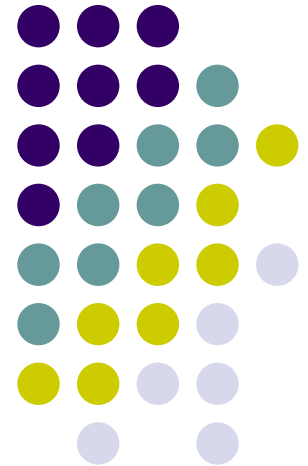


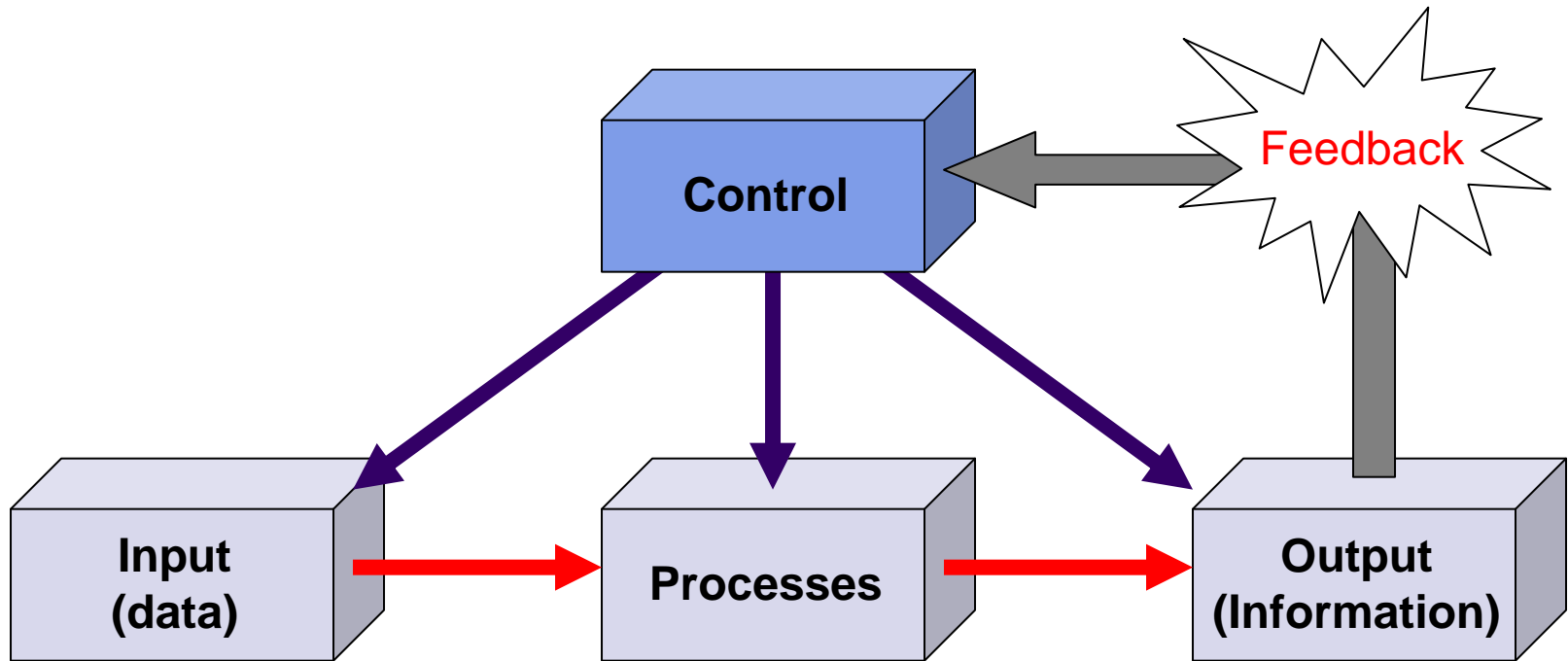
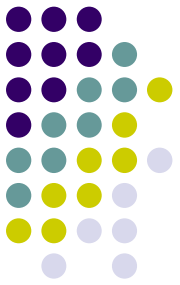
# Information System Components and Devices

