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Tip or Technique

Report Makeovers

Product(s): Cognos ReportNet, Cognos 8, Impromptu

Area of Interest: Report Design

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Contents

1   Introduction

1.1   Purpose

Effective report writing is an art, and often as a report writer you are tasked with improving or giving a makeover to an existing report. While there are no mandatory rules that must be followed, there are some widely recognized guidelines that can help improve existing reports and aide in the creation of new reports.

1.2   Applicability

While the application used to create the reports in this document is Cognos 8 Report Studio, the techniques and concepts discussed here are not limited to Cognos 8.

1.3   Makeover Examples

Below are some examples of reports that were given makeovers. The one major thing that they all have in common is the reports, once made over, display the same data as they did before but in a much simpler and easy to read style (diagram 1, diagram 2, diagram 3).
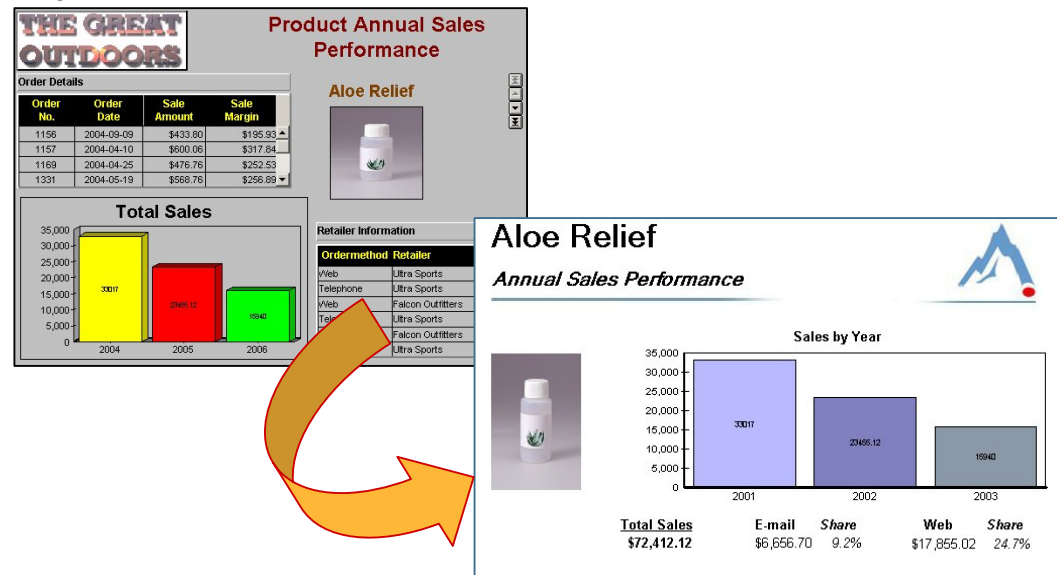
Diagram 1

Diagram 2

Diagram 3[1]

