

# Brio Case Study

## Computer Manufacturing

**DAMAN**  
CONSULTING



# The Opportunity

**Problem:** Company growth by Acquisitions has generated the need for a consolidated view of the company. Non-integrated systems were causing discrepancies in data definitions and disparate data marts across the company.

**Resolution:** Build an integrated warehousing solution by consolidating North America acquisition and delivery of reports. The end result is improved data consistency, decreased costs associated with managing multiple sources of data, and improved usability by introducing standard data definitions

# The Team

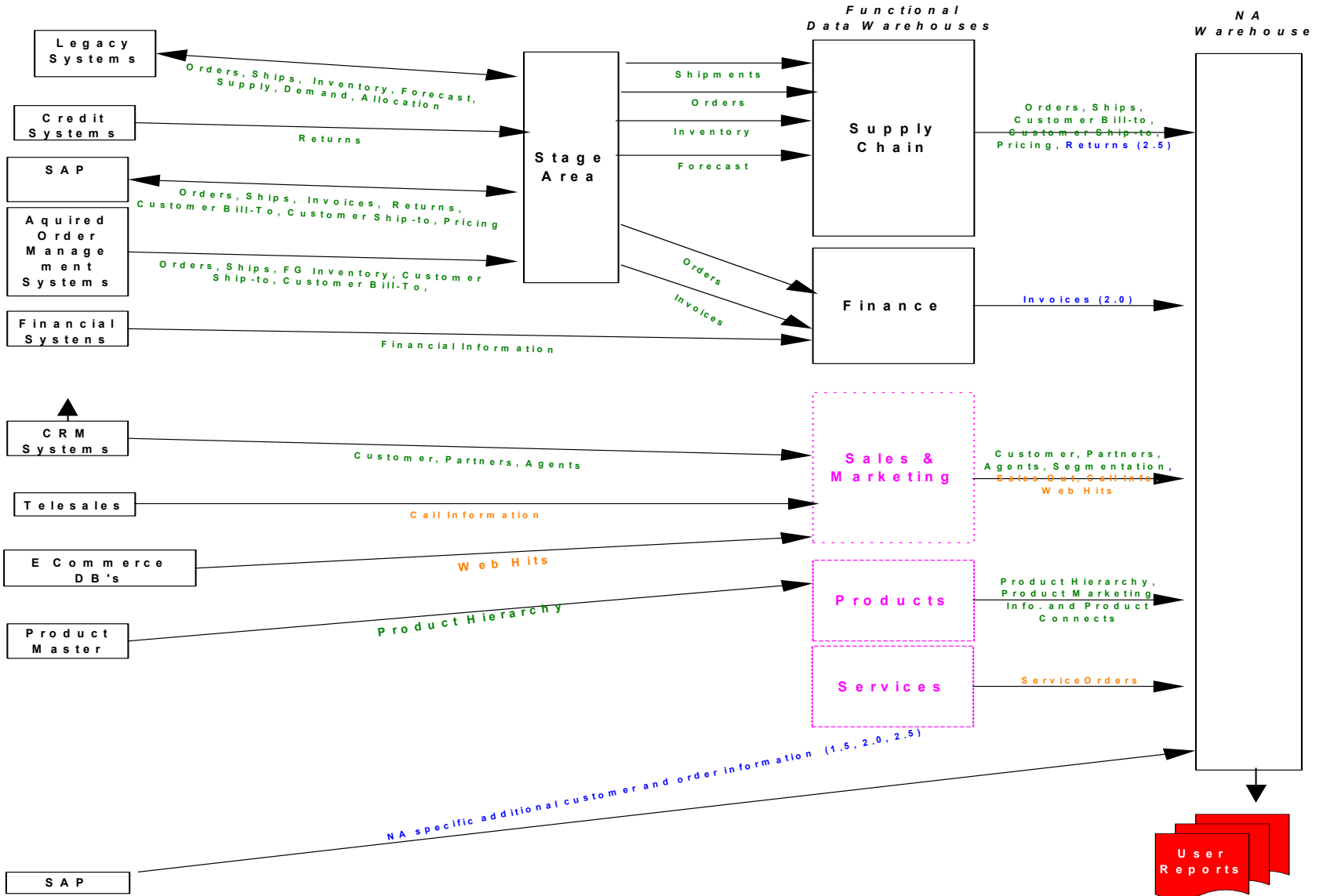
**Business Analysts:** Responsible for identifying subject areas of interest, documenting and analyzing the requirements, and an in-depth knowledge of source systems.

