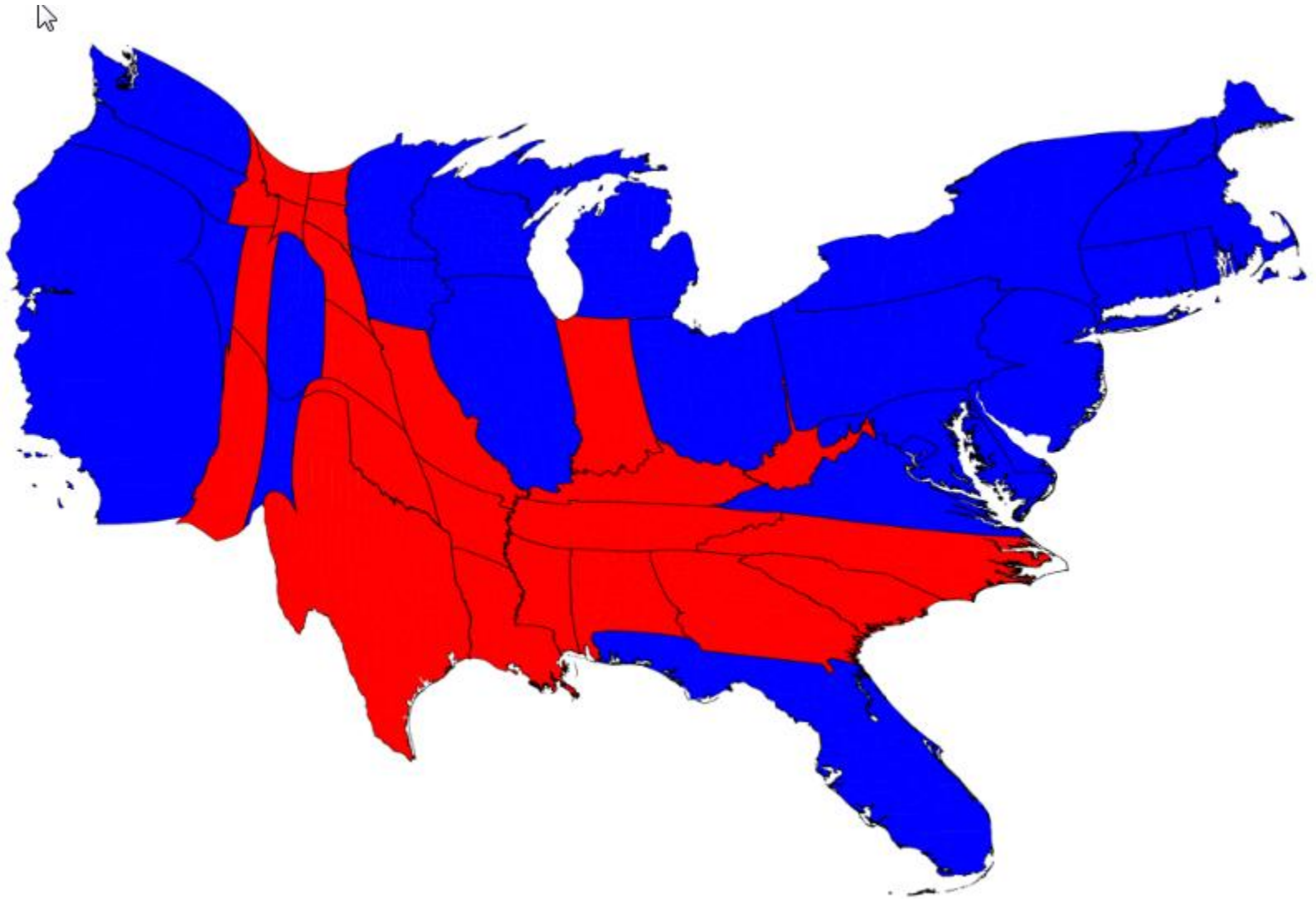
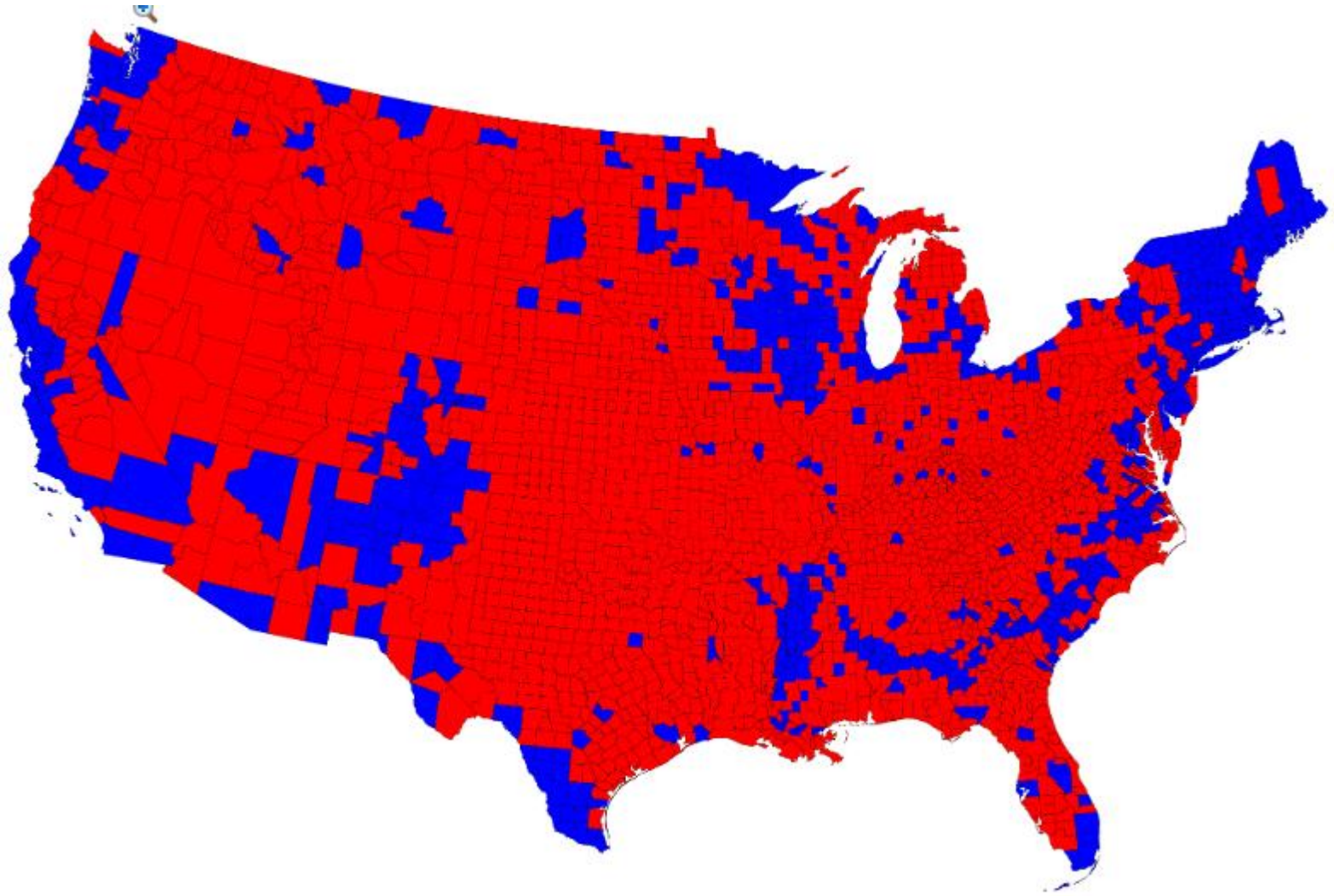


