AIR Forum 2006

EFFECTIVENESS THROUGH DIVERSITY

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Dynamic Charts:

An approach to making institutional data available through graphical means

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Thursday, 3:50 p.m. – 4:30 p.m.

Topics

- Background
- Motivation
- Objectives
- Demonstration
- Tools for the Job
- Questions / Comments

Background

- University of Puerto Rico – Mayaguez
  - Mid-size, public Institution.
  - Located on the island's west coast.
  - Degrees in
    - Engineering, Agriculture, Arts, Science, Business.
  - 11,000+ undergrads, 1000 grads.
- Institutional Research Office
  - Established in 2001.

Motivation

"Modern data graphics can do much more than simply substitute for small statistical tables. At their best, graphics are instruments for reasoning about quantitative information. Often the most effective ways to describe, explore, and summarize a set of numbers – even a very large set – is to look at pictures of those numbers. Furthermore, of all methods for analyzing and communicating statistical information, well-designed data graphics are usually the simplest and at the same time the most powerful."

Edward R. Tufte
The Visual Display of Quantitative Information
1983 Graphics Press

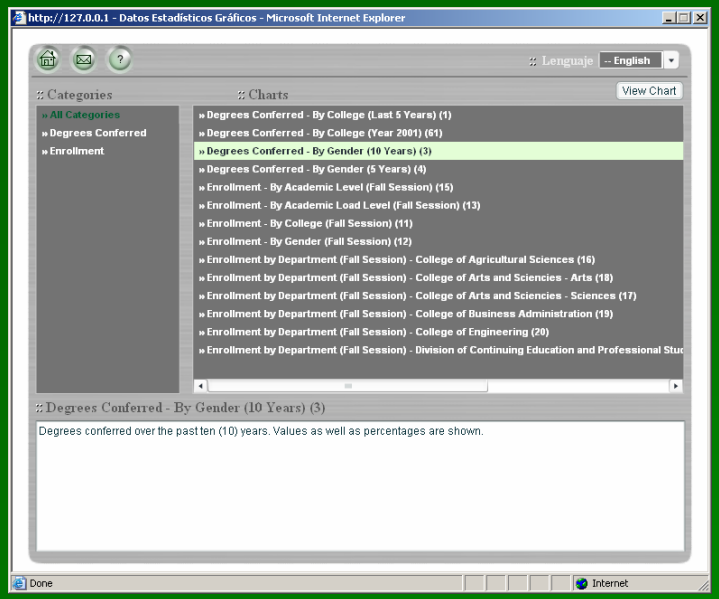
Motivation

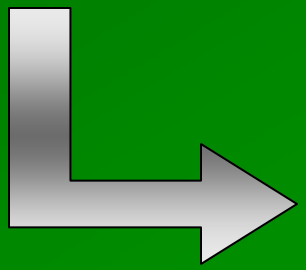
- Daily requests for “basic” numbers
  - Already provided through our web page, but not graphically.
- Additional requests for more in-depth studies
  - Time consuming (sometimes).
- *We would like to put a lot of time and effort into these broader studies, while still delivering those requests for the basic numbers*
  - *Empowering the user to obtain his/her data.*

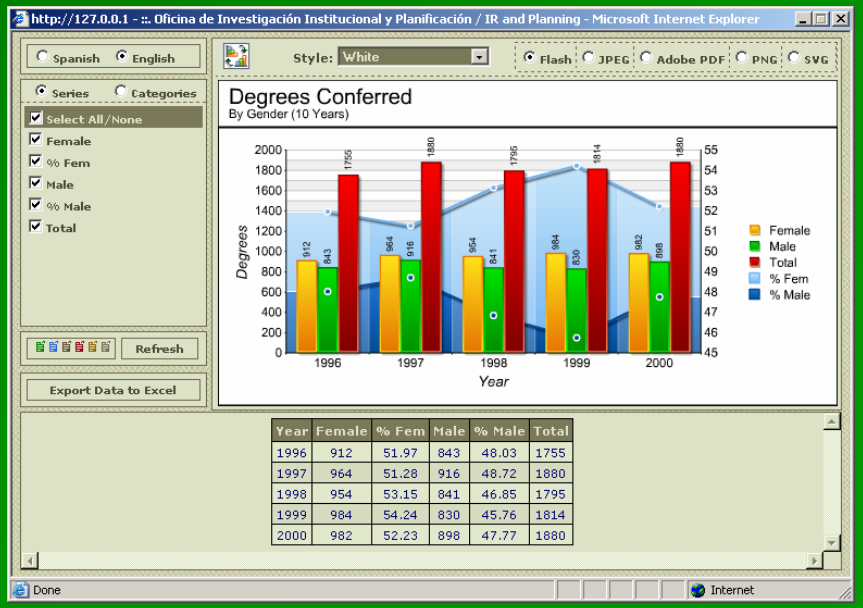
Objectives

- To provide a web based, interactive system for delivering basic, routine institutional data
  - Provide data in tables as well as charts.
  - Easy to use.
  - Available for everyone who needs it.
- To feed this system with data from our institutional database.
- To establish a method for adding new content to the system.

Demonstration







Advantages

- Table and chart provided in one integrated view
  - Can be used as an online tool for analysis, with limited capabilities.
- Charts are updated automatically as data is modified or new information is added to the institutional database.
- Data is kept centralized in one place
- Routinely requests are self-attended, leaving more time for other tasks.