**Back Room:** Acquire the data from source systems, transform, design, and populate the warehouse. (80% work)

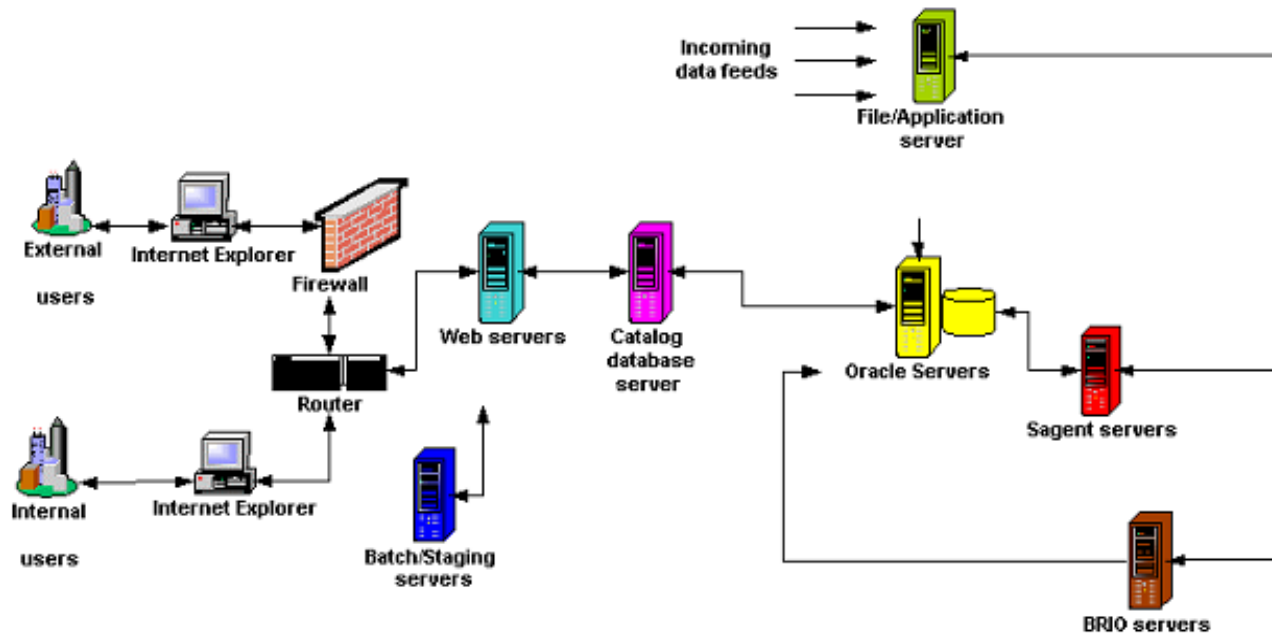
**Front Room:** Design the delivery method for end user access and develop all metrics.

**Support:** Take ownership at each release of the warehouse to allow un-interrupted development.

# Information Architecture




# Technical Architecture




## MAP: Server Type

 Web reporting and infrastructure


 Database


 File/Application incoming load files and secondary load progression

 ETL, Sagent, Data Stage, DTS extract, transformation and data loading  
OLAP multi-dimensional loading

 Batch/Staging

 ASHWIN job scheduling

 BRIO ad-hoc and batch reporting

 Catalog database

(Failover Servers)

