How Swimming Enhanced Our Institutional Reporting: Streamlining

by

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Research Note

In swimming a streamline position is critical for moving through the water with maximum efficiency and speed. If you find it difficult to produce and/or obtain institutional reports in a timely and efficient manner, then you should consider streamlining. Pivot Table reports, combined with Pivot Charts, streamline the reporting process by allowing users to interact with institutional data through field filters. Users are able to drill down to different levels of interest and produce quality reports that address the needs of their program, in a timely and efficient manner.

THE PROBLEM: TRADITIONAL REPORTING PROCESS

The traditional model used by many Institutional Research Offices to generate reports consists of the following steps:

1) Request information
2) Data extraction
3) Data importation
4) Report generated
5) Report formatted and delivered

Although each step has its own unique issues and complexities, there are limitations to the traditional method.

Processing Time

The Department of Communication needs several different reports on student enrollment counts by course over the last four terms.

The first limitation is processing time. From the time that the request is made to the delivery of the report, several days or weeks may elapse. This is not necessarily due to the complexity of the request, but rather the result of staff workload issues and priorities among academic departments and administrative units. If, for example, the beginning of each semester reports need to be generated for 20 different academic programs on enrollment numbers by program and course. At the very least steps 3 through 5 would need to be repeated and possibly steps 1 through 5. Some departments might wait several weeks before receiving their report.

A second limitation involves unmet expectations. Requests for information maybe submitted with certain expectations in mind and yet details concerning those expectations are often not included in the request. These expectations may include data elements, formatting, and delivery output. Unmet expectations can create dissatisfactions with the Institutional Research Office and increase processing time.

Unmet Expectation

I would prefer that the report not include titles or section numbers. Please list the department first, followed by the term, course#, and count.

Finally, traditional reporting has often used static report formats. Compiling institutional reports in Word or PDF documents are useful in many instances; however, they are limited in that these formats are static. That is, there is no way to drill down to specific criteria within a report to look at different data characteristics, create summary measures, or modify formatting. To make unique reports based on specified criteria such as school, department, program, or major, separate reports need to be generated. This process takes time and can result in dissatisfaction with the process and end results.

Static Report

To create reports from a static report for each department, extracting the information and generating a series of departmental level reports would be required.

STATE UNIVERSITY FALL 2006 ENROLLMENT REPORT

SCHOOL	SEMESTER	DEPARTMENT	COURSE	TITLE	SECTION	COUNT
AS	Fall 2006	Sociology	S101	Intro to Sociology	001	56
AS	Fall 2006	Sociology	S101	Intro to Sociology	002	70
AS	Fall 2006	Sociology	S101	Intro to Sociology	003	76
AS	Fall 2006	Sociology	S101	Intro to Sociology	004	75
AS	Fall 2006	Sociology	S101	Intro to Sociology	005	75
AS	Fall 2006	Communication	C240	Non-Verbal Comm.	002	30
AS	Fall 2006	Communication	C427	Cross Cultural Comm.	001	20
AS	Fall 2006	Communication	C440	Organizational Comm.	001	20
FINA	Fall 2006	Art	A210	Art History	001	50
FINA	Fall 2006	Art	A210	Art History	002	50
FINA	Fall 2006	Art	A210	Art History	003	50
FINA	Fall 2006	Art	A210	Art History	004	50
Business	Fall 2006	Business	B310	Accounting	003	25
Business	Fall 2006	Business	B310	Accounting	004	15
Business	Fall 2006	Business	B325	Cost Accounting	001	35
Education	Fall 2006	Education	ED101	Intro to Elementary ED	001	20
Education	Fall 2006	Education	ED101	Intro to Elementary ED	002	25
Education	Fall 2006	Education	ED101	Intro to Elementary ED	003	30
Education	Fall 2006	Education	ED101	Intro to Elementary ED	004	30
SPEA	Fall 2006	Public Affairs	K300	Statistical Techniques	001	20
SPEA	Fall 2006	Public Affairs	K300	Statistical Techniques	002	20
SPEA	Fall 2006	Public Affairs	V366	Organizational Behavior	001	25
SPEA	Fall 2006	Public Affairs	V370	Statistical Modeling	001	40
SPEA	Fall 2006	Public Affairs	V450	Public Affairs-Finance	001	35

THE STREAMLINE SOLUTION: PIVOT TABLES AND CHARTS

A Pivot Table is an interactive table that summarizes large amounts of data. The rows and columns rotate to view different summaries of the source data, filter the data by displaying different pages, or display the details for areas of interest. Pivot Tables are interactive allowing users to change data views by using filtering mechanisms to highlight certain categories of data or to calculate different summaries and descriptive statistics.