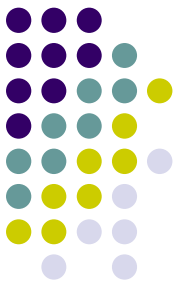
2110213 Information System Organization

Natawut Nupairoj, Ph.D.  
Department of Computer Engineering  
Chulalongkorn University



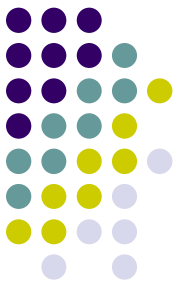
# Logical View





# Input

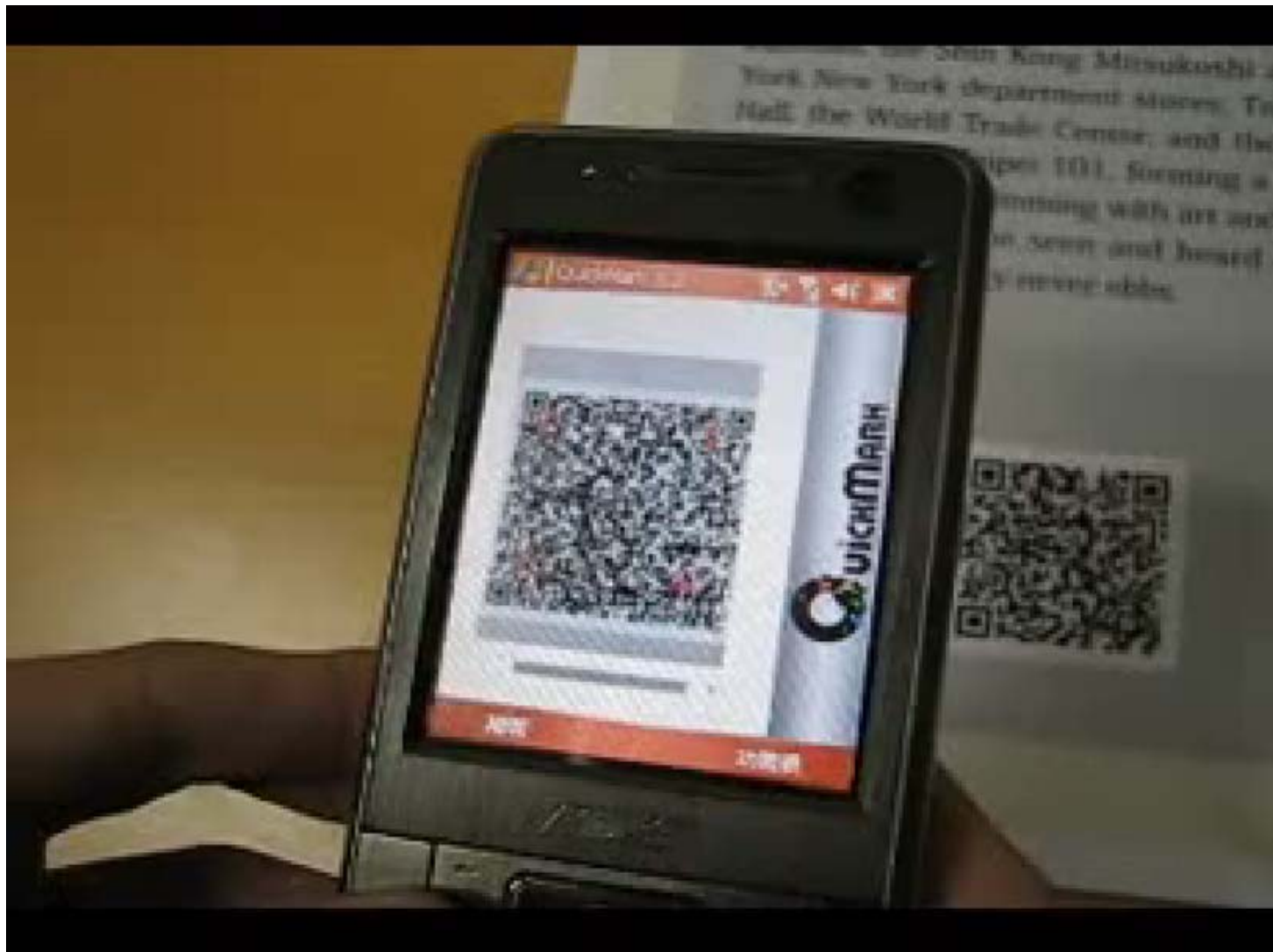
- Collect raw data for the information system
- Types
  - Manual / automatic
  - Local / remote
- Basic: keyboard, microphone, camera
- ID: Magnetic stripe, barcode, RFID
- Form factor: touch screen, handheld
- Others: GPS

