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Fortis

**Enterprise Performance Reporting:
Software-Intelligent
Web-and-Email-Based
Communication**

EPR System Structure Overview

- eprEngine macro
 - about 1175 lines of SAS code
- Performance Measurement data
- Performance Criteria file

What Is Software Intelligence (SI) ?

- Application not fully “hard coded”
- Adapts to changes
without programmer intervention
- May have “Eternal Life”:
a Dynamically Autocustomizing Application

Key Benefit of SI in the EPR System

- System Administrator can
add or change or delete
performance criteria
(goals/thresholds) at any time
- No SAS programming changes
to eprEngine macro ever

Performance Criteria outside eprEngine Macro and separate from Performance Data

```
data Define.PerformanceCriteria;  
/* five variables for each Criterion */  
label   PerfDesc      = 'Performance Measure';  
label   PerfVar       = 'Performance Variable';  
label   PerfStd       = 'Performance Standard';  
label   PerfStdType   = 'Type of _Standard';  
length  PerfDesc      $ 50;  
length  PerfVar       $ 50;  
length  PerfStd       8;  
length  PerfStdType   $ 7;  
length  PerfStdFormat $ 40; /* Continued */
```

Continuation of DATA Step

```
/* Now define each Performance Criterion */  
PerfDesc          =  
    'Sales As a Percent of Inventory';  
PerfVar           = 'SalesPctOf_Inventory';  
PerfStd           = 25.0;  
PerfStdType       = 'Minimum';  
PerfStdFormat     = '6.1';  
output;  
/* Repeat assignments and output statement  
   for each Performance Variable.  
   Add, change, delete at any time. */
```

Software

- SAS Version 8.2
 - SAS Base
 - ODS feature
 - Macro facility
 - SAS/GRAPH
- Demo validated
on Windows and Unix

Demo Application

- Retail Sales Enterprise
- Hypothetical Performance Criteria
 - Sales
 - Sales as Percent of Inventory
 - Returns as Percent of Sales

Key Design Principle: The Power of Simplicity

A Sparse Image

- focuses the attention of the viewer
- reveals the message in the data

Focus Through Simplicity

- Let the data “talk”
- Graphs do not need:
 - axes, axis labels, tick marks, area fill under plot lines, etc.
- Tables do not need:
 - grids, backgrounds, etc.

What Color Should My Data Be?

- Avoid red-green combination
 - commonest form of color blindness
- “Traffic Lighting” uses
 - red/yellow/green for
Bad/Caution/Good
- EPR demo is “binary”:
 - red/blue for Bad/Good
 - could extend with yellow for Caution

SAS Web Publishing Options

- At VIEWS 2001, we compared
 - WebFrame SAS/GRAPH Driver
 - ODS Table of Contents
 - Our “CrossLink” Method
- eprEngine macro combines
our improved ODS TOC
and CrossLink

Solutions for a Finite Work Day in an Era of Information Overload

- Show them what's important
- “If it does not fit on one page,
they will not read it” *Ken Wesley*
- But have more available,
in case it's needed

Structure of Information Presentation

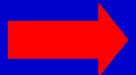
- Let the viewer stop
as soon as satisfied
- Let the viewer find more
if interested
- Keep the viewer focused

Enterprise Performance Reporting

Stop Reading . . . As Soon As Satisfied

- Exception Report (only **bad** KPIs)
- Summary Report (all KPIs)
- E-mail Alert Report
- Trend Plot and Table
- Exception History

*KPI: Key Performance Indicator



Exception Report

- Actual Performance vs. Standard
- Changes since previous report
- Ability to list nothing, but say:

No Exceptions to Report

- For a busy user, “No Exceptions” may be the only report needed or desired

Exception Report

Enterprise Retail Performance System Demo - Microsoft Internet Explorer

File Modifica Visualizza Preferiti Strumenti ?

Indietro Cerca Preferiti Multimedia

Indirizzo C:\epr\DemoWebPages\ClickHereToEnterEPRsystem.html Val Collegamenti

Tables/Trends/History

- [Exception Table April 2003](#)
- [Summary Table April 2003](#)
- [Exception History 13 Months](#)
- [Sales](#)
- [Sales As a Percent of Inventory](#)
- [Returns As a Percent of Sales](#)

Demo of Bessler-Pierri Enterprise Performance Reporting System

Monthly Enterprise Performance Exceptions for April 2003

Performance Measure	Actual Performance	Problem	Performance Standard	Change Since Previous Month
Returns As a Percent of Sales	4.31	Greater Than	4.00	0.88
Sales As a Percent of Inventory	22.3	Less Than	25.0	-12.5

[Exception History for April 2002 - April 2003](#) [Summary for April 2003](#)

All Performance Measures on Exception and Summary Reports for April 2003
hyperlink to Trend Plots and History Tables for April 2002 - April 2003

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Risorse del computer

No Performance Exception

Enterprise Retail Performance System Demo - Microsoft Internet Explorer

File Modifica Visualizza Preferiti Strumenti ?