Pivot Charts provide graphical views of institutional data and are linked to the corresponding Pivot Table. Filtering can be done through either the table or chart.

PIVOT TABLE

The Pivot Table shown below is based on hypothetical data from a fictional university. The table is based on enrollment count data within the following fields: School, Department, Term, and Course. Although this report looks similar to the Word report on the previous page, the Pivot Table is interactive and solves all three limitations of traditional reporting.

Field Filters

STATE UNIVERSITY ENROLLMENT PIVOT TABLE BY SCHOOL, DEPARTMENT, TERM, AND COURSE

School	(All)											
Sum of Enrollment		Course										
Department	Term	A210	A211	A212	A320	A325	C101	C210	C240	C427	C440	CJ101	CJ201
Art	Fall 2003	62	58	50	13	15							
	Fall 2004	194			13	14							
	Fall 2005	219			12	12							
	Fall 2006	213			17	14							
	Spring 2004	74											
	Spring 2005	80											
	Spring 2006	86											
Art Total		928	58	50	55	55							
Communication	Fall 2003							86	59	26			
	Fall 2004						213	107	51	24			
	Fall 2005						257	100	53	24			
	Fall 2006						263	99	60	28			
	Spring 2004						176	102	54		21		
	Spring 2005						233	105	61		18		
	Spring 2006						264	103	58		20		
Communication Total							1406	702	396	102	59		

First, processing time is significantly reduced through the use of drill-down filters to create department specific reports. In fact, reports can be filtered and created using any number of included fields.

Secondly, individuals can generate their own reports based on as little or as much information as is important to their department, program, or particular area of interest. Users can then format the report in a manner that meets or exceeds their expectations. The report can be formatted as an Excel file or exported into any number of other formats including Word, PDF, or XML.

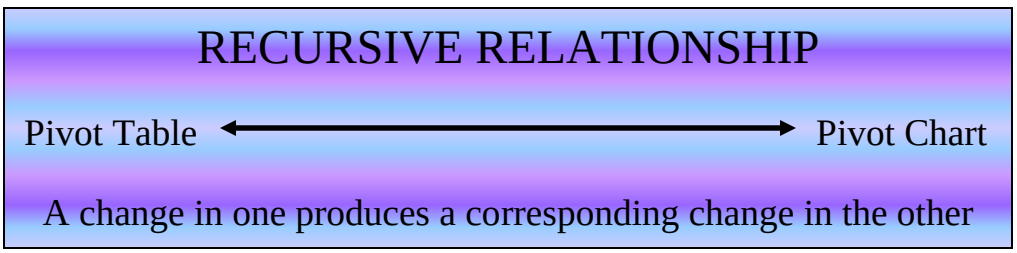
Finally, the interactivity of the Pivot Table makes its usefulness as a reporting tool unparalleled. Not only can reports be generated based on different data characteristics but summary statistics can be calculated. These summary statistics can include a variety of measures including counts, percentages, measures of central tendency and dispersion. For example, the chair of the Art Department may want to compare the average class sizes for the Fall A210 course with the Spring A210 course over the last four terms.

Pivot Table and Chart reports can be uploaded to the Web by using a Pivot Table list on a Web page. Publishing the Table/Chart to the web enables users to view and interact with the data from within their Web browsers.