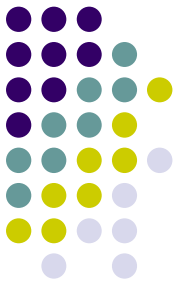


# Barcode

- Machine-readable information
- Types
  - Linear barcode: product ID (UPC), other IDs
  - 2D barcode (matrix code): URL, mobile ticketing

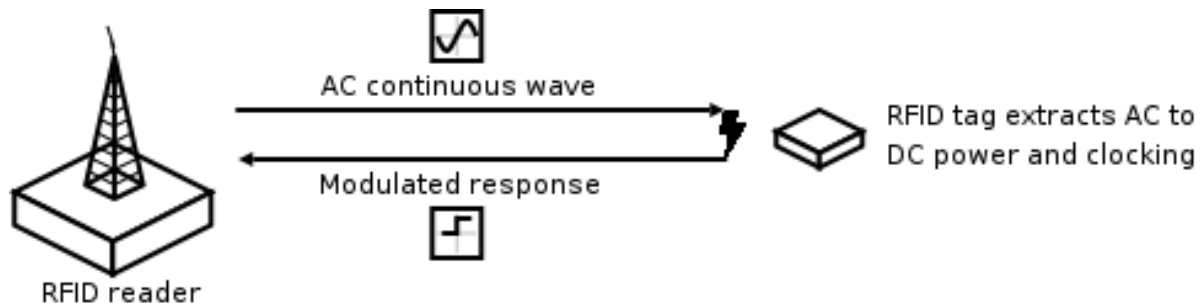






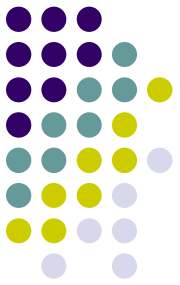
# RFID

- Radio-Frequency Identification (“arphids”)
  - Contactless tag
  - Passive RFID: small, no battery, short-ranged
  - Active RFID: bigger, more expensive, need battery, long-ranged, more reliable



# Active RFID: Toll Collection





# Output

- Provide information (processed results of data) to users
- Mostly via screens
  - New trends: portal / dashboard / GIS
- Other devices: email / sms



**Home**

**Home (Home)**

News

My Page

Documents

Welcome to WebSphere Portal



**IBM WebSphere Portal Server 4.2**  
Build Level: 055 2002-12-16 17:38

Licensed Materials - Property of IBM

5724-B88

(C) Copyright IBM Corp. 2001, 2002 All Rights Reserved.

**My Weather**

Tuesday, January 7, 2003 20:20 GMT

|   |   |
|---|---|
|    | <b>Boston, Massachusetts</b> 29°<br>Overcast 23°/29°        |
|    | <b>Raleigh, North Carolina</b> 42°<br>Mostly Cloudy 30°/45° |
|    | <b>Stuttgart, Germany</b> 19°<br>Mostly Cloudy 7°/24°       |
|    | <b>Beijing (Peking), China</b> 16°<br>Overcast 18°/35°      |
|   | <b>Tokyo, Japan</b> 39°<br>Clear 32°/46°                    |
|  | <b>Iowa City, Iowa</b> 50°<br>Mostly Cloudy 31°/54°         |


Copyright 2003 Pinnacor Inc.