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Vai Collegamenti

Tables/Trends/History

[No Exceptions March 2003](#)

[Summary Table March 2003](#)

[Exception History 13 Months](#)

[Sales](#)

[Sales As a Percent of Inventory](#)

[Returns As a Percent of Sales](#)

Demo of Bessler-Pierri Enterprise Performance Reporting System
Monthly Enterprise Performance Exceptions for March 2003
There were No Performance Exceptions for March 2003
Go To Summary Report to see Actual Performance

Performance Measure	Actual Performance	Problem	Performance Standard	Change Since Previous Month
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[Exception History for March 2002 - March 2003](#) [Summary for March 2003](#)

All Performance Measures on Exception and Summary Reports for March 2003
hyperlink to Trend Plots and History Tables for March 2002 - March 2003

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Operazione completata Risorse del computer

Summary Report

Every KPI, one line per KPI, with

- Description
- Actual Value vs. Standard
- Change Since Previous Report

Summary Report

Enterprise Retail Performance System Demo - Microsoft Internet Explorer

File Modifica Visualizza Preferiti Strumenti ?

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- [Sales As a Percent of Inventory](#)
- [Returns As a Percent of Sales](#)

Monthly Enterprise Performance Summary for April 2003

Performance Measure	Actual Performance	Performance Standard	Type of Standard	Change Since Previous Month
Returns As a Percent of Sales	4.31	4.00	Maximum	0.88
Sales	76,349	50,000	Minimum	-63,840
Sales As a Percent of Inventory	22.3	25.0	Minimum	-12.5

[Exceptions for April 2003](#) [Exception History for April 2002 - April 2003](#)

All Performance Measures on Exception and Summary Reports for April 2003
hyperlink to Trend Plots and History Tables for April 2002 - April 2003

Risorse del computer

Will they read the EPR Report?

Use EmailAlert option!

- Don't just put reports on the web
- Let eprEngine send to concerned persons the Exception Report as an attachment, but
only if Exception(s) to report
- “No news is good news.”

Email Alert

Enterprise Retail Performance Exceptions for April 2003 - Message (Plain Text)

File Edit View Insert Format Tools Actions Help

 Reply  Reply to All  Forward        

From: LeRoy Bessler [bessler@execpc.com]
To: LeRoy Bessler; Francesca Pierri
Cc:
Subject: Enterprise Retail Performance Exceptions for April 2003

There were Retail Performance Exceptions for April 2003

Please review the attached Exception Report / EPR System Home Page.

You can link to:

1. The complete Monthly Performance Summary Report
2. A trend plot & table for each Performance Measure
3. The Exception History Report for April 2002 - April 2003

You need not return to this email attachment.

The home page for the EPR System is also located at
<c:\epr\DemoWebPages\ClickHereToEnterEPRsystem.html>

LeRoy Bessler

Trend Plot and Table

Trend with Detail for each KPI

- graph with selective annotation
- table with all detail data

Trend Plot

- Shows a monthly range
(12 X N) + 1 months, for N years
 - Start with same month
as last reporting month
- Shows change since N years ago
- Reveals “seasonality”: anything
special about certain month(s)