# Data Visualisation for Auditors

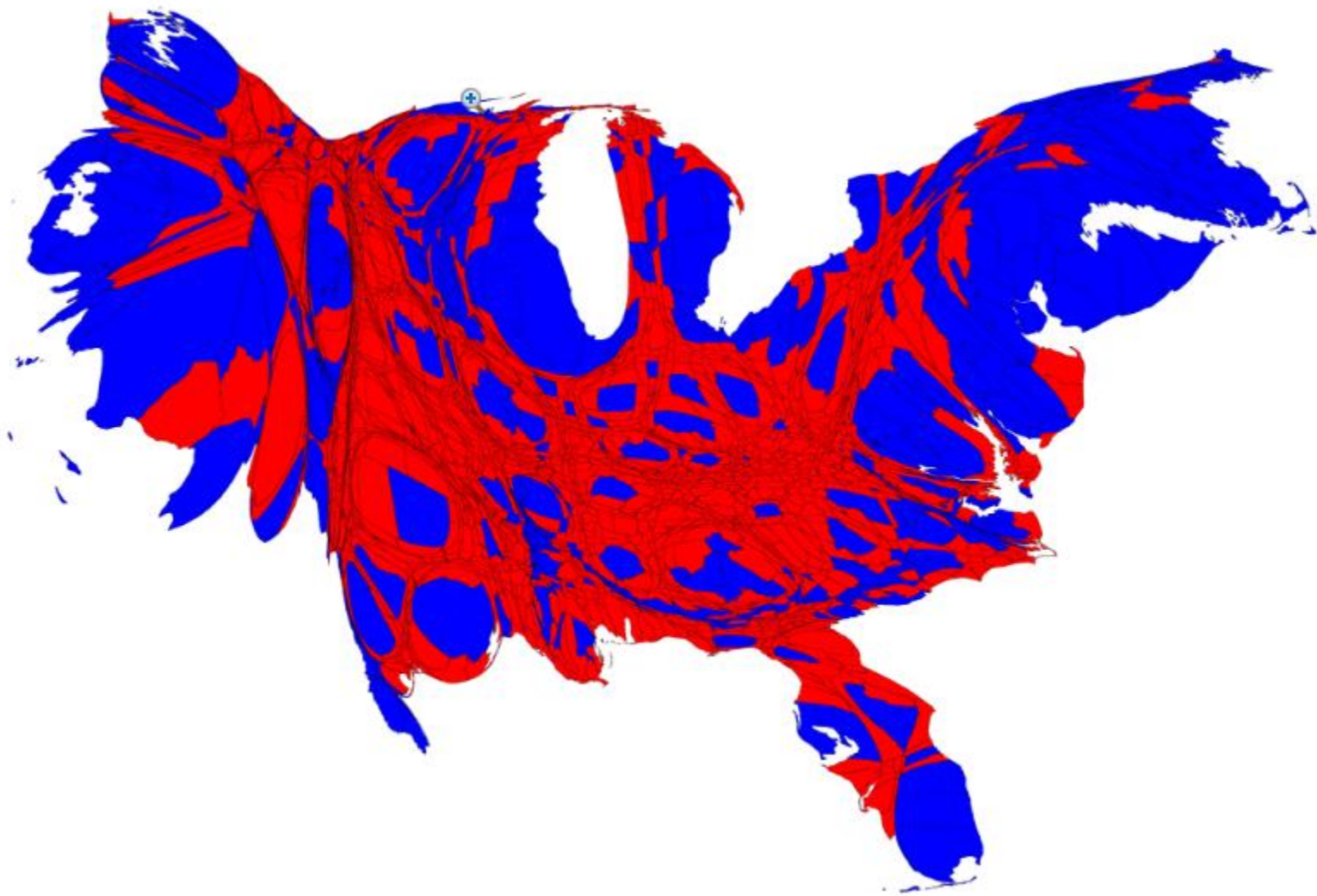
Gavin Steinberg  
Satori Group











# 2012 PRESIDENTIAL RUN

GOP CANDIDATES



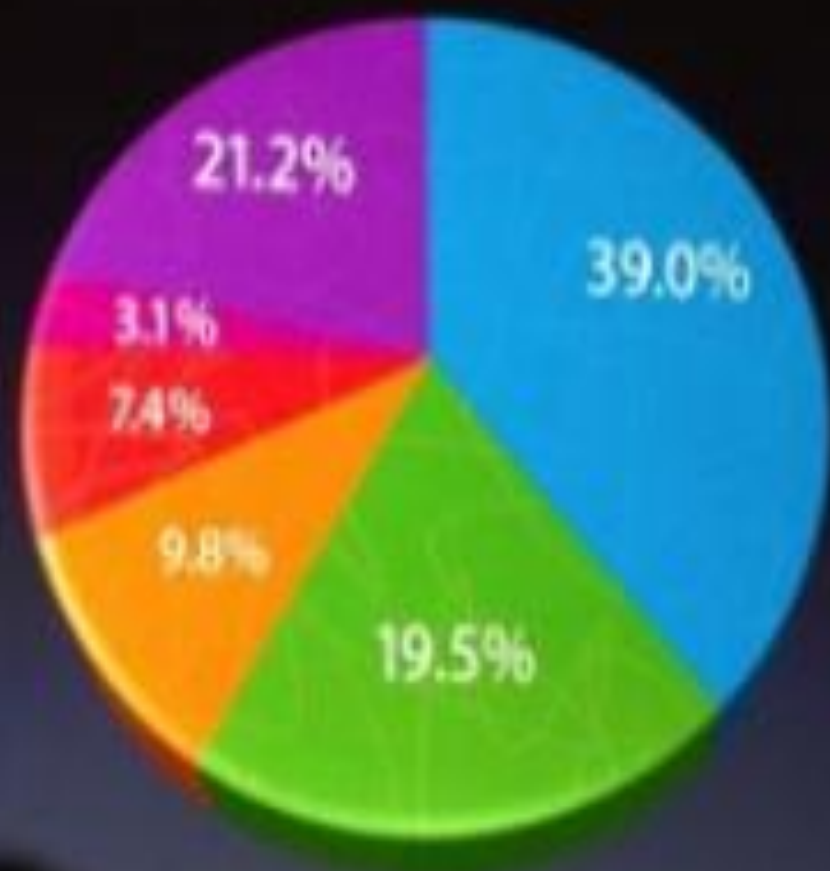
**FOX**

47'

SOURCE: OPINIONS

DYNAMIC

# U.S. SmartPhone Marketshare



# agenda

- What are dashboards and why have them
- Audit's need for Dashboards
- Some tips for dashboard design
- Benefits offered for Audit



**Visual Display**  
of  
**the most important information needed to  
achieve one or more objectives**  
which  
**fits entirely on a single screen**  
so it can be  
**monitored at a glance**

Stephen Few (Information Dashboard Design)

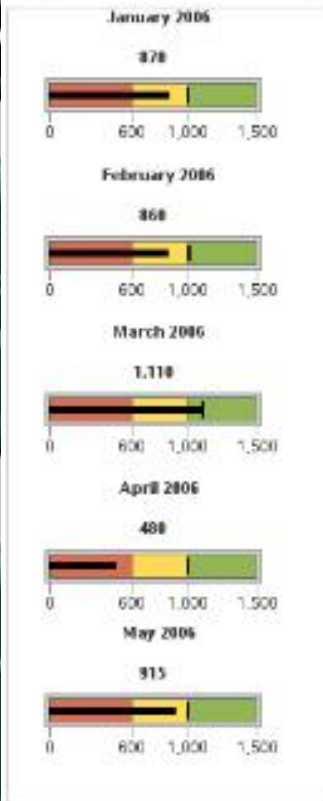
- Most information dashboards fall far short of their potential.
- The problem is not technology but poor design.
- Want a dashboard for the right reason!
- It is all about effective | efficient communication
- It isn't about the sexy sizzle visual but what it says



