

Pivot tables/charts

-- Magic Beans Without Living in a Fairy Tale --

Prepared by John Van Wagenen for the
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□ Pivot Tables Answer Questions

When you want to know

*Some
Function
of*

A NUMERIC VARIABLE

BY

Row/Column

WITHIN

Row/Column

and now a word from my sponsor

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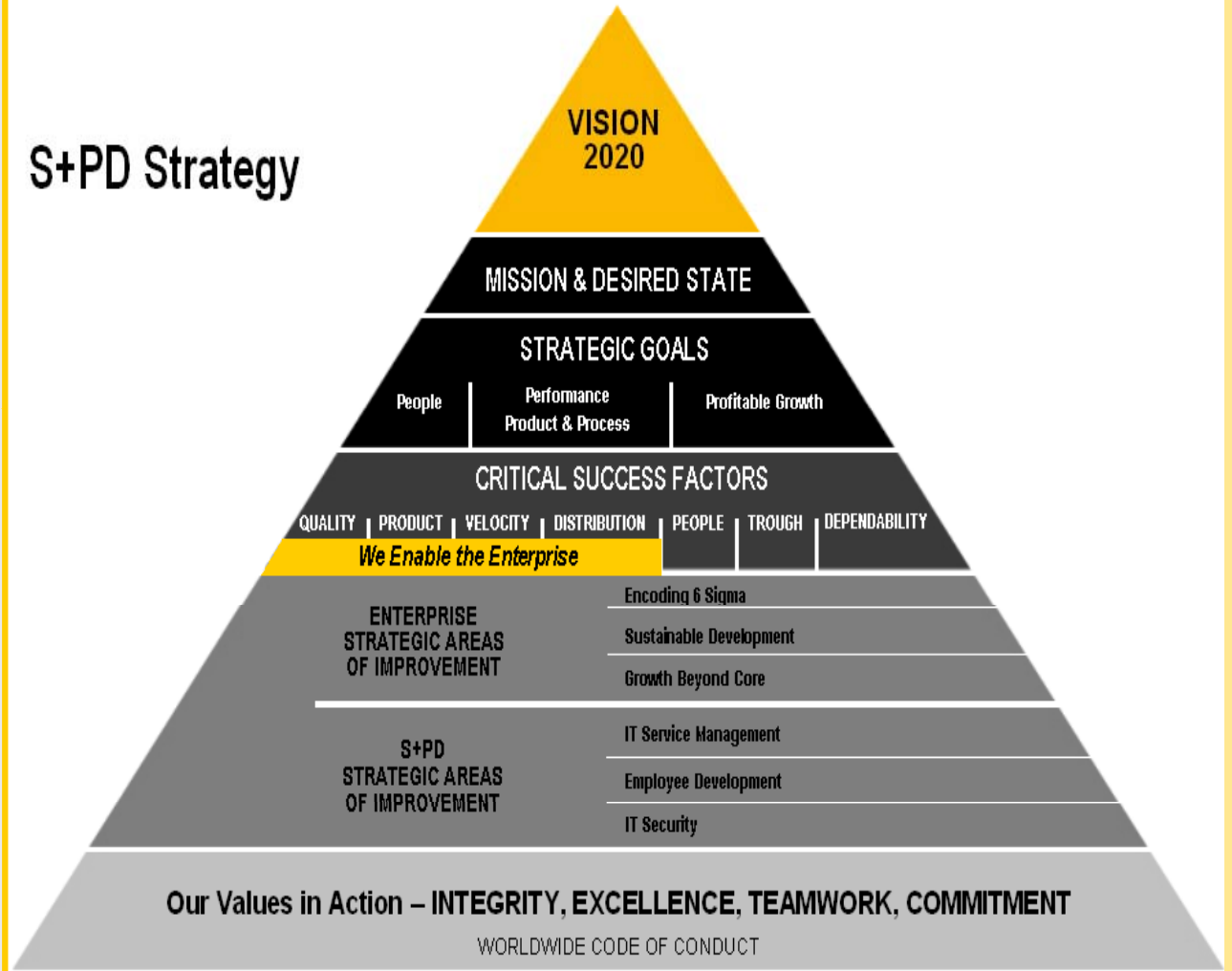
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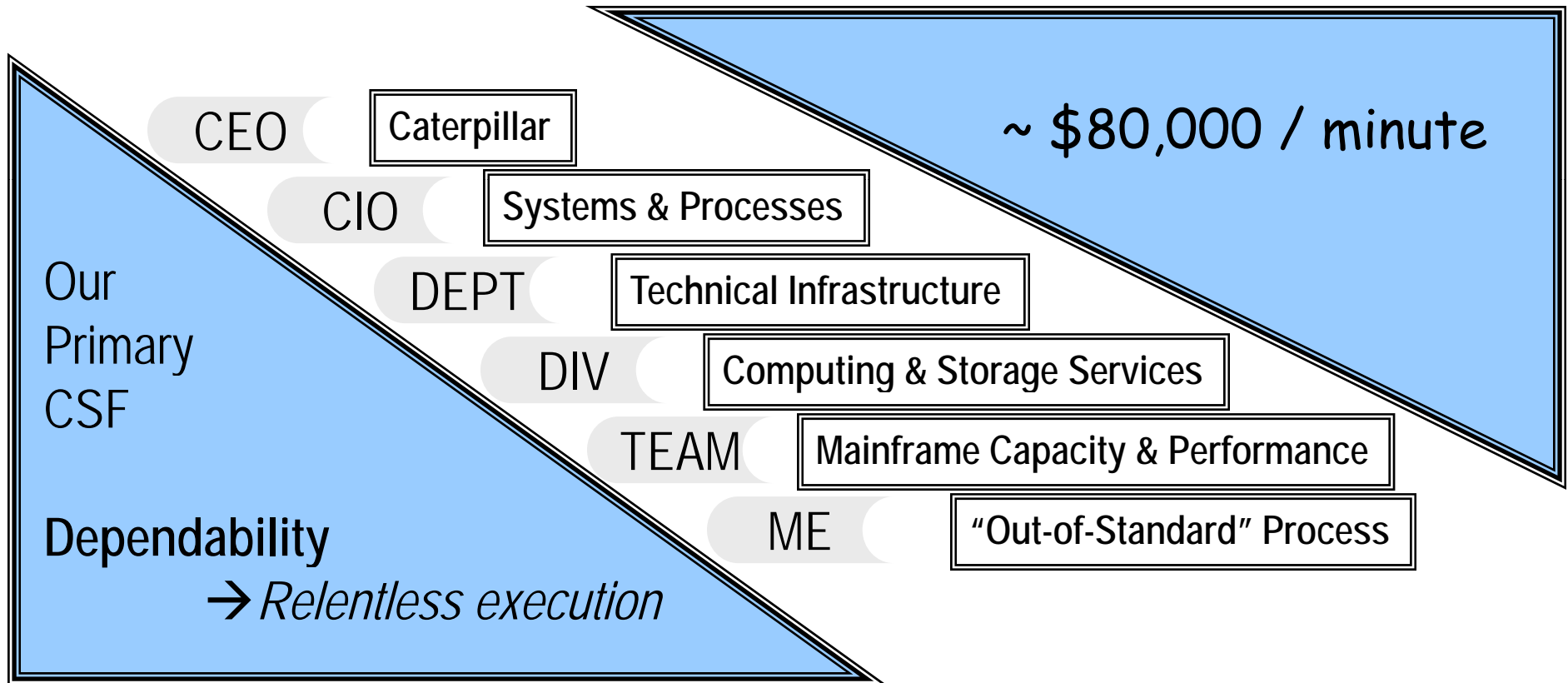
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Speaking Points & Demonstration