# Report Delivery Goals

**ALL FROM THE WEB!**

<b>Simple</b>	Easy Navigation	Detailed Help Sections	Easy to Support
<b>Somewhat Simple</b>	Download	Drill Down	User Uploaded limits
<b>Not Very Simple</b>	Expose Metadata	Access to Historical Reports	Multiple Sources w/in a Report

# Design

## Multi-dimensional Model

Reflects the way The Business Thinks

Represents a Discrete Process

Conformed Dimensions (see across Processes)

Surrogate Keys used for performance

Denormalized Dimensions

# Design User View

Customer Requested Receipt Date Dim  
Cust Req Rcpt Century Year

Customer Requested Ship Date Dim  
Cust Req Ship Century Year

Order Entry Date Dim  
Ord Entry Century Year

Scheduled Customer Receipt Date Dim  
Sch Cust Rcpt Century Year

Scheduled Ship Date Dim  
Sch Ship Century Year

Program Type Dim  
Program Type Code

Ship Condition Dim  
Ship Condition Code

Sales Order Category Dim  
Sales Order Line Category Code

Sales Order Type Dim  
Included In Explorer Flag

Sales Order Source Dim  
Sales Order Source Code

Sales Order Line Item Fact  
Actual Sales Order Line Number  
Back Order Quantity  
Bench Hold In Date  
Bench Hold Out Date  
Bench Hold Quantity  
Business Segment Code  
Cancel Reason Code  
Cancel Reason Description  
Canceled Order Quantity  
Closed Order Quantity  
Configuration Hold In Date  
Configuration Hold Out Date  
Configuration Identifier  
Configure To Order Unit Price  
Cost Center Code  
Credit Approval Date  
Credit Hold Date  
Credit Hold Quantity  
Currency Type  
Current Scheduled Ship Past Due Days  
Current Scheduled Ship Past Due Quantity  
Customer Contract Identifier  
Customer Government Account Number  
Customer Purchase Order Date  
Customer Purchase Order External Line Number  
Customer Purchase Order Number  
Customer Requested Receipt Future Order Days  
Customer Requested Receipt Future Order Quantity  
Customer Requested Receipt Past Due Days  
Customer Requested Receipt Past Due Quantity  
Customer Requested Ship Future Order Days  
Customer Requested Ship Future Order Quantity  
Customer Requested Ship Past Due Days  
Customer Requested Ship Past Due Quantity  
Delivery Block Date  
Delivery Block Quantity  
Direct Ship Eligibility Requested Code  
Direct Ship Purchase Order Line Number

Product Hier Dim  
Product Category Group Description

Order Line Product Hier Dim  
Ord Ln Prod Catg Grp Desc

Direct Ship Plant Dim  
Direct Ship Plant Cd

Peg Plant Dim  
Peg Plant Cd

Pick Plant Dim  
Pick Plant Cd

Product Lifecycle Dim  
Forecast Organization Unit Code

Product Rel Type Dim  
Product Relationship Type

Ship From Plant Dim  
Ship From Plant Cd

Sales Order Method Dim  
Sales Order Method Code

Sales Organization Hierarchy Dim  
Forecast Organization Unit Code



# Easy to Navigate

**Managed Reporting via Controls**  
– serves multiple organizations  
easily

North America Open Orders Summary

Order Data By: Product Group

Time Period: Monthly

Sales Region: All, Canada, Central, East Coast, Midwest, Northeast, Southwest

Product Group: All, Commercial Products, Consumer Group, Customer Services Group, Enterprise Group, PC Group, Server Group