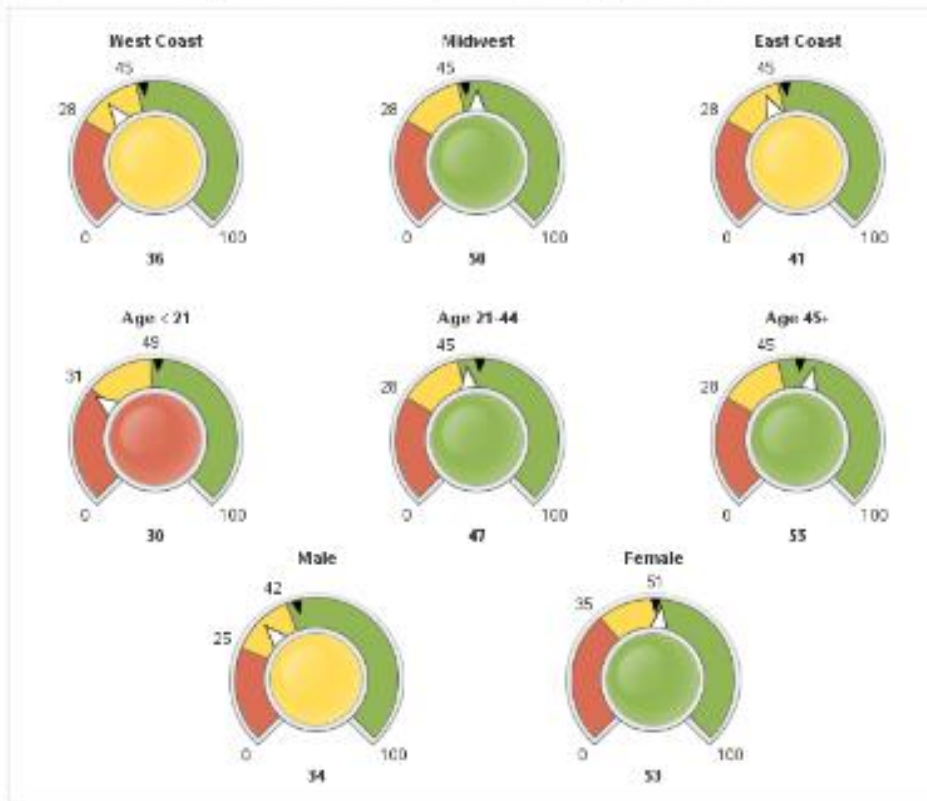
**“Dashboards are not an appropriate venue for artistic impression” – Stephen Few**



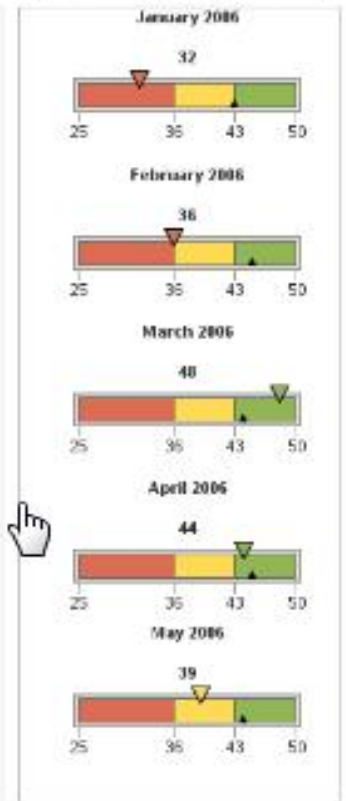
Magazine unit sales via website, by issue



Magazine renewal rates, by customer demographics: 2006 YTD



Advertising revenue, by issue (thousands)



Magazine revenue: May 2006 by source (thousands)



Website clicks: May 2006



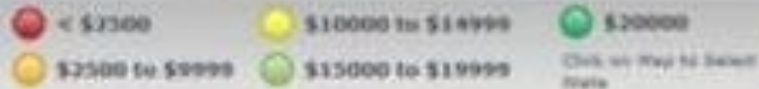


## US Sales Map

April 24, 2009



### Total Sales Rank



## Arkansas YTD Sales



- Boston Crab Meat
- Grandma's Jam
- Jersey Chowder
- NutraNut
- Steeleye Stout
- TWZZLK

## US Sales



- Boston Crab Meat
- Grandma's Jam
- Jersey Chowder
- NutraNut
- Steeleye Stout
- TWZZLK

Arkansas	YTD Sales	Product Share	US Sales	Product Share
Boston Crab Meat	\$7,744	44%	\$119,736	10%
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Steeleye Stout	\$1,007	6%	\$113,523	17%
TWZZLK	\$3,136	18%	\$107,464	10%
<b>TOTAL</b>	<b>\$17,520</b>	<b>100%</b>	<b>\$879,427</b>	<b>100%</b>

# Why Audit Dashboards

- Access to data no-one else can get to
- Ability to view across silos
- Look at data objectively
- Might already be doing data analytics
- Same data but different aspect to what business looks at
- Give Assurance to Management
- Often Business cannot get this insight
- Communicate what | how audit is doing



# Dashboard Measures

- Cost Recovery
- Customer Satisfaction Survey
- Management Satisfaction Survey
- External Auditor Satisfaction Survey
- Stakeholder Satisfaction Survey
- Hours/Costs per Audit
- Utilisation Rates
- Quality Assessment Results
- Average Business Days to Issue Reports
- Aging of Outstanding Audits
- Risk Coverage
- Retention/Turnover
- Training hours/dollars per Auditor
- Age of Outstanding Findings
- Audit Plan Completion
- Staff Utilization
- Number of Repeat Findings
- IA Costs as % of Revenues/Assets
- FTE per Revenue
- Audit Plan as % of Audit Universe
- Audits per Auditor

# Areas for an Audit Dashboard

**Staff development metrics** (e.g., number of staff credentials compared to similar organizations and staffing activity, such as promotions, auditor rotation into management positions, transfers to other departments, number of staff brought into the internal audit activity from other business units, and terminations).

