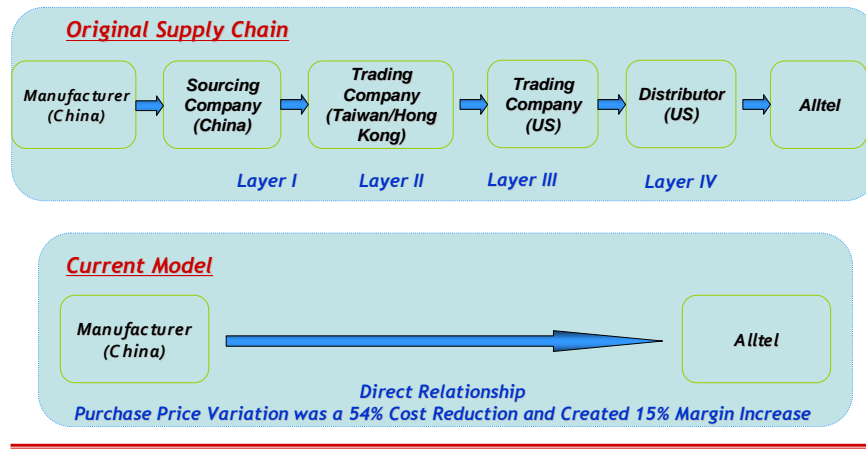
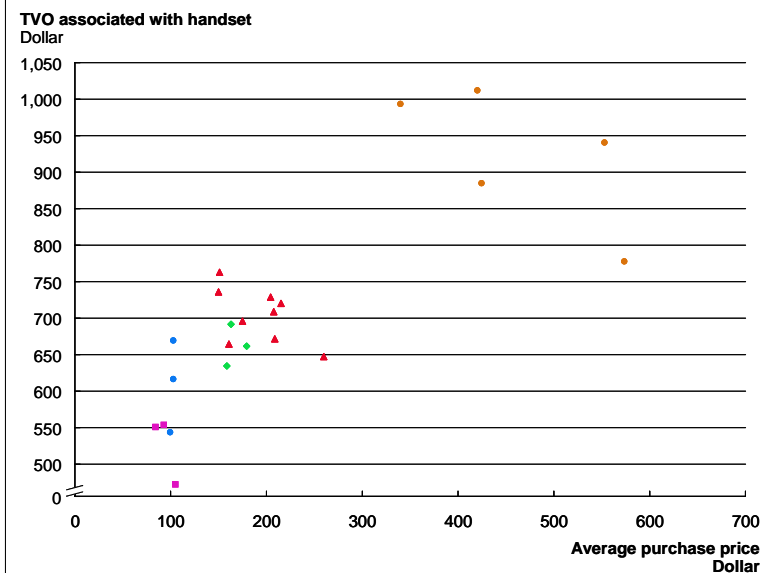


Exhibit 11

COMBINING COST AND REVENUE ASSOCIATED WITH HANDSETS DEMONSTRATED VARIABILITY IN TVO WITHIN EVERY TIER



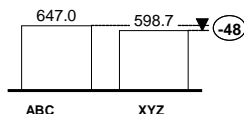
Tracking lifetime revenue against cost helped identify and eliminate costly devices and advertise / promote financially productive devices.

Device Selection – Example of decision support slide used to show which handsets to advertise

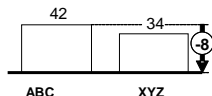
## Supplier A Model ABC and Supplier B Model XYZ ARE COMPARABLE HANDSETS BUT ABC OFFERS HIGHER TVO

Dollars

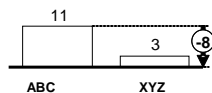
Supplier B XYZ delivers much lower lifetime ARPU . . .



... and has lower insurance revenue than the ABC



Moreover, Supplier B is less aggressive in promoting the device via MDF support



Units Sold ('000)

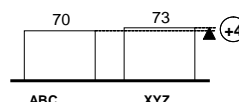
|     |     |
|-----|-----|
| ABC | 356 |
| XYZ | 350 |

The net result of these differences is a \$72 higher lifetime value associated with ABC relative to XYZ

### Lifetime Revenue and Cost

|        |         |       |       |
|--------|---------|-------|-------|
|        | 71.7    | 0.8   | 72.5  |
| better |         |       |       |
| worse  | Revenue | Cost  | TVO   |
| ABC    | 746.3   | 130.3 | 615.9 |
| XYZ    | 674.6   | 131.1 | 543.4 |

Yet, we are NOT promoting ABC: we provide a slightly higher subsidy for XYZ



## Exhibit 12 - Inventory Replenishment Model and Impact



Purchasing and Logistics' Group

## Replenishment Model Changes

### Old Replenishment Model

- Same Model for all devices
- Inventory target of 2WOH in stores
- 2x / week replenishment ordering interval
- No differentiation for transit time from distribution centers to stores
- No capability for stores to order equipment to be sent directly to the customer's premise (customer direct fulfillment - CDF)
- None to limited real time intervention to mitigate stock outs



### New Replenishment Model

- Devices divided into 2 groups for differentiated replenishment.
- Group 1:
  - Promotional handsets, devices with greater demand volatility and high ARPU
  - Inventory target of 2WOH in stores
  - 3x / week replenishment ordering interval for stores more than 2 days away (transit time)
- Group 2
  - Non promotional devices at the end of their lifecycle with low ARPU and/or low demand volatility
  - Inventory target of 1WOH in stores
  - 3x / week replenishment ordering intervals
- Capability for stores to order equipment to be sent directly to the customer's premise (customer direct fulfillment - CDF)
- Real-time intervention mitigation process in place

New Algorithms were employed to increase INVENTORY VELOCITY



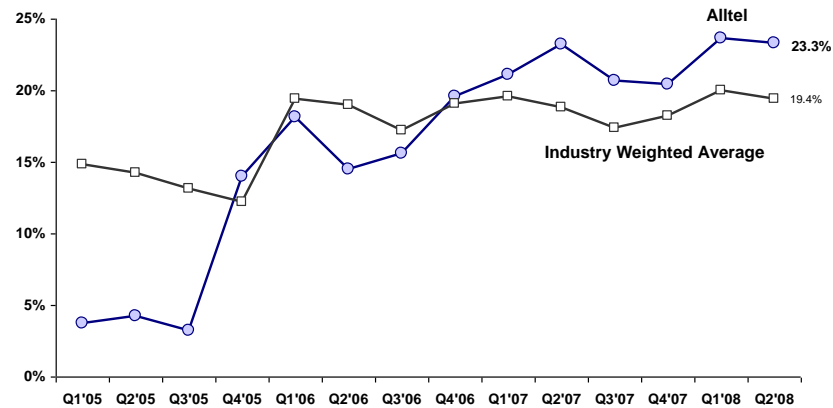
# Exhibit 13 – Customer Net Promoter Score



## NET PROMOTER SCORE

**We have achieved industry best NPS growth and have now been above the industry average for 7 straight quarters**

### NET PROMOTER SCORE



Source: Telephia Audience and Behavior Survey

Alltel Company Confidential - Not For External Release