Product Type: All, Options, Units

Generate Report | Drill Analysis | History | Graphs | Help | Download

**One Click Functionality**

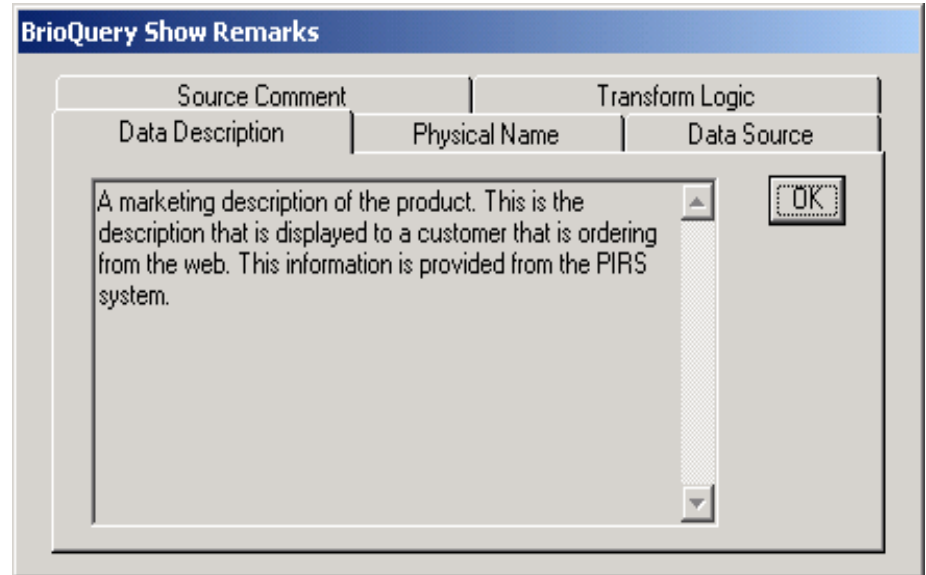
- \* No Graphs/Results sets/Tables, etc.
- \* Minimal Java Script. Re-use script across Reports.

# Metadata

**Goal #1:** Provide ad-hoc users visibility to logical Views of Data

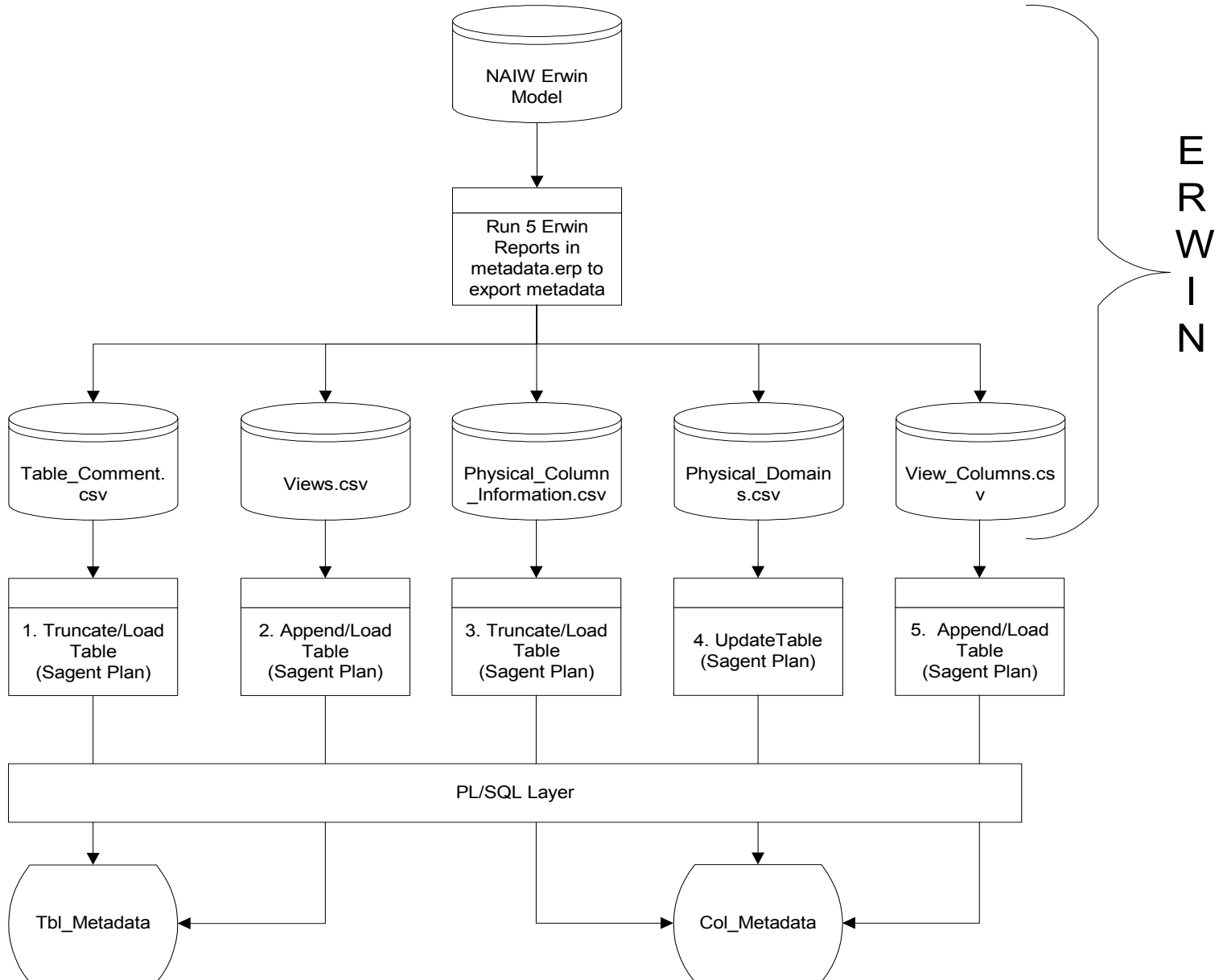
**Goal #2:** Give Users visibility to other attributes that will help them understand the data they are interested in.