**Audit plan management metrics** (e.g., audit deliverables by month, audit reports per full-time equivalent, number of completed projects and reports issued, time use by individual staff members and type of activity, corrective action status to identify past due corrective actions, cycle times for the audit and reporting process, and planned versus actual hours worked by audit project).
















**Client satisfaction and coverage metrics** (e.g., quantification of post-audit client satisfaction scores and audit resources by area and topic).

**Value creation metrics** (e.g., quantifiable audit results and number of audits requested by management).



# Example of content to measure

Figure 1: Tools Used to Monitor Performance and Assurance Quality

Response	Chart	Frequency
Compliance with a budget		81.4%
<b>Compliance with the audit plan (number of audits planned vs. executed)</b>		<b>92.9%</b>
Audit time management: planning, field-work, closing (plan vs. real)		59.3%
Reporting time management (plan vs. real)		59.3%
Efficiency in the use of resources (e.g. tests per day, man-days per audit, etc)		15.9%
Number of recommendations offered		16.8%
Number (or percent) of recommendations implemented		32.7%
Number of key findings detected		10.6%
Cost recovery (audit savings)		14.2%
Auditor training metrics		53.1%
Satisfaction surveys from auditees		77.0%
Satisfaction surveys from audit committee		14.2%
Audit complaint records		8.8%
Number of management requests		26.5%
Role of internal auditing viewed by the audit committee		36.3%

### ACCOUNT PAYABLE

Report Name	Issues Generated			
	Current Month	Last Month	Variance	12 month total
AP001A. Duplicated Invoices by InvNo,Amt,Date and VndNbr - UnPaid	37	56	▼	518
AP001B. Duplicated Invoices by Invoice number, vendor number and amount (different date)- Paid	7	0	▲	21
AP001B. Duplicated Invoices by Invoice number, vendor number and amount (different date)- Unpaid	71	403	▼	743
AP001D. Duplicated Invoices by Invoice number, amount, and date (different vendor number)- Unpaid	12	26	▼	117
AP019. Identify Vendors without Transaction within 24 months (Created Date>6months)	19	48	▼	187
<b>Total</b>	<b>146</b>	<b>533</b>		<b>1,586</b>

### VENDOR

Report Name	Issues Generated			
	Current Month	Last Month	Variance	12 month total
VM003. Identify Vendors with Active ABN without Registered GST	1	2	▼	19
VM006. Identify Vendor with Incorrect ABN Format	1	0	▲	1
VM009. Identify Vendors missing ABN	2	5	▼	19
VM010. Duplicate Vendor Bank Accounts	8	6	▲	20
VM013. Identify vendors whose Bank Account No. has changed	7	24	▼	96
<b>Total</b>	<b>19</b>	<b>37</b>		<b>155</b>

### PAYROLL

Report Name	Issues Generated			
	Current Month	Last Month	Variance	12 month total
PR003. Identify payments to employees 30 days after termination date - Summary	1	1	○	38
PR019. Top 30 overtime employees in Month and Year-to-Date	171	353	▼	962
<b>Total</b>	<b>172</b>	<b>354</b>		<b>1,000</b>

### EMPLOYEE

Report Name	Issues Generated			
	Current Month	Last Month	Variance	12 month total
EM001A. Identify duplicate employees: By Name	17	10	▲	38
EM001B. Identify duplicate employees: By Address	69	44	▲	207
EM001C. Identify duplicate employees: By Telephone No.	8	8	○	21
EM001D. Identify duplicate employees: By Tax File No.	130	68	▲	293
EM001E. Identify duplicate employees: By Bank Account	10	2	▲	30
EM002. Identify Employees with missing details	9	3	▲	17
EM002G. Identify Employees with missing Salary Details: Pay Rate/Contracted Hours / Pay Class/ Super Details	148	15	▲	496
EM008C. Identify TFNS that do not conform with				
<b>Total</b>	<b>427</b>	<b>169</b>		<b>1,174</b>

SCORECARD ACC PAYABLE VENDOR PAYROLL EMPLOYEE

Report: All values

Duplicates by Vendor

Month: July 2012 15

Vendor	Duplicate Count	Duplicate Amount	Transaction Count	Transaction Amount	Duplicate Count %	Duplicate Amount %
BSH HOME APPLIANCES PTY LTD	1	4,711	2	9,423	3 %	43 %
SYNNEX AUSTRALIA	1	2,807	2	5,615	3 %	25 %
SONY AUSTRALIA PTY LTD	5	2,452	11	3,396	15 %	22 %
HAGEMEYER PTY LTD	2	485	4	972	6 %	4 %
AUDIO VISUAL REVOLUTION PTY LTD	1	440	1	440	3 %	4 %
AVICO ELECTRONICS	1	440	1	440	3 %	4 %
SONY MUSIC	1	292	2	584	3 %	3 %
EAGLE ENTERTAINMENT	1	232	1	232	3 %	2 %
REVIVE TECHNOLOGIES (INTERNATIONAL )	1	200	2	400	3 %	2 %
<b>Total</b>	<b>34</b>	<b>11,043</b>	<b>69</b>	<b>16,162</b>	<b>100 %</b>	<b>100 %</b>