- The data model
- Using auto filter
- Creating a pivot table
 - **Demo**
- Creating a pivot table chart
- How to categorize/sub-categorize
- Chart tricks & making data look good
 - **Demo**

The data model

The image displays two screenshots of Microsoft Excel. The top screenshot shows a spreadsheet with data in columns A through O. The bottom screenshot shows the same spreadsheet with column headers added in row 1, labeled 'Machine', 'LPAR', 'Cluster', 'Date', 'Hour', 'Shift', 'User Group', 'Hi Lvl', and 'CPU'. A text box at the bottom of the image contains the text: '1st → put in labels on the top of the data (line 1)'. The status bar at the bottom left of the Excel window shows 'Ready'.

	A	B	C	D	E	F	G	H	L	M	N	O
1	313	SYA	C	7/1/2004	7	PRIME	APPLOTHR	APOT	0.000234			
2	313	SYA	C	7/1/2004	7	PRIME	CTSAACF2	CTSA	0.000186			
3	313	SYA	C	7/1/2004	7	PRIME	CTSADB2	CTSA	0.216696			
4	313	SYA	C	7/1/2004	7	PRIME	CTSAIMS	CTSA	0.000047			
5	313	SYA	C	7/1/2004	7	PRIME	CTSANETW	CTSA	0.008539			
6	313	SYA	C	7/1/2004	7	PRIME	CTSAOTHR	CTSA	0.018847			
7	313	SYA	C	7/1/2004	7	PRIME	CTSAPERF	CTSA	0.004673			
8	313	SYA	C	7/1/2004	7	PRIME	CTSASTOR	CTSA	0.0763			
9	313	SYA	C	7/1/2004	7	PRIME	CTSIATS	CTSI	0.001298			

	A	B	C	D	E	F	G	H	L	M	N
1	Machine	LPAR	Cluster	Date	Hour	Shift	User Group	Hi Lvl	CPU		
2	313	SYA	C	7/1/2004	7	PRIME	APPLOTHR	APOT	0.000234		
3	313	SYA	C	7/1/2004	7	PRIME	CTSAACF2	CTSA	0.000186		
4	313	SYA	C	7/1/2004	7	PRIME	CTSADB2	CTSA	0.216696		
5	313	SYA	C	7/1/2004	7	PRIME	CTSAIMS	CTSA	0.000047		
6	313	SYA	C	7/1/2004	7	PRIME	CTSANETW	CTSA	0.008539		
7	313	SYA	C	7/1/2004	7	PRIME	CTSAOTHR	CTSA	0.018847		
8	313	SYA	C	7/1/2004	7	PRIME	CTSAPERF	CTSA	0.004673		
9									763		

Using auto filter

1) HI-LITE columns

2) Select the DATA dropdown

3) Click FILTER, then click AutoFilter

	A	B	C	F	G	H	L
1	Machine	LPAR	Clus	Shift	User Group	Hi Lvl	CPU
2	313	SYA	C	IME	APLOTTHR	APOT	0.000234
3	313	SYA	C	IME	CTSAACF2	CTSA	0.000186
4	313	SYA	C	IME	CTSADB2	CTSA	0.216696
5	313	SYA	C	IME	CTSAIMS	CTSA	0.000047
6	313	SYA	C	IME	CTSANETW	CTSA	0.008539
7	313	SYA	C	IME	CTSAOTHR	CTSA	0.018847
8	313	SYA	C	IME	CTSA	CTSA	0.004673
9	313	SYA	C	IME	CTSA	CTSA	0.0763
10	313	SYA	C	IME	CTSI	CTSI	0.001298
11	313	SYA	C	IME	CTSI	CTSI	0.0002
12	313	SYA	C	IME	CTSI	CTSI	0.0003
13	313	SYA	C	IME	CTSI	CTSI	0.02253
14	313	SYA	C	IME	CTSI	CTSI	0.00011

