

# DATA, DATA everywhere! Now what?

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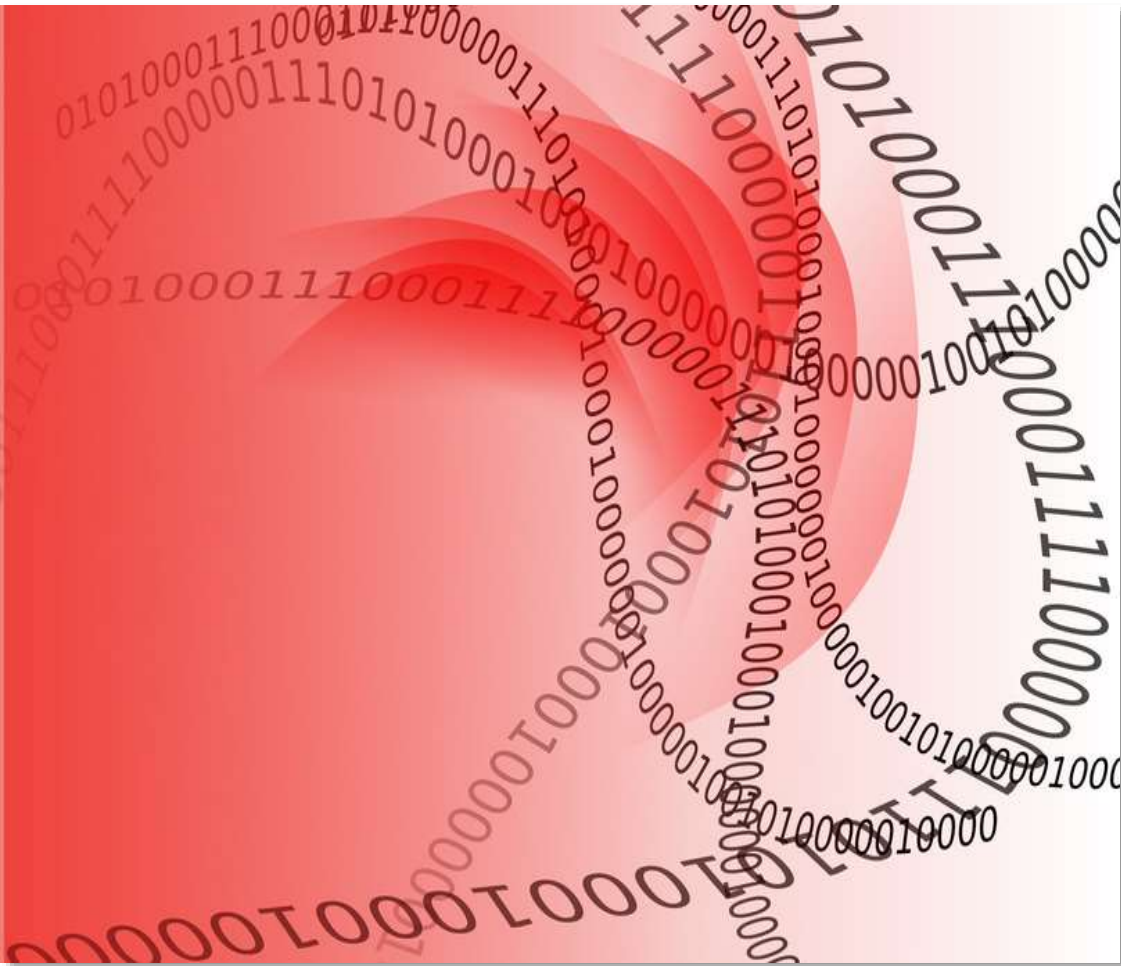
# The good ol' days

- Paper
- Files
- Calculators
- Copiers



- Lower expectations

# ...But now we're electronic



- EHRs
- Analytics
- Information Exchanges
- Data Warehouses
- Mobile Devices
- Business Intelligence

# New Challenges

## Ineffective

- Disparate data
- Conflicting reporting initiatives
- Backlog of unfulfilled requests
- Inflexible reports