**Bookmarks**

- IBM Corporation

**My News**

Tuesday, January 07 2:04:00 PM EST



British Prime Minister Tony Blair told the conference of 150 British ambassadors that "if the will of the U.N. is breached then the will should be enforced". (Associated Press AP Photo)

**Tony Blair Pledges to Stand**  
[FULL STORY >>](#)

**World News**

- Tony Blair Pledges to Stand
- Venezuela's Chavez Warns He Could Implement Emergency Measures
- UN Says Iraq Maintaining Cooperation Despite Saddam Tirade

**US News**

- Bush Unveils Ambitious Economic Stimulus Plan
- U.S. Military Action Against Iraq Possible but not Inevitable
- Daschle Shrugs Off Presidential Bid

**Market & Economy News**

**My Stocks**

Tuesday, January 7, 2003 4:30:00 PM

|                  |          |        |       |
|------------------|----------|--------|-------|
| ▲ <b>IBM</b>     | 86.00    | 2.41   | 2.8%  |
| ▲ <b>\$COMPQ</b> | 1,431.57 | 10.25  | 0.7%  |
| ▼ <b>\$DJI</b>   | 8,740.50 | -33.00 | -0.4% |
| ▼ <b>\$SPX</b>   | 922.93   | -6.08  | -0.7% |
| ▼ <b>\$N225</b>  | 8,656.50 | -56.83 | -0.7% |
| ▼ <b>\$GDAX</b>  | 3,112.77 | -44.48 | -1.4% |

Data delayed at least 20 minutes.

Get Quote Symbol Loc

Copyright 2003 Pinnacor Inc.

**Reminder**

Tuesday, January 7, 2003

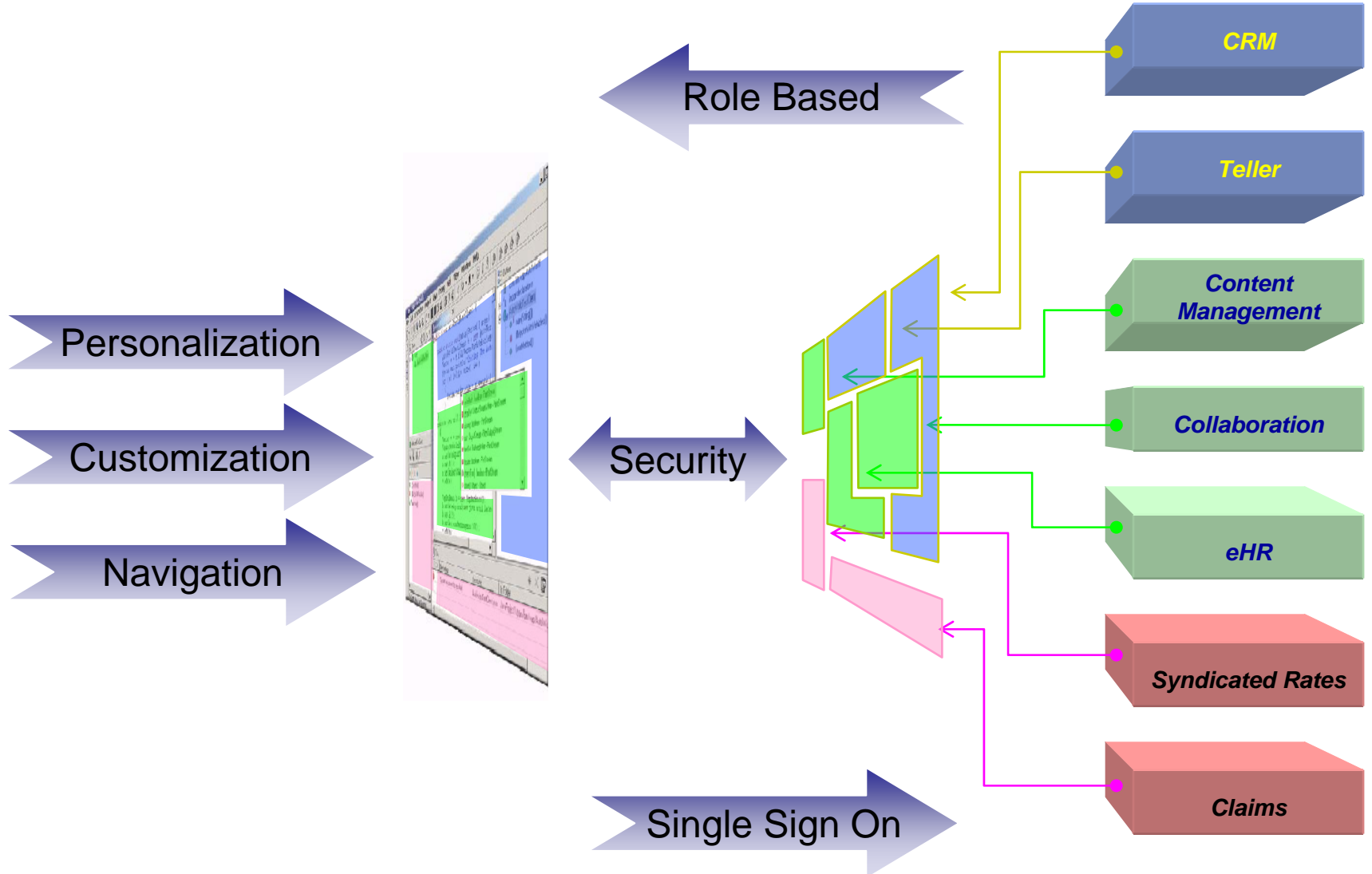
- Read the Readme for important information
- Enjoy Your Portal!