4) These arrows will appear

	A	B	C	D	E	F	G	H	L
1	Machin	LPAR	Clust	Date	Hour	Shift	User Group	Hi Lvl	CPU
2	313	SYA	C	7/1/2004	7	PRIME	APLOTTHR	APOT	0.000234
3	313	SYA	C	7/1/2004	7	PRIME	CTSAACF2	CTSA	0.000186

❑ Creating a pivot table (1)

Microsoft Excel - Jul 04 Hi Lvl Summary.xls

File Edit View Insert Format Tools Data Window Help Acrobat

Sort...
Filter
Form...
Subtotals...
Validation...
Table...
Text to Columns...
Consolidate...
Group and Outline
PivotTable and PivotChart Report...

Shift	User Group	Hi Lvl	CPU
IME	APPLOTHR	APOT	0.000234
IME	CTSAACF2	CTSA	0.000186
IME	CTSADB2	CTSA	0.216696
IME	CTSAIMS	CTSA	0.000047
IME	CTSANETW	CTSA	0.008539
IME	CTSAOTHR	CTSA	0.018847
IME	CTSAOTHR	CTSA	0.004673
IME	CTSAOTHR	CTSA	0.0763
IME	CTSAOTHR	CTSI	0.001298
IME	CTSAOTHR	CTSI	0.0002
IME	CTSAOTHR	CTSI	0.0003
IME	CTSAOTHR	CTSI	0.002253
IME	CTSAOTHR	CTSI	0.000011

1) HI-LITE columns

2) Select the DATA dropdown

3) Click Pivot Table and Pivot Chart Report

4) A Wizard popup box will appear as shown →

PivotTable and PivotChart Wizard - Step 1 of 3

Where is the data that you want to analyze?

- Microsoft Excel list or database
- External data source
- Multiple consolidation ranges
- Another PivotTable or PivotChart

What kind of report do you want to create?

- PivotTable
- PivotChart (with PivotTable)

Cancel < Back Next > Finish

5) Click FINISH

❑ Creating a pivot table (2)

The screenshot shows the Microsoft Excel interface with a pivot table layout. The layout is defined by blue borders and contains the following text:

- Row 1: Drop Page Fields Here
- Row 3: Drop Column Fields Here
- Column A: Drop Row Fields Here
- Center: Drop Data Items Here

Annotations and callouts:

- A red arrow points from a text box on the right to the central data area.
- A red arrow points from a text box on the left to the PivotTable toolbar.
- A red arrow points from a text box at the bottom to the 'Sheet2' tab in the worksheet tab bar.

This will become the actual pivot table for all data selected from the spreadsheet

This is the pivot table toolbar. It is used to manipulate data & format

Notice a new worksheet was created

PivotTable	Machine	LPAR	Cluster	Date	Hour
	Shift	User Gr...	Hi Lvl	Facility	System
	Job Name	CPU			

❑ Creating a pivot table (3)

1) Drag the numeric data field into the center of the table

2) Drag category variables to the column or row frames to complete the pivot table

3) Page fields are useful for filtering various views (a horizontal cut of data)

Drop Page Fields Here

Drop Column Fields Here

Drop Row Fields Here

Drop Data Items Here

PivotTable

Machine	LPAR	Cluster	Date	Hour
Shift	User Gr...	Hi Lvl	Facility	System
Job Name	CPU			