Duplicates by Month

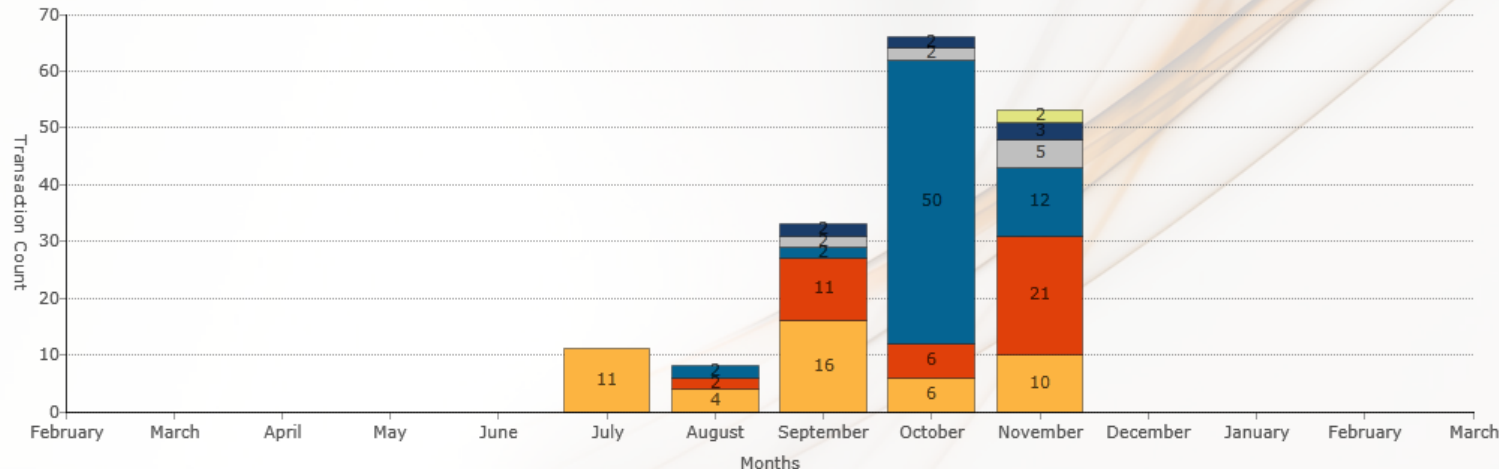
Vendor: APPLE PTY LTD,...

Period	Duplicate Count	Duplicate Amount	Transaction Count	Transaction Amount	Duplicate Count %	Duplicate Amount %
November 2012	14	18,180	53	59,440	26 %	28 %
October 2012	20	29,705	66	61,618	38 %	46 %
September 2012	10	5,458	33	-6,683	19 %	8 %
August 2012	4	8,494	8	16,989	8 %	13 %
July 2012	5	2,452	11	3,396	9 %	4 %
<b>Total</b>	<b>53</b>	<b>64,289</b>	<b>171</b>	<b>134,760</b>	<b>100 %</b>	<b>100 %</b>

Monthly Breakdown by Vendors

Metric: Transaction Count

- SONY AUSTRALIA PTY LTD
- APPLE PTY LTD
- POWERMIVE DISTRIBUTION PTY LTD
- REGENCY MEDIA PTY LTD
- TELECHECK PAYMENT SYSTEMS LTD (AUST)
- KENWOOD ELECTRONICS AUST P/L



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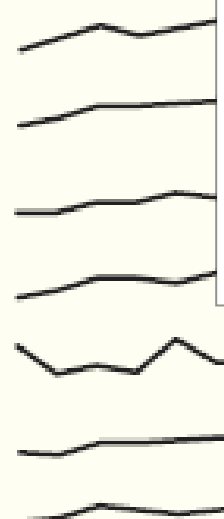
# Some tips for Designing Dashboards