**Bookmarks**

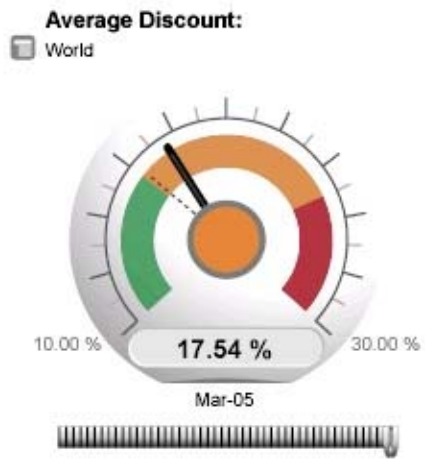
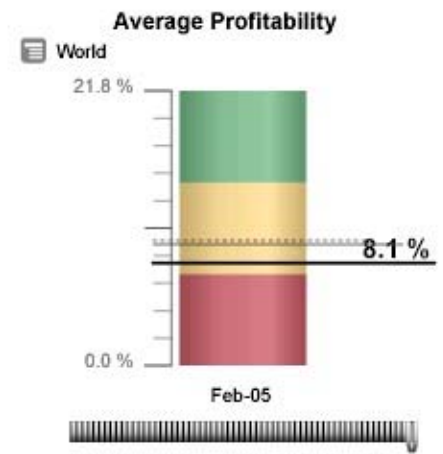
- Guide to WebSphere Portal
- What is a portlet?
- WebSphere Portal: The Big Picture
- WebSphere Portal Product