Cust\_Dim → Customer Dimension  
Cldr\_Date → Calendar Date  
Sls\_Org\_Cd → Sales Organization Code  
Prod\_Id\_No → Product Identification



# Metadata

## Extraction



# Making Accessible in Brio

Brio has Built in Metadata connectivity via the OCE

**Metadata Definition**

Tables | **Columns** | Joins | Lookup | Remarks

Use Database Defaults  Custom Definition

Meta Data Column Definition

*Physical Column Name	Column Alias
Select COL_METADATA.PHYSICAL_COL_	COL_METADATA.COL_LOGICAL_M
Column Number	*Column Type
	SYS.ALL_TAB_COLUMNS.DATA_T
*Byte Length	Fraction
SYS.ALL_TAB_COLUMNS.DATA_L	
Total Digits	Null Values

From COL\_METADATA,SYS.ALL\_TAB\_COLUMNS

Where [(TABLE = COL\_METADATA.TABLE\_UNDERSCORE\_NAME ) AND (SYS.ALL\_TAB\_COLUMNS.COLUMN\_NAME =

OK  
Cancel  
Reset  
Help

**Brio built in  
Connectivity for:**

**-Tables (used)**

**-Columns (used)**

**-Joins**

**-Lookup**

**-Remarks (used)**

# Download

Download Functionality was critical to end users. Because we wanted the report easy to navigate, we did not want the “unfamiliar” user to have to look for the download functionality on the toolbar. (although, it works just fine but does take 2 clicks to get to).

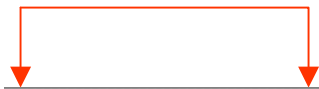
The Brio object model allowed us to call the download functionality via java script and prompt the user to download via the command button.

# Drill Down Functionality

## Hierarchal Drill Down

1. Use Pivot Table Functionality
2. Go to the DB for only the the data needed.
3. Leverage Pre-Defined Drill Paths.

Drill Columns:



		MTD Ship Qty	QTD Ship Qty	Prior Day Ship Qty	CM Req Open Qty	CQTR Req Open Qty
Canada	ABC Storage Group	14	42	0	0	0
	Home Office Group	1	2	0	0	0
	Office Products	851	1,949	0	0	0
	On Line Group	3	10	0	0	0
	PC Group	22	295	0	0	0
Central	ABC Storage Group	14,955	40,071	0	1,837	3,769
	Home Office Group	9,582	20,810	0	3,521	9,661
	Industry Group	1,749	4,768	0	145	846
	Office Products	160,690	477,027	0	5,550	9,104
	On Line Group	261,982	866,747	0	4	323
	PC Group	77,108	185,874	0	1,873	7,498

# Drill Down Functionality

## Bucketing Drill Down

1. Drill Down based on bucketing (not hierarchal)
2. Goes to lowest grain base table
3. Prompt User to limit via javascript and control objects.