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# Key Me

Past 12 M



October Units



YTD Units



Returns Rate

Good  
Actual

\$913,394

\$193,865

\$5,766

104%

New Customers



247

Cust Satisfaction



4.73

Market Share



19%

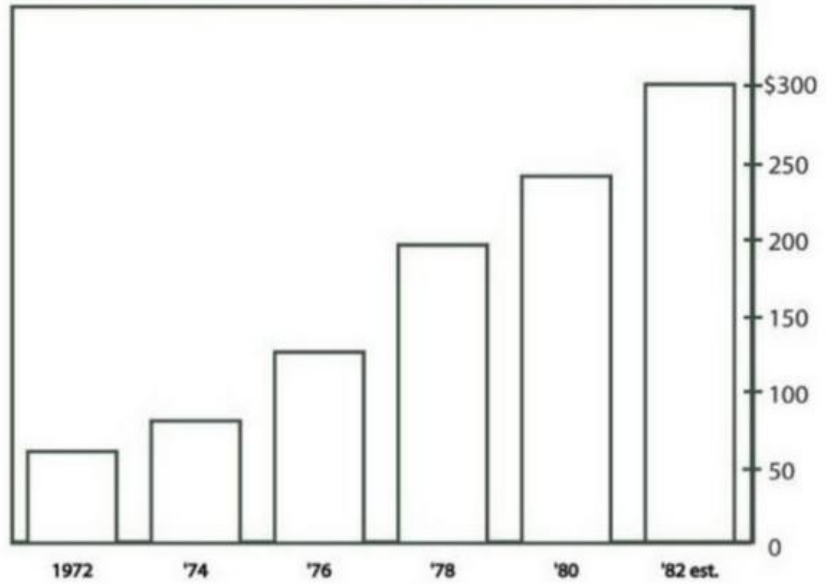
0% 50% 100% 150%

# MONSTROUS COSTS

Total House and Senate campaign expenditures, in millions



MONSTROUS COSTS  
Total House and Senate campaign expenditures, in millions

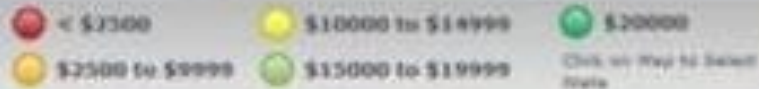


## US Sales Map

April 24, 2009



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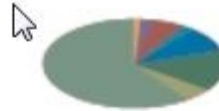
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# Better design

**CONSERVATIVE ASSET ALLOCATION MODEL** Conservative investors tend to be more interested in safety of principal, liquidity and income, rather than in long-term growth or capital appreciation. These investors are willing to accept lower returns for the potential to reduce volatility.

6% International  
2% Small Cap  
2% Mid Cap  
8% Large Cap  
2% Real Estate Securities



5% High Yield Bonds  
60% Bonds  
15% Cash/Cash Equivalents

**MODERATELY CONSERVATIVE ASSET ALLOCATION MODEL** Moderately conservative investors are interested in safety of principal, liquidity, and income, but also seek modest growth in the value of their investments. These investors are willing to take on a little more risk to achieve that growth, with the understanding that it may increase volatility.

12% International  
3% Small Cap  
5% Mid Cap  
17% Large Cap  
3% Real Estate Securities

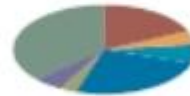


4% High Yield Bonds  
56% Bonds

*An alternative would be to use a multi-asset choice, in all or in part, to achieve a similar risk profile.*

**BALANCED ASSET ALLOCATION MODEL** Balanced investors are equally interested in safety of principal and long-term growth. These investors generally want steady and sustained growth without the volatility that high-risk investments can bring.

18% International  
5% Small Cap  
7% Mid Cap  
25% Large Cap  
5% Real Estate Securities



3% High Yield Bonds  
37% Bonds

*An alternative would be to use a multi-asset choice, in all or in part, to achieve a similar risk profile.*

**AGGRESSIVE ASSET ALLOCATION MODEL** Aggressive investors are primarily interested in long-term growth and are willing to take reasonable risks to achieve it. These investors are comfortable with the volatility that accompanies higher risk investments.

24% International  
6% Small Cap  
10% Mid Cap  
34% Large Cap  
6% Real Estate Securities