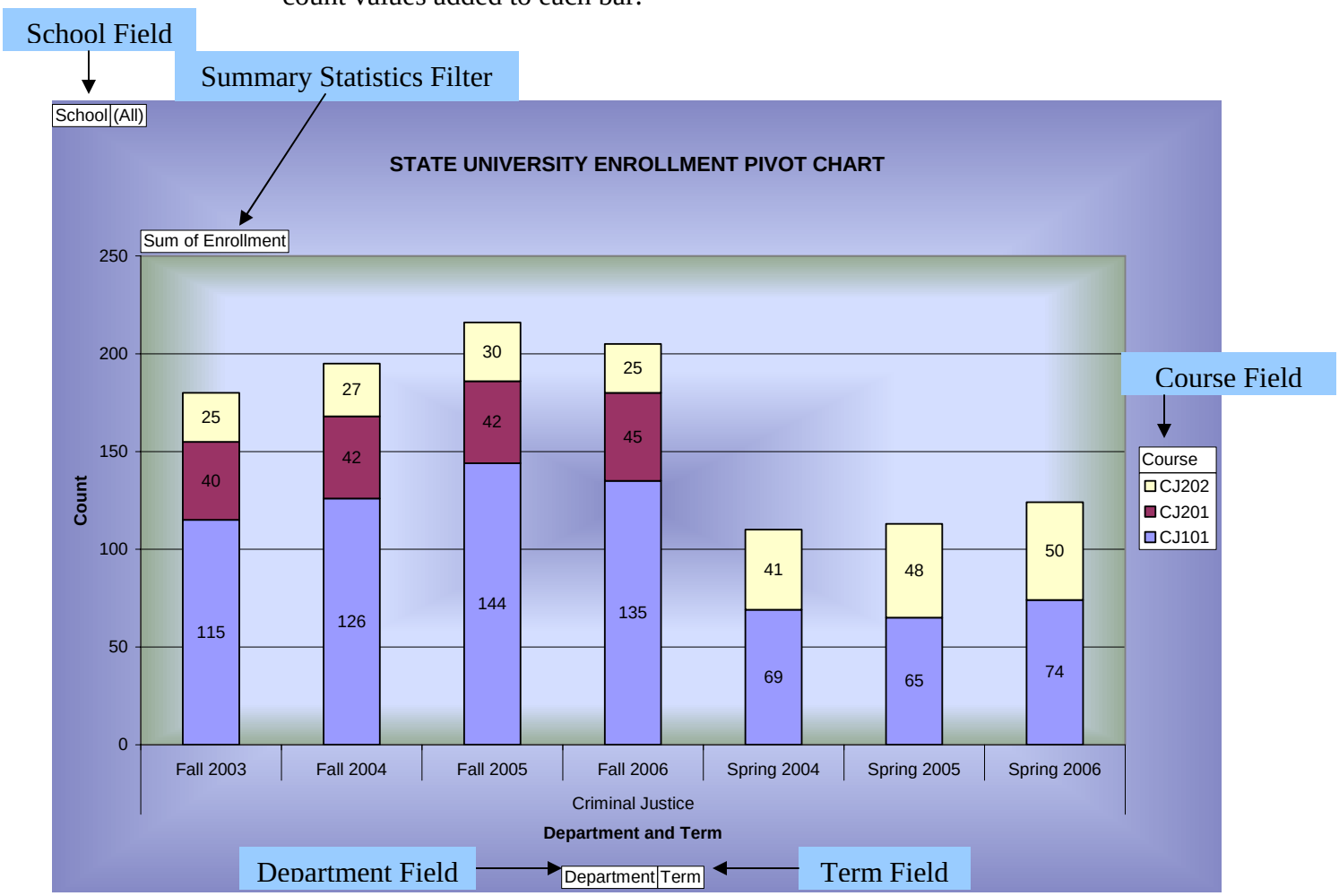
PIVOT CHART

As mentioned earlier, a Pivot Chart provides a graphical view of institutional data. Similar to the table, the chart is also interactive in that it allows users to filter by the data fields. When a filter is applied to the Pivot Table, the resulting change not only occurs in the table but is also reflected in the Pivot Chart. The relationship between the chart and table is recursive—filtering on one produces the same changes on the other.

The Pivot Chart below is linked to the corresponding Pivot Table above. The table and chart provide data for three different schools and seven different programs for State University. Similar to Pivot Tables, Pivot Charts can be formatted in any number of ways including line graphs, pie charts, scatter plots, and the like.



This Pivot Chart has been designed for the Criminal Justice Department. Enrollment counts for the department's three courses from Fall 2003 to Spring 2006 are provided. The chart has been formatted with colors and count values added to each bar.



CONCLUDING REMARKS

Moving the arms faster and kicking the legs harder will not produce more speed nor increase efficiency in the swimming pool. Similarly, increasing the speed of data extraction and analysis while continuing the production of static reports will not improve efficiency or reduce report production time.

Implementing Pivot Tables and Charts enable users to interact with the data that is important to their particular program or department. Users can also format the reports to their liking and export the results to other file formats for distribution and posting. These reporting tools streamline the process through increased efficiency, decreased production time, and meeting expectations.