## Effective

- Harmonized data
- Enterprise-wide reporting initiative
- Request prioritization system
- Flexible information

# Reporting Capability Levels

## Level 1: Standalone spreadsheets

- **Pros:** Inexpensive, available, good for impromptu reporting
- **Cons:** susceptible to error, security risk, subjective analysis, silos

## Level 2: Operational reporting

- Generated by a single transactional system
- **Pros:** measuring & optimizing operational processes
- **Cons:** little support for historic data, affects only a segment of the organization, no support for cross-business unit analysis & hierarchies

# Reporting Capability Levels

## Level 3: Tactical reporting

- Reporting tool that spans the organization
- Databases distinct from transactional systems
- **PROs:**
  - Common presentation
  - Support for historical data & versioning
  - Support for hierarchies and master data across reports for one or more departments & business units
- **Cons:**
  - Lacks dimensional conformance, standard report metadata and standardized master data

# Reporting Capability Levels

## Level 4: Enterprise reporting

- Integrated reports supported by:
  - The ability to query conformed data from multiple source systems
- Active enterprise reporting strategy
  - Scope & Purpose of reports across the enterprise
  - Audience analysis & report types
  - Reporting scheduling & frequency
  - Presenting text, tables & charts
  - Managing hierarchies & drill paths
  - Creating bi-directional reports
  - Tracking report usage patterns
  - Making necessary changes

# How to climb the levels?





# Focus on the goal

- Document organizational goals
- Secure executive sponsorship
- Identify stakeholders
- Align projects to goals
- Communicate

# Have a plan for the data

- Recognize
- Prioritize
- Centralize
- Normalize
- Homogenize
- Visualize


# Resist Spreadsheet Proliferation

- Time consuming
- Inconsistent results
- Loss of trust in the information
- Limited use

# Best Tool Choices

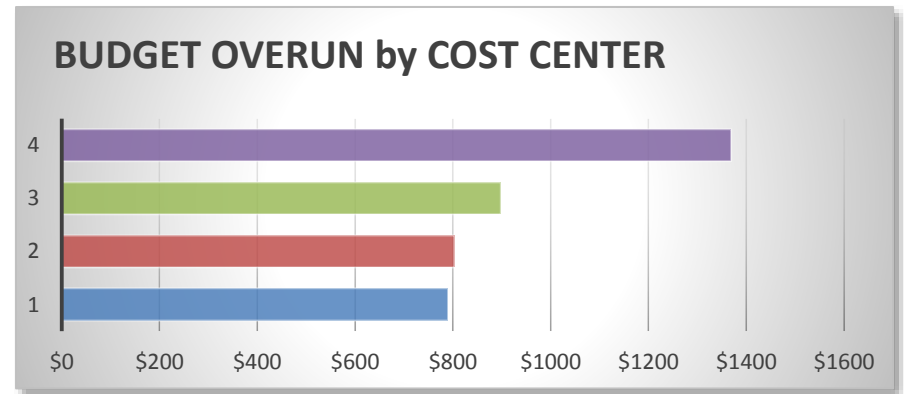
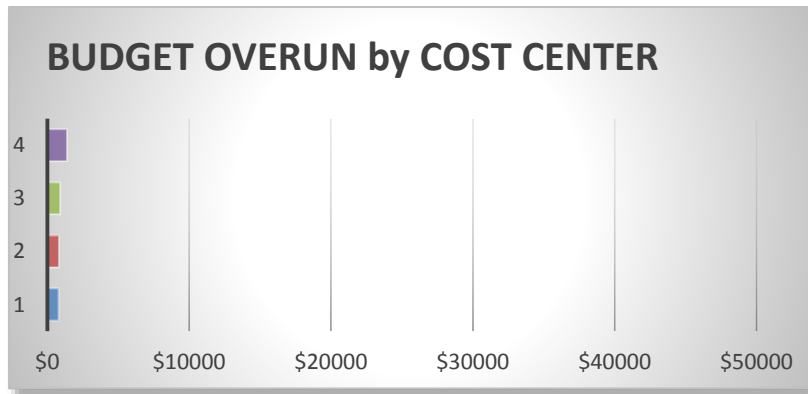
## Tool