Show Them What's Important with Selective Annotation

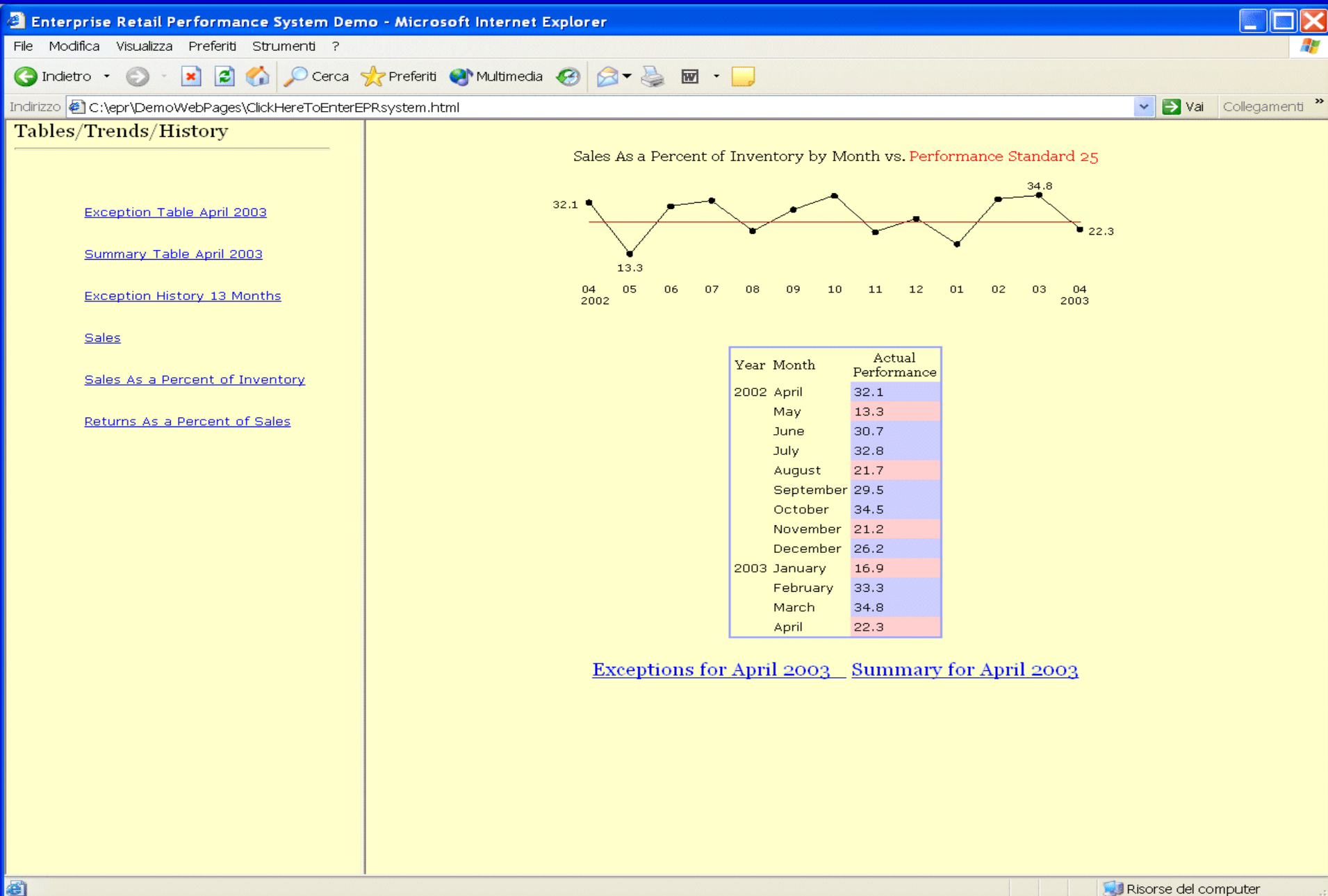
On a Trend Line

- start & end points
- intermediate max and/or min

Best Design for Trend Tracking

- Sparse “Hard” Annotation
- Flyover Text for Unannotated Points
- Composite of Graph and Table
with all detail printable

Trend and Table



Exception History

- All exceptions during trend period
- Has this happened before?
- How bad was it previously?

Exception History

Enterprise Retail Performance System Demo - Microsoft Internet Explorer

File Modifica Visualizza Preferiti Strumenti ?

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[Sales As a Percent of Inventory](#)

[Returns As a Percent of Sales](#)

Monthly Enterprise Performance Exception History - April 2002 through April 2003

Year	Month	Performance Measure	Actual Performance	Problem	Performance Standard
2002	April	Returns As a Percent of Sales	4.78	Greater Than	4.00
2002	August	Returns As a Percent of Sales	4.31	Greater Than	4.00
2002	September	Returns As a Percent of Sales	5.60	Greater Than	4.00
2002	November	Returns As a Percent of Sales	6.35	Greater Than	4.00
2003	April	Returns As a Percent of Sales	4.31	Greater Than	4.00
2002	April	Sales	19,964	Less Than	50,000
2002	May	Sales	15,951	Less Than	50,000
2002	November	Sales	977	Less Than	50,000
2003	January	Sales	38,961	Less Than	50,000
2002	May	Sales As a Percent of Inventory	13.3	Less Than	25.0
2002	August	Sales As a Percent of Inventory	21.7	Less Than	25.0
2002	November	Sales As a Percent of Inventory	21.2	Less Than	25.0
2003	January	Sales As a Percent of Inventory	16.9	Less Than	25.0
2003	April	Sales As a Percent of Inventory	22.3	Less Than	25.0

[Exceptions for April 2003](#) [Summary for April 2003](#)

All Performance Measures on Exception and Summary Reports for April 2003
hyperlink to Trend Plots and History Tables for April 2002 - April 2003

Operazione completata Risorse del computer

Future Enhancement Options

- Adapt eprEngine to non-monthly data
- Expand Performance Characterization:
Good vs. Caution vs. Bad
- Drill-down detail to support summaries
- Retention of monthly summary reports
for later display on-demand

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QUESTIONS