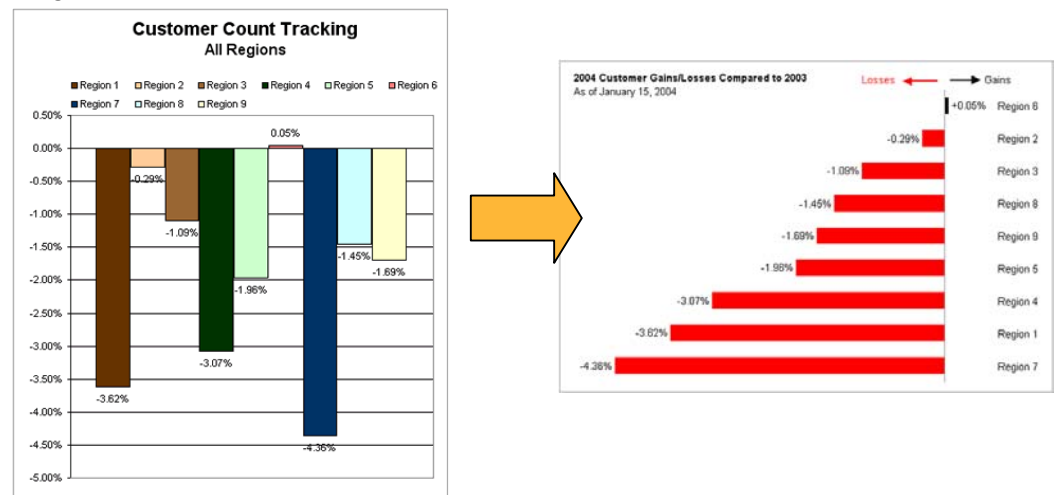## 2   Skills Required

In order to build good reports several skills are required. The three general skills are Information, Implementation and Presentation. Most people have two of the three skills previously mentioned, rarely though, someone has all three skills developed significantly.

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[1] From Stephen Few's web site *Perceptual Edge*
http://www.perceptualedge.com/example1.php

- Information

  This skill is an understanding of the value of the information being presented on the report. Most people understand what data and metrics they want to see, but lack the ability to express it.

- Implementation

  This skill involves the ability to perform data modelling, database design, as well as report authoring.

- Presentation

  This skill is the ability to create a simple layout which displays the data in a simple style that delivers the desired information clearly.

2.1 Information

All information applications should provide enough information to allow the user to either make a decision or take an action. There are three general steps to consider when designing a report.

1. What's the key question to be answered?
2. If more information is required then link to it via drill through
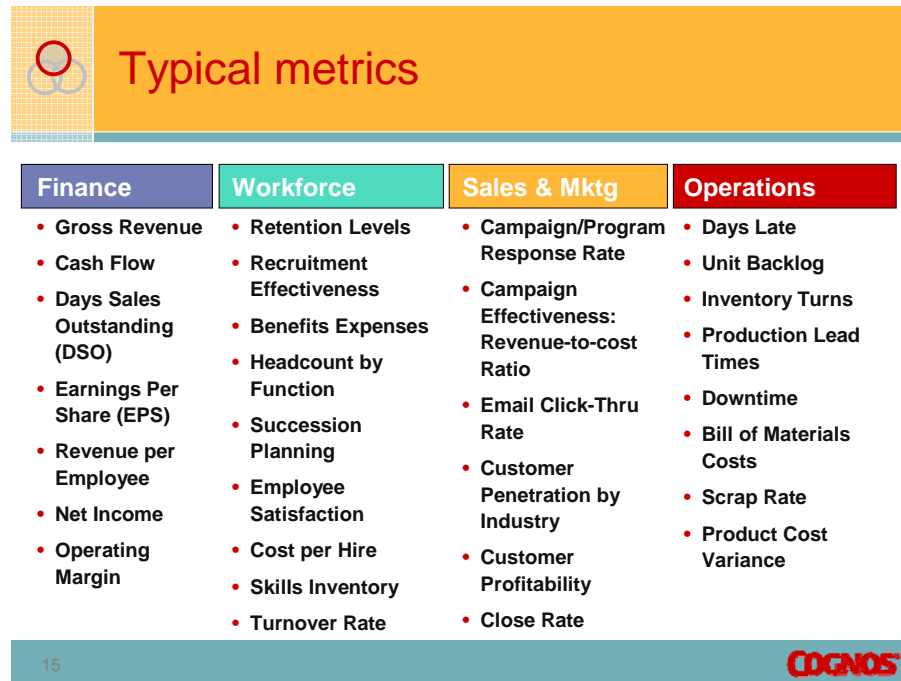3. Clearly identify the scope of the information.

2.1.1 Answering the Key question

Every Report needs to have at least one comparison and one summary such as variance, % of total, or average. As well each report should have at least 1 qualitative measure such as, what is the trend (over month or year) or who are my best customers (top N by count, or top N by percentage).

Another thing to consider, the scope of data needed by the user viewing it. For example a regional sales manager may only need to see data for Canada, where as his boss may only need to see data for North America, and the Senior VP of Sales may only need data for the entire Sales Organization.

Below is a list of typical metrics for various functional areas (diagram 4).