□ The resulting pivot table

	A	B	C	D	E	F	G
1	Cluster	(All)					
2							
3	Sum of CPU	Date					
4	Hour	7/1/2004	7/2/2004	7/6/2004	7/7/2004	7/8/2004	Grand Total
5	7	9.966459	10.212464	9.375208	13.484208	10.207328	53.245667
6	8	10.291859	10.295034	10.133815	14.270894	10.741452	55.733054
7	9	10.397373	10.215981	10.284314	12.944914	10.581969	54.424551
8	10	10.675793	11.053814	9.920058	10.473355	10.777272	52.900292
9	11	10.532652	9.346084	10.008667	10.298541	10.388673	50.574617
10	12	10.498956	8.95802	10.268032	10.398462	10.738871	50.862341
11	13	10.466845	9.254696	10.384672	10.893042	10.355002	51.354257
12	14	10.133079	8.557054	10.704495	10.302469	10.36325	50.060347
13	15	10.74432	6.700788	10.29412	10.67218	10.623848	49.035256
14	Grand Total	93.707336	84.593935	91.373381	103.738065	94.777665	468.190382

PivotTable

PivotTable ▾ [Icons]

Machine	LPAR	Cluster	Date	Hour
Shift	User Gr...	Hi Lvl	Facility	System
Job Name	CPU			

Note the toolbar

DEMONSTRATION OF ACTUAL PIVOT TABLES With CPU Performance Data

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❑ Creating a pivot table chart

Where is the data that you want to analyze?

- Microsoft Excel list or database
- External data source
- Multiple consolidation ranges
- Another PivotTable or PivotChart

What kind of report do you want to create?

- PivotTable
- PivotChart (with PivotTable)

1) Click the Pivot Chart radio button and then click Finish

13	313	SYA	C	7/1/2004	7	PRIME	C
14	313	SYA	C	7/1/2004	7	PRIME	C
15	313	SYA	C	7/1/2004	7	PRIME	C

2) You will end up with two new worksheets. The first is a pivot table, the second is a pivot chart. Drag and drop the fields as before in the pivot table.

Drop Page Fields Here

Drop Data Items Here

Drop More Series Fields Here

Series1

Machine	Shift	Job Name	LPAR	User Gr...	CPU	Cluster	HI Lvl	Date	Facility	Hour	System
SAPERF			CTSA				0.004673				
SASTOR			CTSA				0.0763				
SIATS			CTSI				0.001298				
SIALTO			CTSI				0.0000				

Pivot Table

PivotChart

Chart Area

□ Another way to make a chart

	A	B	C	D	E	F	G
1	Cluster	(All)					
2							
3	Sum of CPU	Date					
4	Hour	7/1/2004	7/2/2004	7/6/2004	7/7/2004	7/8/2004	Grand Total
5	7	9.966459	10.212464	9.375208	13.484208	10.207328	53.245667
6	8	10.291859	10.295034	10.133815	14.270894	10.741452	55.733054
7	9	10.397373	10.215981	10.284314	12.944914	10.581969	54.424551
8	10	10.675793	11.053814	9.920058	10.473355	10.777272	52.900292
9	11	10.532652	9.346084	10.008667	10.298541	10.388673	50.574617
10	12	10.498956	8.95802	10.268032	10.398462	10.738871	50.862341
11	13	10.466845	9.254696	10.384672	10.893042	10.355002	51.354257
12	14	10.133079	8.557054	10.704495	10.302469	10.36325	50.060347
13	15	10.74432	6.700788	10.29412	10.67218	10.623848	49.035256
14	Grand Total	93.707336	84.593935	91.373381	103.738065		

PivotTable

PivotTable ▾ [Icons]

Machine	LPAR	Cluster	Date	Hour
Shift	User Gr...	Hi Lvl	Facility	System
Job Name	CPU			

Ready

**Click the
Chart icon
On the
toolbar**

□ How to make the data look good

FORMAT CELLS & FIELD SETTINGS

If you right click on a field tab, the popup box below appears

The screenshot shows a Microsoft Excel window with a PivotTable. A context menu is open over the PivotTable field tabs, with 'Field Settings...' selected. The 'PivotTable Field' dialog box is open, showing the 'Source field' as 'CPU' and the 'Name' as 'Sum of CPU'. The 'Summarize by' list includes 'Sum', 'Count', 'Average', 'Max', 'Min', 'Product', and 'Count Nums'. The 'Format Cells' dialog box is also open, showing the 'Patterns' tab with a color selection grid and a 'Sample' area. A yellow box highlights the text 'If you right click on a field tab, the popup box below appears' with arrows pointing to the context menu and the 'Field Settings...' option.