## Best use

- 
- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Grid</li></ul>          | <ul style="list-style-type: none"><li>• Lots of data, drill down, research</li></ul>   |
| <ul style="list-style-type: none"><li>• Dashboard</li></ul>     | <ul style="list-style-type: none"><li>• Quick glance, daily status</li></ul>           |
| <ul style="list-style-type: none"><li>• Graph</li></ul>         | <ul style="list-style-type: none"><li>• Trends, comparisons</li></ul>                  |
| <ul style="list-style-type: none"><li>• Control Chart</li></ul> | <ul style="list-style-type: none"><li>• Process improvement</li></ul>                  |
| <ul style="list-style-type: none"><li>• Indicators</li></ul>    | <ul style="list-style-type: none"><li>• Status on goals over time</li></ul>            |
| <ul style="list-style-type: none"><li>• “Cubes”</li></ul>       | <ul style="list-style-type: none"><li>• On the fly analysis</li></ul>                  |
| <ul style="list-style-type: none"><li>• Ad Hoc</li></ul>        | <ul style="list-style-type: none"><li>• For special requests, one time needs</li></ul> |

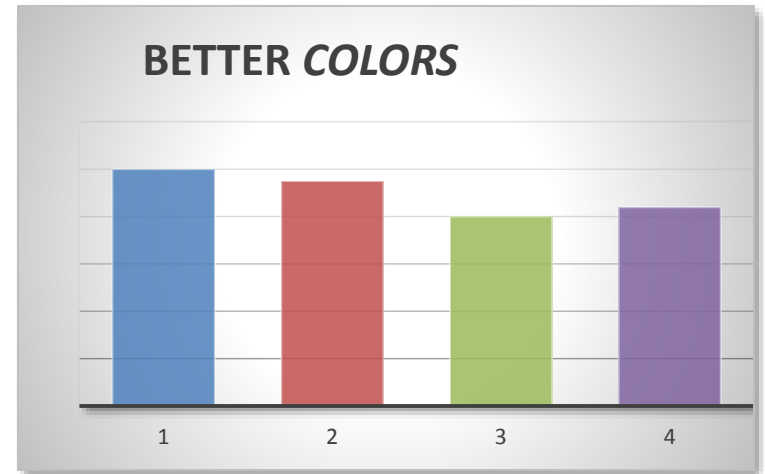
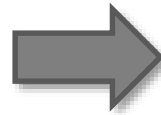
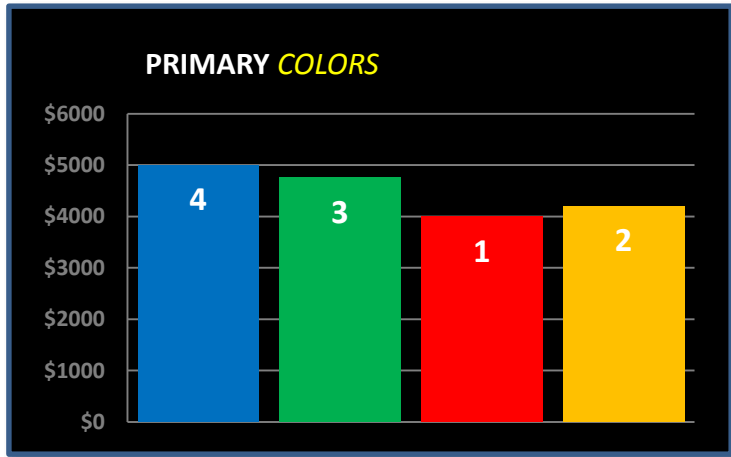
# Tips for Better Charts

- Don't distort the data
  - Clearly define the scale
  - Use text to clarify data variables and key data values
  - Consider a link to the underlying data to avoid clutter