Diagram 4

Finance	Workforce	Sales & Mktg	Operations
• Gross Revenue	• Retention Levels	• Campaign/Program Response Rate	• Days Late
• Cash Flow	• Recruitment Effectiveness	• Campaign Effectiveness: Revenue-to-cost Ratio	• Unit Backlog
• Days Sales Outstanding (DSO)	• Benefits Expenses		• Inventory Turns
• Earnings Per Share (EPS)	• Headcount by Function	• Email Click-Thru Rate	• Production Lead Times
• Revenue per Employee	• Succession Planning	• Customer Penetration by Industry	• Downtime
• Net Income	• Employee Satisfaction		• Bill of Materials Costs
• Operating Margin	• Cost per Hire	• Customer Profitability	• Scrap Rate
	• Skills Inventory		• Product Cost Variance
	• Turnover Rate	• Close Rate	

2.1.2 Mapping Drill through

If when trying to answer the business questions you hear phrases like "It depends..." or "Sometimes when...", you should start to think about how information is connected. On the diagram above notice that the different functional areas are colour coded. If you think of these coloured areas here as representing one or more reports for that area, draw out a map of how reports are intended to be connected via drill through. This will keep the prompting consistent as well as the drill through parameters, which is more important when multiple report authors are contributing to your reporting application.

It is recommended to track the drill through paths between functional areas so that your report authors design the drill throughs in a consistent manner.

2.1.3 Identifying the Information Scope

If you've ever received a report that didn't have page numbers on it, or a date, or the filter information wasn't displayed. It was likely difficult to identify what the information was about, or even when the report was run. The information being displayed to the user is only good if there is enough context displayed to tell the user what the information pertains to. In general follow the classic 5 "W"s of questions:

- When the report was run, or for what period does the data pertain?
- What is the objective of the report?
- Who owns the data?

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- Why is the report being used or what is the objective being evaluated?

2.2 Presentation

There are three basic tips that can be used to help design reports. While they won't provide dazzling reports they will help to contribute to define focus and balance that should be the goal of any report.
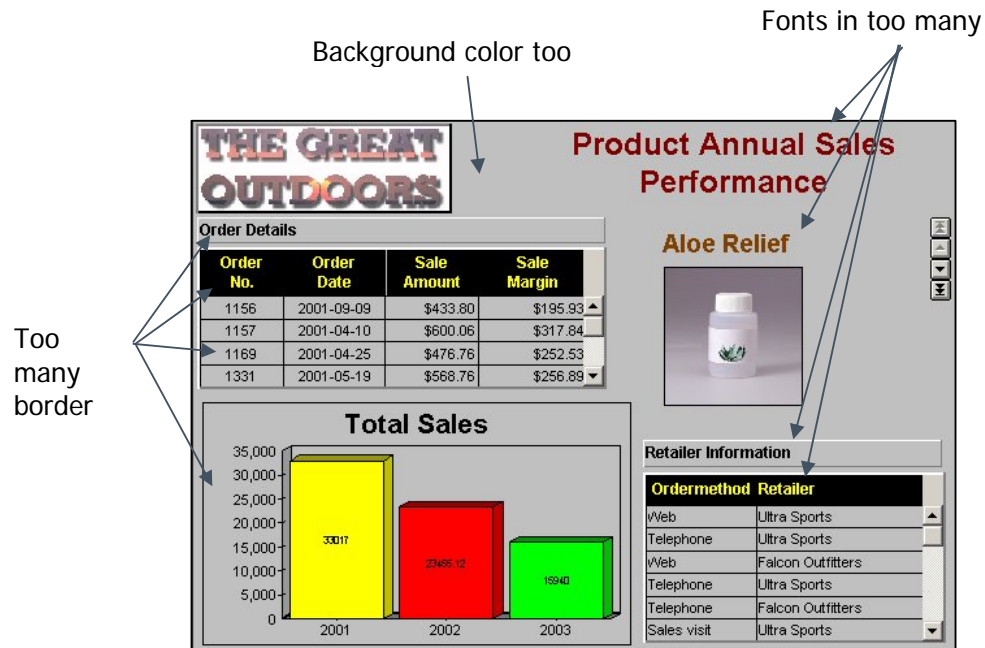
- KISS

    Focus on the value of the information
- Establish a visual hierarchy

    Create a focal point, using layout templates to help with fonts colours and borders.
- Aesthetic appeal

    Use a style guide to establish consistent clean looking reports

2.2.1 K.I.S.S.

This tip is simply about the data. Eliminate all text that doesn't support the message the report needs to communicate. That means getting rid of the eye candy, the chart junk, the gratuitous font changes and son on. Also while it may appear obvious, co-locate like-minded information, this means information that answers the same question or supports the same viewpoint.