The screenshot shows a web application interface with a dark blue background. At the top, the title 'Past Due Sales Order Summary Drill Analysis' is displayed in white. Below the title, there are three dropdown menus for filtering data. The first dropdown is labeled 'Org' and is set to 'Central Region'. The second dropdown is labeled 'Date to Drill' and is set to 'Requested'. The third dropdown is labeled 'Past Due Bucket' and is set to '1- 7 dys'. At the bottom of the interface, there are three buttons: 'Generate Drill Down Report', 'Download', and 'Back to Main'.

Past Due Sales Order Summary Drill Analysis

Org  
Central Region

Date to Drill  
Requested

Past Due Bucket  
1- 7 dys

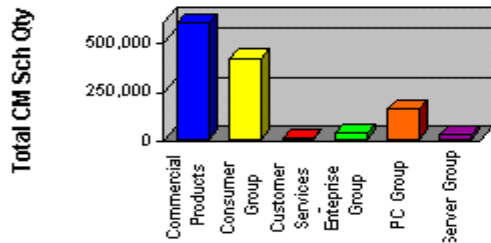
Generate Drill Down Report   Download   Back to Main

# Graphs

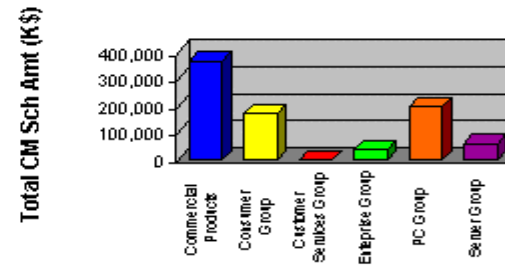
1. The user should define which set of Graphs he would like to see.
2. The parameters that the user selected on the Main Control Page will be applied to the Results section and subsequently in the Graphs.
3. The graphs properties must be set to Hyperlink. This allows the user to link to the section where the Graphs are created and manipulate the graph to his/her liking.