*Same data...but different scale*

# Tips for Better Charts (2)

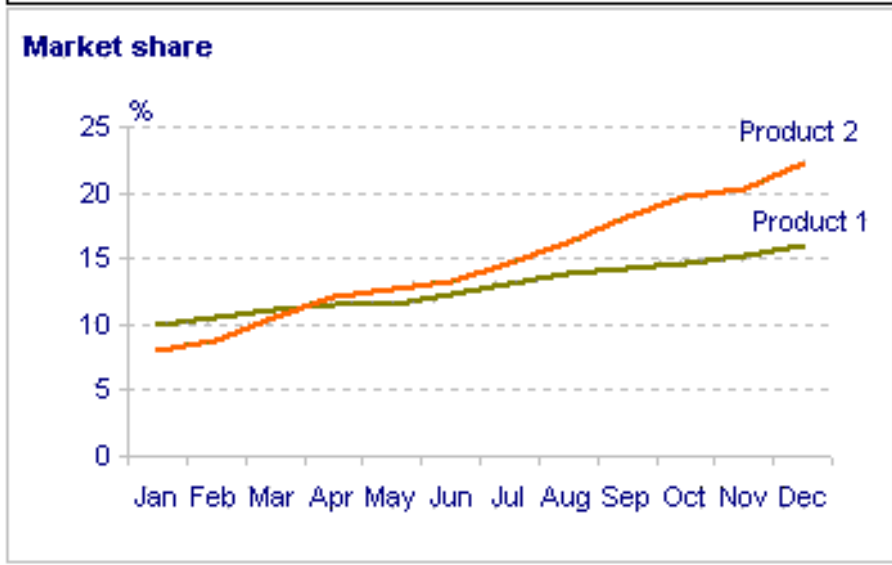
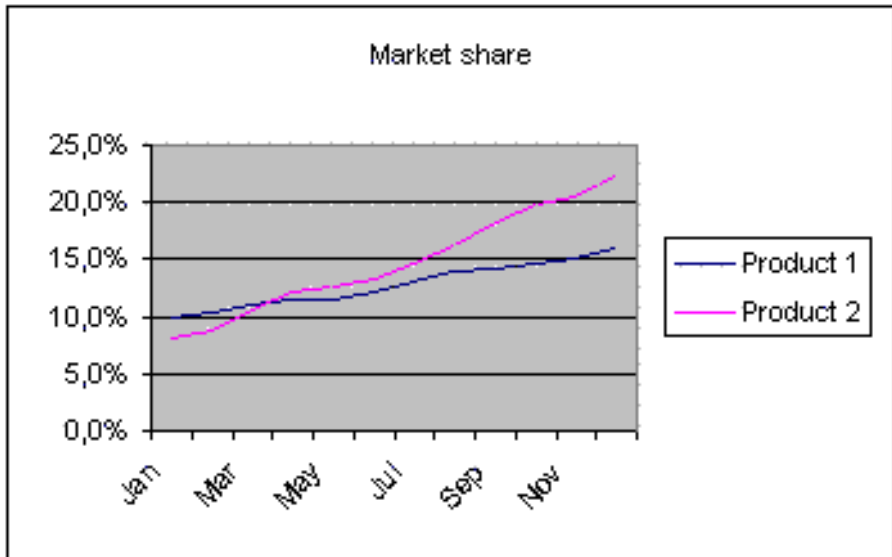


- Be careful with color
  - Bold, primary colors should be limited
    - because they are hard on the eyes
    - everything stands out...so nothing stands out
    - use primary colors to highlight a data point
  - Use grays for non-data elements like grid lines
  - Use pale colors for color-coding

# Data Visualization

- Communicate information clearly and effectively
- Balance aesthetic form and functionality
- Stimulate viewer engagement and attention