The example below (diagram 5) shows how it's possible to "keep it simple". There is lots of opportunity to clean up the sample. For example, the background colour is too strong and overpowers the content. As well there are 4 font colours which is at least 2 too many. Lastly there are 3 different border styles, raised, flat and inset, which is more than what is needed in this report.

Diagram 5

Background color too

Fonts in too many

Product Annual Sales Performance

THE GREAT OUTDOORS

Aloe Relief

Order Details

Order No.	Order Date	Sale Amount	Sale Margin
1156	2001-09-09	$433.80	$195.93
1157	2001-04-10	$600.06	$317.84
1169	2001-04-25	$476.76	$252.53
1331	2001-05-19	$568.76	$256.89

Too many border

Total Sales

35,000
30,000
25,000
20,000
15,000
10,000
5,000
0

33017   23465.12   16940

2001   2002   2003

Retailer Information

| Ordermethod	Retailer
Web	Ultra Sports
Telephone	Ultra Sports
Web	Falcon Outfitters
Telephone	Ultra Sports
Telephone	Falcon Outfitters
Sales visit	Ultra Sports

2.2.2 Visual Hierarchy

Without some sense of layout or emphasis, a report is flat and people have to concentrate on where to look. In particular, one tip to keep in mind is that reports are read in the same manner that we read. So, if you speak English or a European language, the upper, left-hand corner is where most people will start when looking at your report. This is where the most important piece of information should be placed, because that is where everyone is going to look just out of habit.

2.2.2.1 Layout Template

It is also recommended to use a layout template when creating your report. A layout template should help eliminate spending your time on tweaking a report by providing the margins and proportions of where your report content is intended to go. To create a report template start by taking the paper size (either landscape or portrait), subtracting the margins and then dividing the area by the number of rows. If you are using ReportNet or Cognos 8 you may also want to insert narrow rows or columns to act as spacers. Below is an example of some layout templates (diagram 6).

Diagram 6

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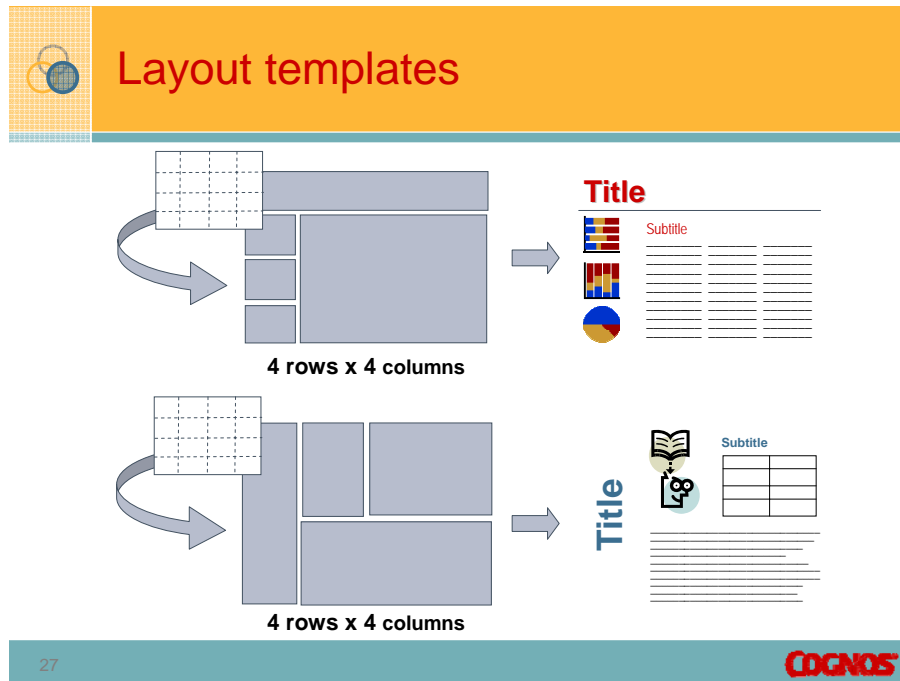
Below you can see how a layout template could improve a report (diagram 7). In the report below you can see that the chart is too high up, encroaching on the title area, as well as needing to be moved to the left a little bit. The list would be improved if the third column lined up on the grid. Also the logo at the top has a lot of white space beside it, making it look like its floating and, by not aligning with anything below it. In this case, using a font that filled the space on one line might be one solution or perhaps adjusting the grid to 4 columns and 5 rows to that the tope row is narrower.