**Documentation**

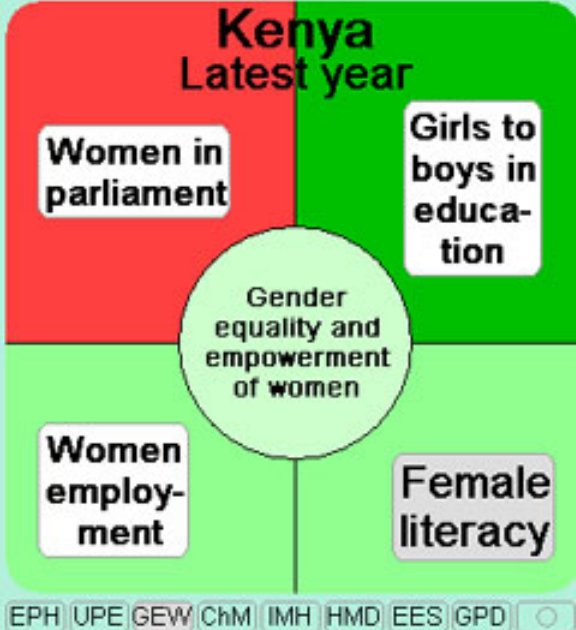
- WebSphere Portal Zone
- WebSphere Portal Catalog
- WebSphere Portal Support
- WebSphere Portal Offerings



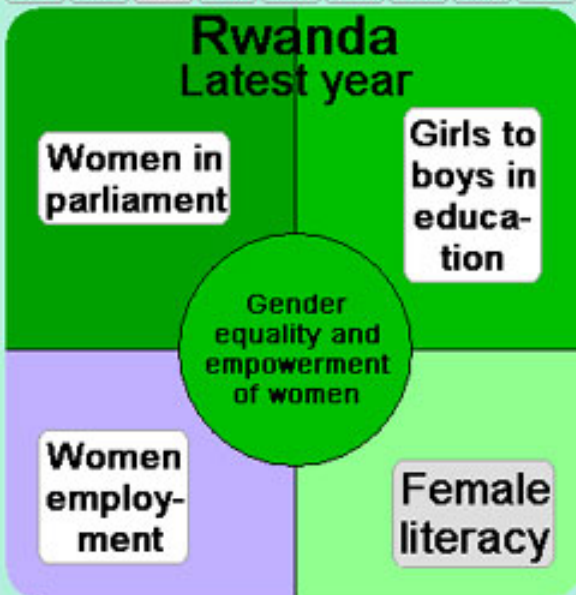
| Metric                        | Value    | % Change |   | Goal                   |   | % Goal Achi... |
|-------------------------------|----------|----------|---|------------------------|---|----------------|
| ▼ Human Resources             |          |          |   |                        |   |                |
| Employee Satisfaction         | 89       | 4.71%    | ↑ | Employee Satisfaction  | ● | 109.08%        |
| Net Sales                     | \$22.6 M | 0.76%    | ↑ | Sales Growth           | ◆ | 101.49%        |
| Sum of Profit M               | \$2.1 M  | 3.19%    | ↑ | Increase Profitability | ● | 100.00%        |
| Average Discount for W...     | 17.54 %  | 0.12%    | ↑ | Reduce Discounts       | ■ | 93.89%         |
| Customer Satisfaction I...    | 74       | -6.33%   | ↓ | Customer Satisfaction  | ■ | 92.63%         |
| Market Awareness Index        | 52       | 1.96%    | ↑ | Market Awareness       | ● | 112.03%        |
| ▶ Pricing Metrics ● 0 ◆ 1 ■ 1 |          |          |   |                        |   |                |