Machine	LPAR	Cluster	Date	Hour
2004	7/2/2004	7/6/2004		
6459	10.212464	9.375208		
859	10.295034	10.133815		
7373	10.215981	10.284314		
6793	11.053814	9.920058		
8652	9.346084	10.008667		
8956	8.95802	10.268032		
6845	9.254696	10.384672		
6079	8.557054	10.704495		
4432	6.700788	10.29412		
7336	84.593935	91.373381	103.738065	94.77766

□ How to sub-select data

The image displays two side-by-side screenshots of Microsoft Excel, illustrating different selection options for a pivot table field. Both screenshots show a pivot table with columns for dates (7/6/2004, 7/7/2004, 7/8/2004) and a 'Grand Total' column. The rows represent different 'Hour' categories (004, 044, 084, 124, 164, 204, 244, 284, 324, 364, 404, 444, 484).

Left Screenshot: The 'Sum of CPU' dropdown menu is open, showing a standard list of values: (All), A, B, C, D, E, F, G, (blank). The 'Date' dropdown menu is also open, showing a list of dates: 7/1/2004, 7/2/2004, 7/6/2004, 7/7/2004, 7/8/2004.

Right Screenshot: The 'Sum of CPU' dropdown menu is open, showing a list of values with checkboxes: (All), A, B, C, D, E, F, G, (blank). The 'Date' dropdown menu is also open, showing a list of dates with checkboxes: 7/1/2004, 7/2/2004, 7/6/2004, 7/7/2004, 7/8/2004.

The data in the pivot tables is as follows:

Hour	7/6/2004	7/7/2004	7/8/2004	Grand Total
004	9.375208	13.484208	10.207328	53.245667
044	10.133815	14.270894	10.741452	55.733054
084	9.920058	10.473355	10.777272	52.900292
124	10.008667	10.298541	10.388673	50.574617
164	8.95802	10.268032	10.398462	50.862341
204	10.466845	9.254696	10.384672	50.355002
244	10.133079	8.557054	10.704495	50.060347
284	10.74432	6.700788	10.29412	49.035256
324	10.74432	6.700788	10.29412	49.035256
364	10.74432	6.700788	10.29412	49.035256
404	10.74432	6.700788	10.29412	49.035256
444	10.74432	6.700788	10.29412	49.035256
484	10.74432	6.700788	10.29412	49.035256
Grand Total	93.707336	84.593935	91.373381	468.190382

When you click the dropdown arrow next to a field in a pivot table or chart, one of two types of selection lists will appear. On the left, all or any one of the values can be selected. On the right, groups of related items can be selected with checkmarks.

□ How to use a Pivot Table

Categorize/ Sub-categorize

Drilldown

Count of CPU			Hour		
Date	Cluster	LPAR	7	8	Grand Total
7/1/2004	A	SY1	30	35	65
		SY2	80	87	167
		SY3	73	72	145
	A Total		183	194	377
	B	SYE	66	66	132
		SYG	60	58	118
	B Total		126	124	250
	C	SYA	20	20	40
		SYB	36	32	68
	C Total		56	52	108
G	SYI	18	19	37	
G Total		18	19	37	
7/1/2004 Total			383	389	772
7/2/2004	A	SY1	39	38	77
		SY2	77	75	152
		SY3	72	70	142
	A Total		188	183	371
	B	SYE	56	56	112
		SYG	43	39	82
	B Total		99	95	194
	C	SYA	19	19	38
		SYB	32	34	66
	C Total		51	53	104
G	SYI	19	20	39	
G Total		19	20	39	
7/2/2004 Total			357	351	708
Grand Total			740	740	1480