# Simplicity

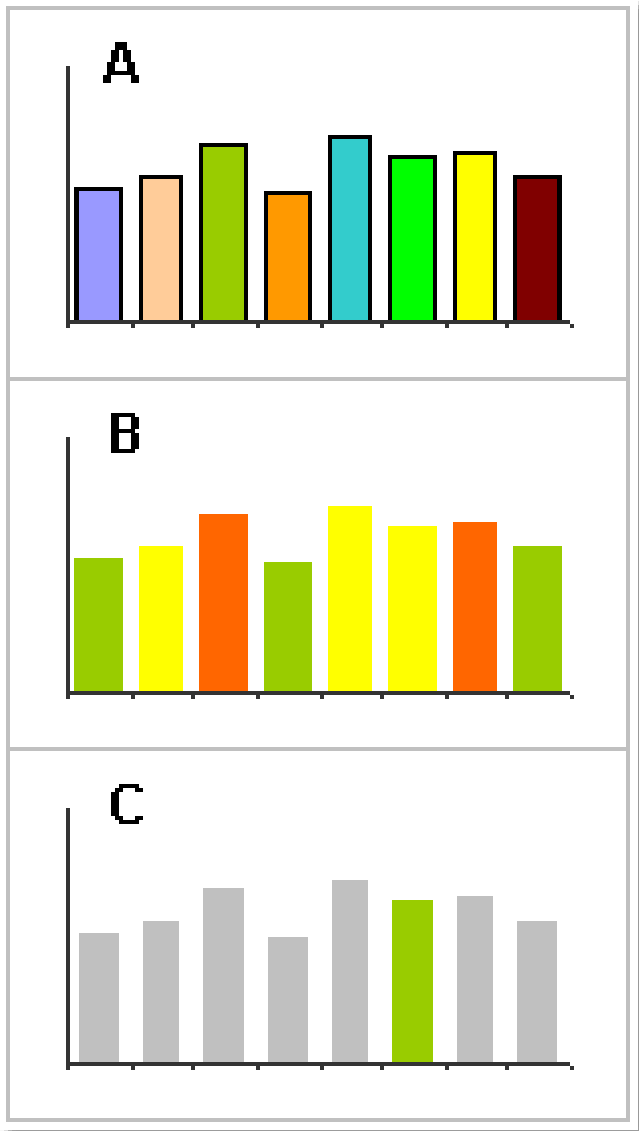


## Compare these charts:

- Removed **gray background**
- Removed the **decimal place** on the Y-axis (which gives an irrelevant illusion of precision)
- Muted the **gridlines** (which are supporting actors that you can leave in the background)
- Replaced the legend with **direct labeling** of each series (which is easier to read)



# Relevance



**Variation** should carry a meaning, derived from data variation, not from design variation

**Chart A** displays patient visits by physicians. The reader will try to find a key for the color code (there is none, but he doesn't know)

**Chart B** illustrates a grouping variable (i.e. GPs vs. pediatricians vs. OB/Gyns)

**Chart C** emphasizes the newest practice to join the group

# Areas of Focus for Key Initiatives

- **Operational Reporting**

- FTE comparisons
- Budget to actual comparisons
- Aging reporting
- Net contribution

- **Performance Improvement**

- Admission & discharge trending
- Service line analysis
- Reimbursement patterns
- Competitive position

- **Quality Reporting**

- Compliance to CORE measures
- Accountability of care measures
- Process accuracy
- Risk management

- **Meaningful Use Reporting**

- Compliance to objectives
- Improve care coordination
- Privacy & security
- Patient engagement

# Consistency in Common Data

- **Operational Reporting**

- FTE comparisons

- **Quality Reporting**

- Compliance to CORE measures

es

**Cost  
Centers**

**Length of Stay**

Service  
Lines

**PROCEDURES**

Patient  
Satisfaction

Doctor  
Master

Definition  
of FTE

- Reimbursement patterns

- Privacy & security

- Competitive position

- Patient engagement

# The Blueprint

**Step 1 – Engage an Executive Sponsor**

**Step 2 – Meet with stakeholders**

**Step 3 – Agree on three guiding priorities**

**Step 4 – Centrally manage the data**

**Step 5 – Develop data visualization skills**

**Step 6 – Communicate regularly**

**Step 7 - Automate**

**Step 8 – Monitor usage**