Click Graphs to Edit

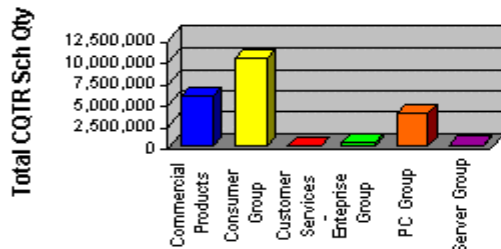
### CM Scheduled Qty



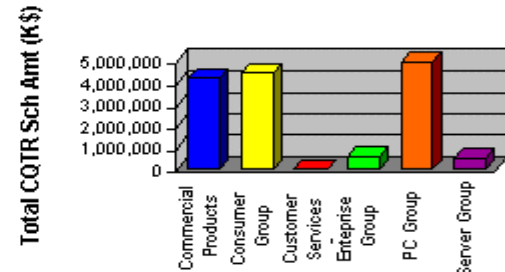
### CM Scheduled Amt



### CQTR Scheduled Qty

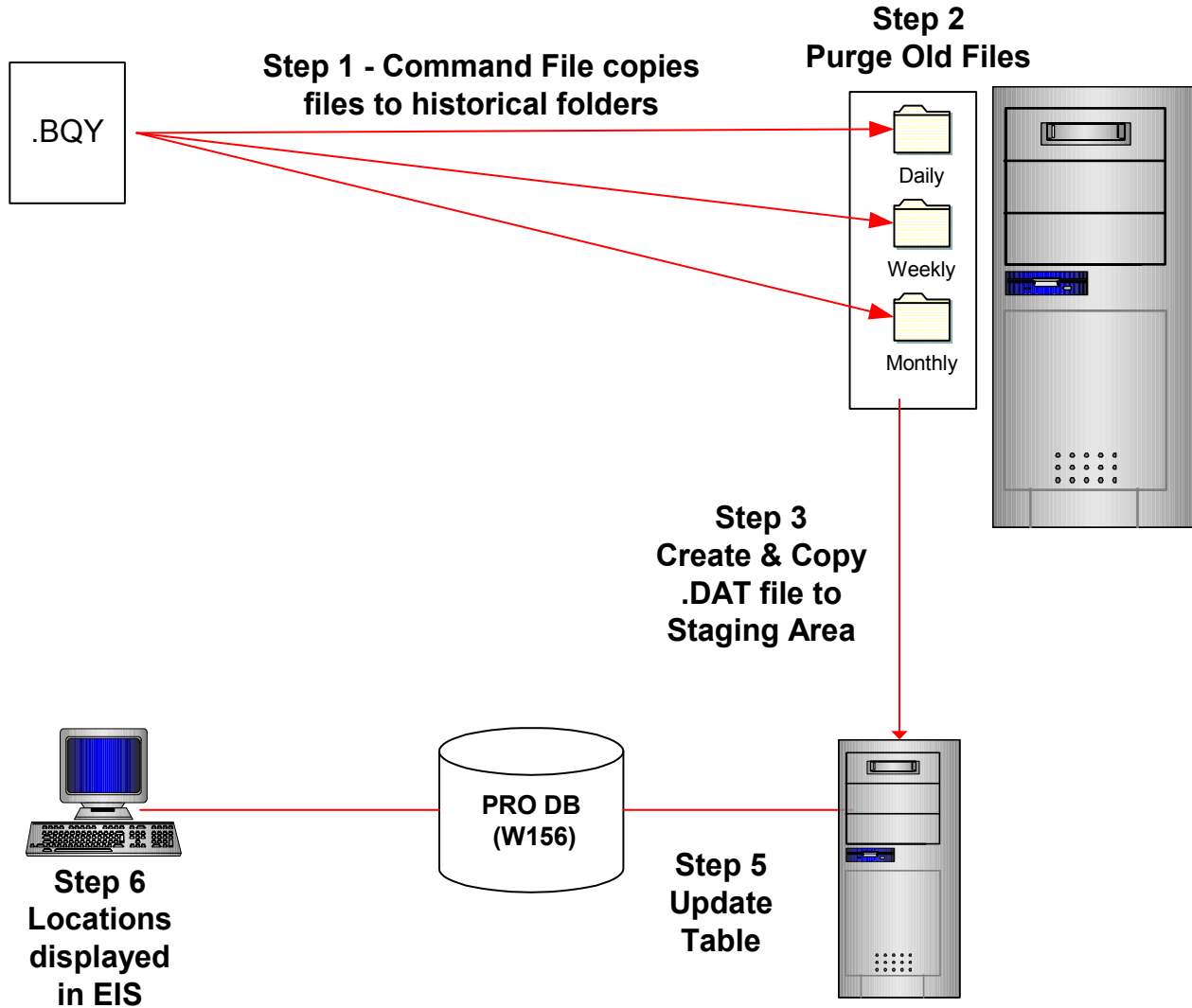


### CQTR Scheduled Amt



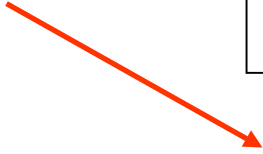


# Tracking Historical Reports



# Accessing Historical Reports

1. Run Query against Archive Table
2. Use Query to populate list boxes
3. Build link from what is selected out to file server.