Diagram 7
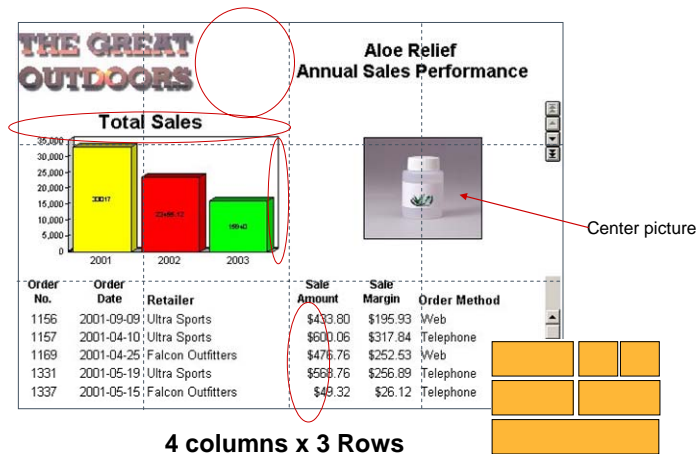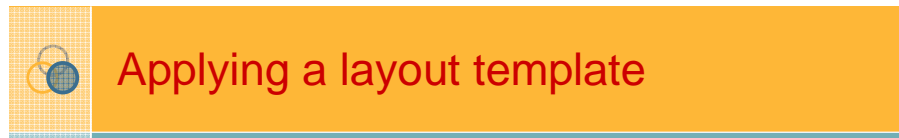
2.2.2.2 Visual Emphasis and Fonts

Now that you have a layout grid to help lend balance and structure to your report, you can now start to simplify the report by defining the fonts to be used.

Often with today's technology rather than using bold or capitalization to emphasise text, often heavy or fat fonts such as Arial Rounded or Impact. As a second alternative, you can use warm bright colours to get someone's attention. To de-emphasize text italics are often used, but similar to the emphasis techniques there are alternatives. First one is to use a light font where the letters are physically narrower or thinner than the main font, the second alternative is to use a cool colour such as grey or blue. An example of how fonts and colours can help emphasize text look at the examples below (diagram 8, diagram 9).

Diagram 8
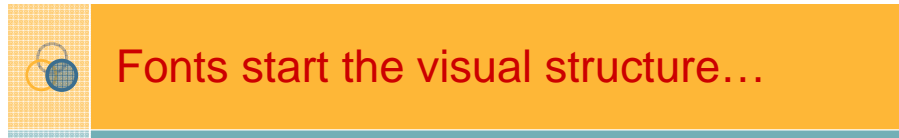
Fonts start the visual structure…

TITLE IN ARIAL, 24 PT, BOLD, All Caps

Main topic using Arial, 24 pt, bold, mixed case

Secondary topic using Arial Narrow, 20 pt and bold

Content is in Arial Narrow, 16 point without bolding

Within a block of text, underline is useful for stopping the eye.

Seems to be missing something…

Diagram 9

…colour, spacing and borders finish it!

TITLE IN ARIAL, 24 PT, BOLD, All Caps

Main topic using Arial, 24 pt, bold, mixed case

Secondary topic using Arial Narrow, 20 pt, bold, italic

Content is in Arial Narrow, 16 point without bolding
Within a block of text, underline is useful for stopping the eye.