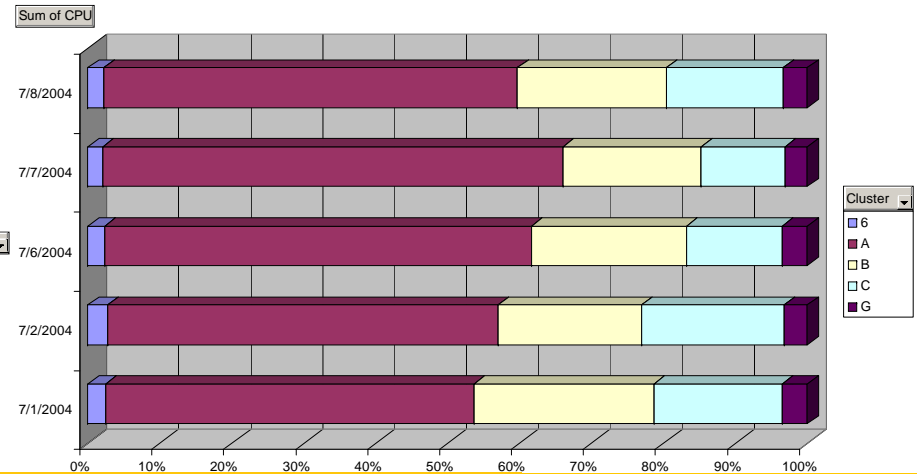
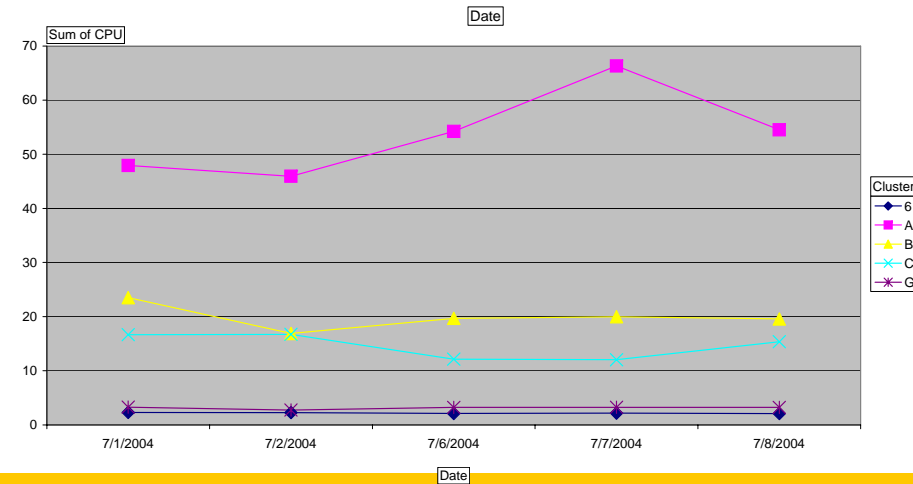
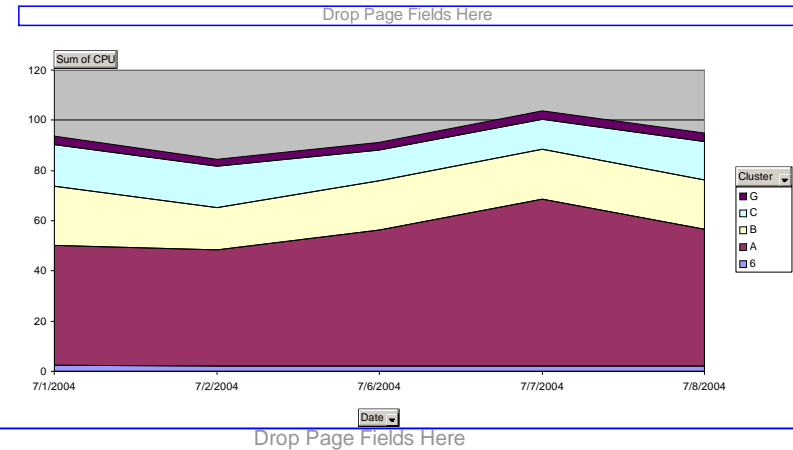
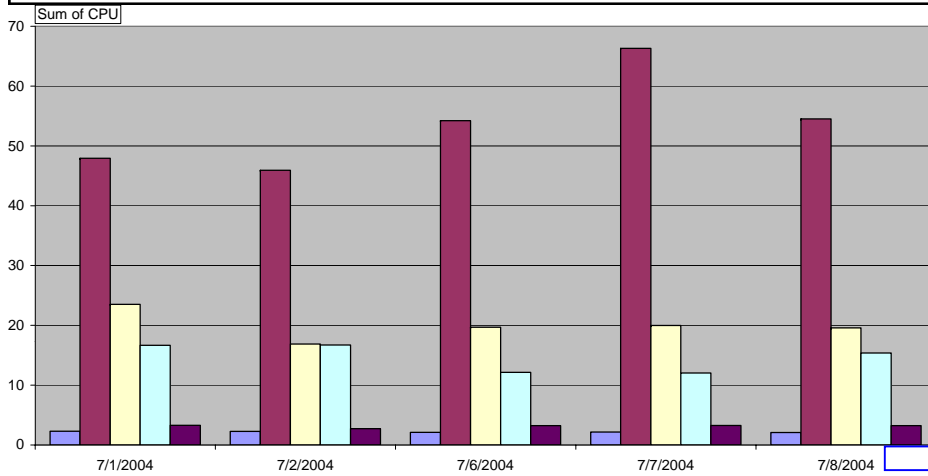
Sum of CPU	Date	7/1/2004	7/2/2004	7/6/2004	7/7/2004	7/8/2004	Grand Total
Hour	7	9.97	10.21	9.38	13.48	10.21	53.25
8	10.29	10.30	10.13	14.27	10.74	55.73	
9	10.40	10.22	10.28	12.94	10.58	54.42	
10	10.68	11.05	9.92	10.47	10.78	52.90	
11	10.53	9.35	10.01	10.30	10.39	50.57	
12	10.50	8.96	10.27	10.40	10.74	50.86	
13	10.47	9.25	10.38	10.89	10.36	51.35	
14	10.13	8.56	10.70	10.30	10.36	50.06	
15	10.71	6.50	10.00	10.00	10.00	49.04	
16	10.00	10.00	10.00	10.00	10.00	49.00	
17	10.00	10.00	10.00	10.00	10.00	49.00	
18	10.00	10.00	10.00	10.00	10.00	49.00	
19	10.00	10.00	10.00	10.00	10.00	49.00	

Double click a cell in a pivot table
(like the hi-lited cell above)
And a new worksheet with just the
data that made up the cell will be built.

	A	B	C	D	E	F	G	H	L
1	Machine	LPAR	Cluster	Date	Hour	Shift	User Group	Hi Lvl	CPU
2	313	SY3	A	7/7/2004	8	PRIME	TSOZ	TSOZ	0.079921
3	313	SY3	A	7/7/2004	8	PRIME	TSOF	TSOF	0.302471
4	313	SY3	A	7/7/2004	8	PRIME	POMSPRIC	POMS	0.000444
5	313	SY3	A	7/7/2004	8	PRIME	POMSPRIC	POMS	0.060268
6	313	SY3	A	7/7/2004	8	PRIME	OTHER	OTHR	0.000961
7	313	SY3	A	7/7/2004	8	PRIME	LDISSYS	LDIS	0.000333

Chart tricks

SAME DATA → MANY CHARTS



DEMONSTRATION OF ACTUAL PIVOT TABLES Charts & Table Formatting

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Thank you

Any Questions ???

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