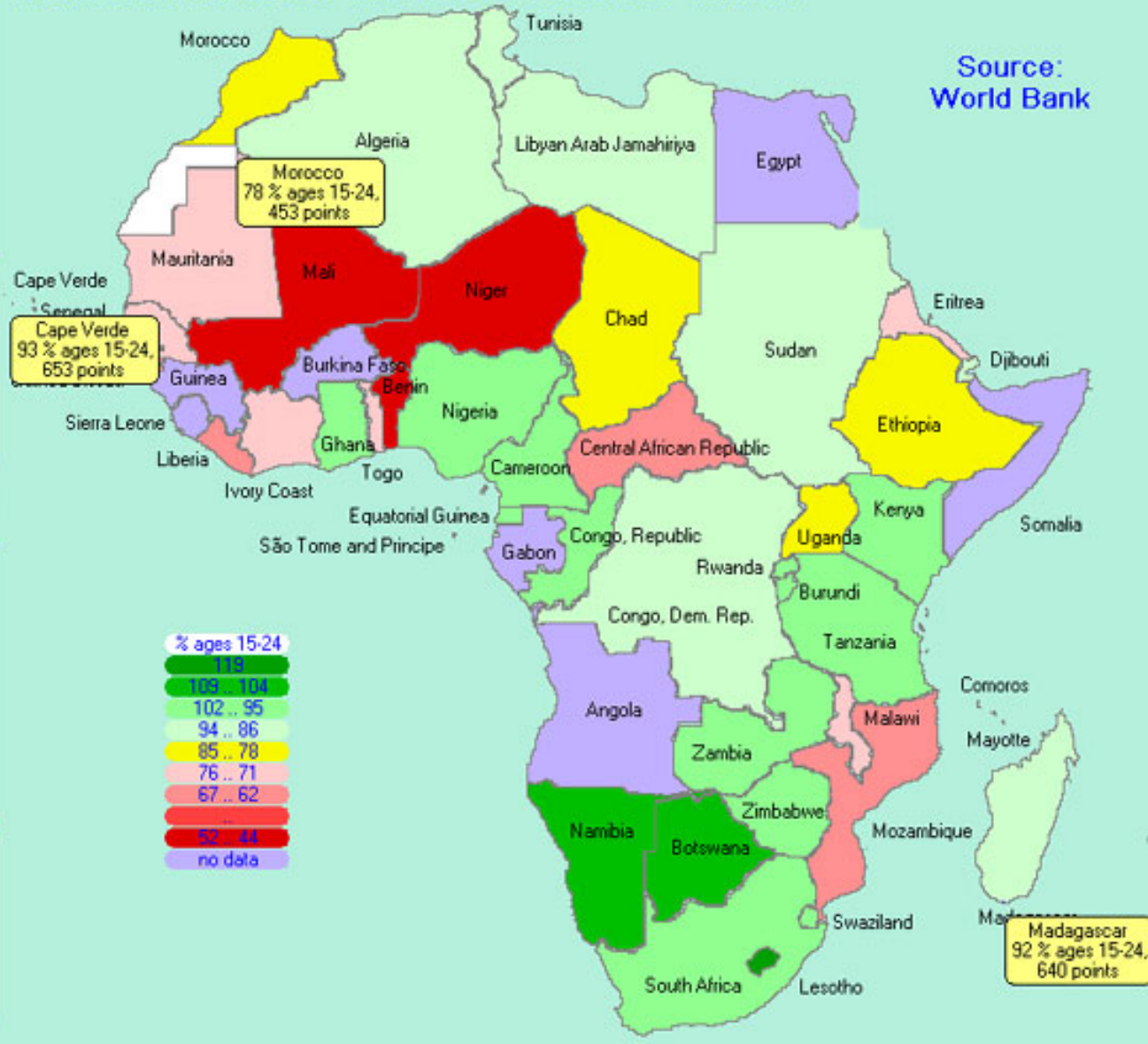
| Alerts                            |                       |  |
|-----------------------------------|-----------------------|--|
| Do Action...                      | Display: Default View |  |
| Subject                           | Date                  |  |
| ▶ Asia PAC Discounting too high   | 01/12/2004            |  |
| ▶ Inventory Alert                 | 04/01/2005            |  |
| ▶ SPC Alert                       | 06/05/2005            |  |
| ▶ Regional Sales Review           | 12/04/2005            |  |
| ▶ European Net Sales Reach Target | 30/11/2004            |  |



EPH UPE GEW ChM IMH HMD EES GPD



## Indicator: Ratio of literate females to males



**CRASH RECORDS INFORMATION SYSTEM**

Preference | Contact Us | About CRIS | ?