Add background colour & border

Add white space

Indent

K.I.S.S.
- 2 fonts
- 3 treatments
- 5 combinations

Some general rules to follow to help keep reports looking clean. Try to limit the use of font to two types, second use only 3 treatments. In the example above there are 3 treatments being used. Capitalization is one, Font size 24 pt, 20pt and 16 pts is the second treatment, and the font style of bold, italics and normal is the third treatment.

2.2.3 Aesthetic Appeal

The easiest way to maintain consistency with report building to is establish a style guide. It's easiest to start with the 4 or 5 most frequently used reports to establish some ground rules before expanding too quickly. First take one report and identify the various pieces on it such as the page header/body/footer areas, and examine what is normally found in each area.

The second part is to identify a layout grid to be used. Typically there is a layout grid that can be designed for a portrait style report and one for landscape.

The last part of the style guide is the colour palette that is to be used. From the example below (diagram 10) you can see which reporting elements are using which colours and in the lower corner the colours selected for the chart palette are 5 colours with their corresponding half-tone colours used as the second and third shades.

Diagram 10
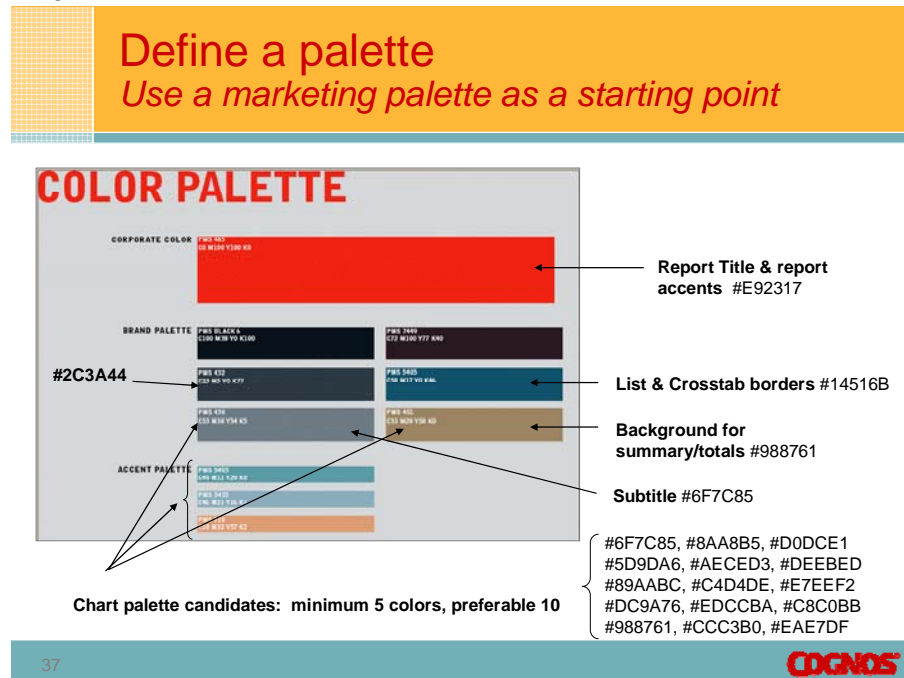
The general rule for chart palettes is that each adjacent colour has to be differentiated through contrast or what is sometimes referred to as colour value.

3   Appendix A

Alternate resources are available to help with report design. Below are a couple of recommended resources which have information pertaining to designing reports.

Stephen Few,
   http://www.perceptualedge.com
   http://www.perceptualedge.com/blog

Stephen Few, *Show Me the Numbers: Designing Tables and Graphs to Enlighten*, Analytics Press (September 28, 2004)

Stephen Few, *Information Dashboard Design*, O'Reilly Media (January 1, 2006)

Edward Tufte
   http://www.edwardtufte.com/tufte/

Edward Tufte, *The Visual Display of Quantitative Information* , Graphics Press; 2nd edition (May 2001)

Edward Tufte, *Beautiful Evidence*, Graphics Press (June 2006)

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