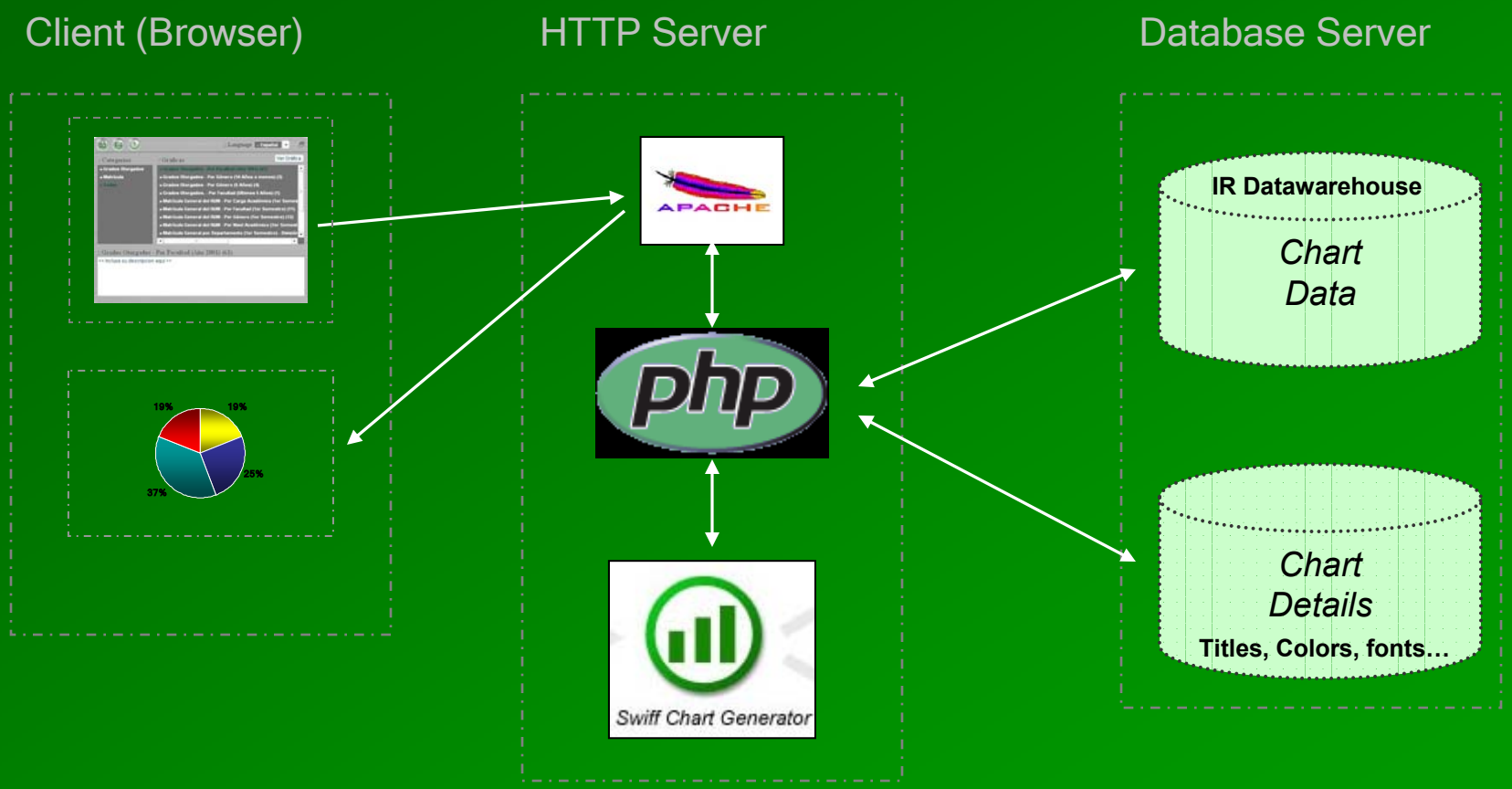
Limitations (Room for Improvement)

- Limited number of categories
  - More to come: admissions, faculty/staff, student performance (grades, dropouts, transfers, etc).
- No search mechanisms available
  - "I'd like to see every available chart related to the *School of Business.*"
- No querying parameters
  - Cannot establish a "custom" initial dataset.
- Internet Explorer is the only browser currently supported
  - Currently addressing this issue.

Tools for the Job

- Oracle Database & Tools
  - Ongoing Datawarehouse Effort.
- Apache HTTP Server
- Php scripting language
  - Ties everything up.
- Swiff Chart Pro & Generator
  - Charts styling and publishing.
- Adobe/Macromedia Flash
  - Charts Menu.
- HTML, XML, Javascript

System Diagram



Conclusion

- Charts and tables are very powerful ways to convey information to our users, especially when used in combination.
- By empowering the users to gather institutional information by themselves, we will have
  - Less requests for basic institutional data.
  - More time to pursue other studies and broader analyses.

More Information on Tools

- Oracle Database & Tools
  - http://www.oracle.com
- Php scripting language
  - http://www.php.net
- Swiff Chart Pro & Generator
  - http://www.globfx.com
- Adobe/Macromedia Flash
  - http://www.adobe.com

Questions

Thank You!

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Presentation: http://oiip.uprm.edu/pres1.html

Charts: http://oiip.uprm.edu/charts_menu.php