Active mode: Zoom In, Active layer: REFERENCE\_MARKER

Lon/Lat: (-95° 3' 24", 29° 29' 24")

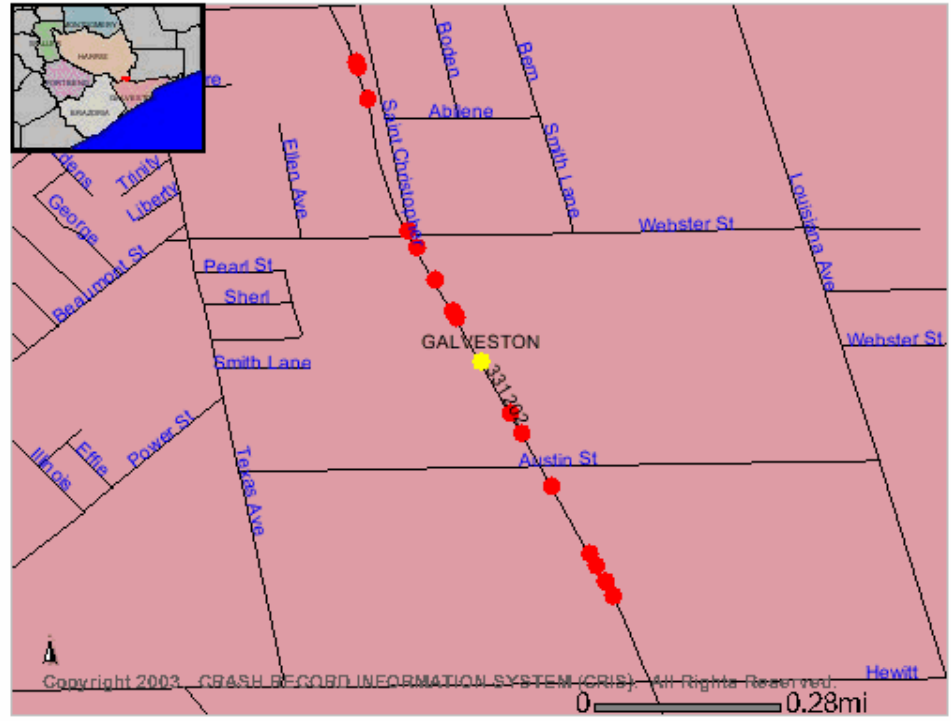
**Toolbox**



**Layers**

Visible Active

- CRASH\_RECORD
- STRATMAP\_ALL
- REFERENCE\_MARKER
- CONTROL\_SECTION
- RHINO
- STRATMAP\_LRS



**Crash Search**

Find crash where:

Weather condition:

Within:

**View reports**

Report:

**QUERY RESULTS**  
Results Count:32

| View                                | RHINOID | CRASH_DFO | LIGHT_CONDITIONS_CODE | LIGHT_CONDITIONS_DESC | WEATHER_CODE | WEATHER_DESC | SURFACE_CONDITIONS |
|-------------------------------------|---------|-----------|-----------------------|-----------------------|--------------|--------------|--------------------|
| <input checked="" type="checkbox"/> | 30487   | 3         | 4                     | DARK - LIGHTED        | 4            | FOG          | 1                  |
| <input checked="" type="checkbox"/> | 30487   | 4         | 2                     | DAWN                  | 6            | SMOKE        | 5                  |
| <input checked="" type="checkbox"/> | 30487   | 3         | 3                     | DARK - NOT LIGHTED    | 5            | BLOWING DUST | 3                  |
| <input checked="" type="checkbox"/> | 30487   | 4         | 1                     | DAYLIGHT              | 6            | SMOKE        | 2                  |
| <input checked="" type="checkbox"/> | 30487   | 4         | 1                     | DAYLIGHT              | 7            | SLEETING     | 3                  |

QuickBird Satellite Image - GIS Tax Mapping

Little Rock - Arkansas

© 2007 - DigitalGlobe - All rights reserved



[www.satimagingcorp.com](http://www.satimagingcorp.com)