For Period Ending: 02/26/2001

**North America Open Order Summary**

Open Orders Summary Attributes - Quantity

Group	MTD Ship Qty	QTD Ship Qty	Prior Day Ship Qty	Ship Per Day Avg Qty	CQTR Req Open Qty	FQTR Req Open Qty	Total CQTR Req Qty	Cqtr Req To Go Qty	CQTR Sch Open Qty	FQTR Sch Open Qty	Total CQTR Sch Qty
Home Office Group	22,041	25,147	0	714	9,661	2,889	22,544	1,722	10,747	41,894	160,481
On Line Group	274,461	871,092	0	10,422	331	0	341	-866,426	268,898	134,863	10,210,068
Office Products	297,521	780,758	0	11,309	231,174	87,429	459,754	-316,679	674,571	689,587	5,771,805
ABC Storage Group	31,444	53,741	0	1,075	7,277	358	15,387	-34,029	44,475	39,109	417,268
PC Group	131,414	289,901	0	4,920	39,835	11,001	81,976	-203,600	147,992	108,991	3,813,831
Industry Group	14,249	9,152	0	414	906	6	3,939	-888	1,255	32,648	32,220
	<b>708,840</b>	<b>2,008,166</b>	<b>0</b>	<b>27,129</b>	<b>289,184</b>	<b>101,685</b>	<b>583,941</b>	<b>-1,419,900</b>	<b>1,147,938</b>	<b>884,812</b>	<b>20,405,675</b>

# Help

## North America Past Due Report Help

### Report Definition

The North America Past Due Sales Orders shows past due sales orders based on customer requested ship dates and current scheduled ship dates on orders throughout Compaq's order book. It divides this information based on Product Group/Product Division segmentation or Sales Organization/Reporting Segmentation Dimension level 2. This report reports only revenue type orders. IUR, Service Orders, and other non-revenue types are not included in this report.

### Report Controls

Item	Function
Order By:	Allows for the selection to display the data by either Product Group or Sales Organization for the pivot tables and charts in the report. Product Group will be the default selection.
Data Type:	Allows the report to show data in the form of quantities, amounts or percentages.
Sales Org:	Allows for the selection of one or more sales organizations.
Customer Segmentation Detail	Allows for the report to be generated with Customer Segmentation Detail
Product Group:	Allows for the selection of one or more product groups.
Product Type:	Allows for the selection of one or more product types.
Product Type (level 3) Detail	Allows for the report to be generated with Product Type Level Granularity (level 3)
Generate Report	Updates the report display based on the selections made for Order By, Data Type, Sales Organization, Product Group, and Product Type.
Drill Analysis	Navigates to another version of the report that will allow for drill down capabilities to part number level detail.
History	Navigates to archived versions of this report.
Help	Navigates to a document that explains the report definition, report controls, and definitions of columns.
Download	Navigates to a control page that allows the user to download the results section into a file. Available file types are Excel, Comma Delimited, Text, and HTML.

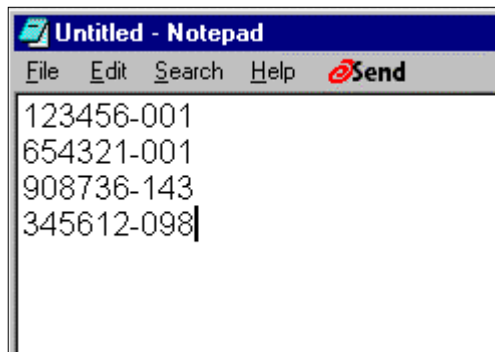
1. One touch access from Main Control Screen
2. Control & Column Definitions
3. Incorporated into Brio "Reports" section.

# Upload List of Values

For Period Ending: 08/02/2001

## Average Order Cycle Time By Part

SKU	Ship Qty	Credit Approval OCT	Order Approval OCT	Configuration OCT	Ship Order OCT	Total OCT
123456-001	5	1.2	3.0	0.8	0.4	5.4
654321-001	8	1.5	2.5	1.1	0.6	5.8
908736-143	10	1.8	3.0	0.6	1.0	6.4
345612-098	53	1.4	2.4	0.9	1.0	5.5
	<b>76</b>	<b>1.4</b>	<b>2.6</b>	<b>0.9</b>	<b>0.8</b>	<b>5.7</b>



1. Provides flexibility in user control over limits.
2. Limit list could be customers/parts/regions/etc.