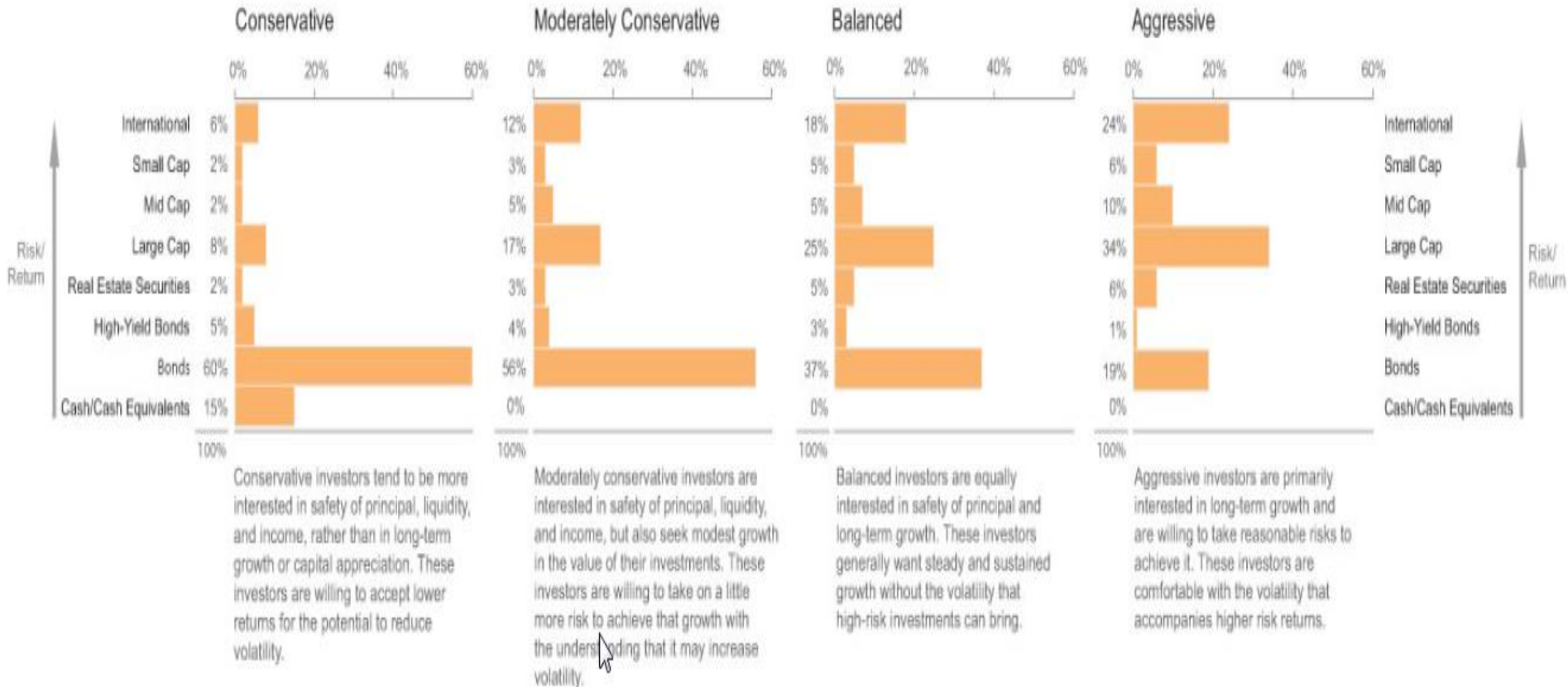


1% High Yield Bonds  
19% Bonds



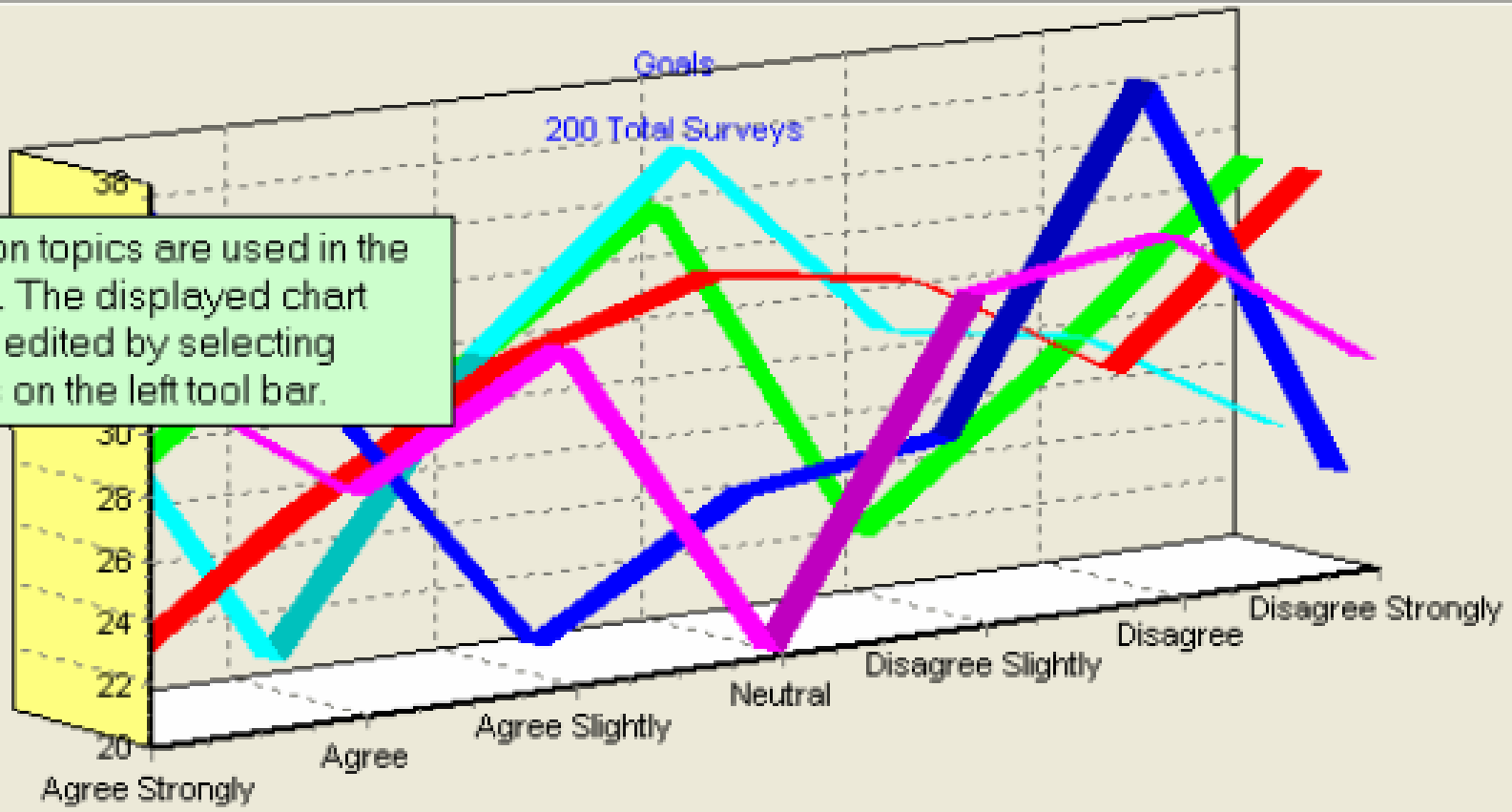
# Good Design

## Asset Allocation Models



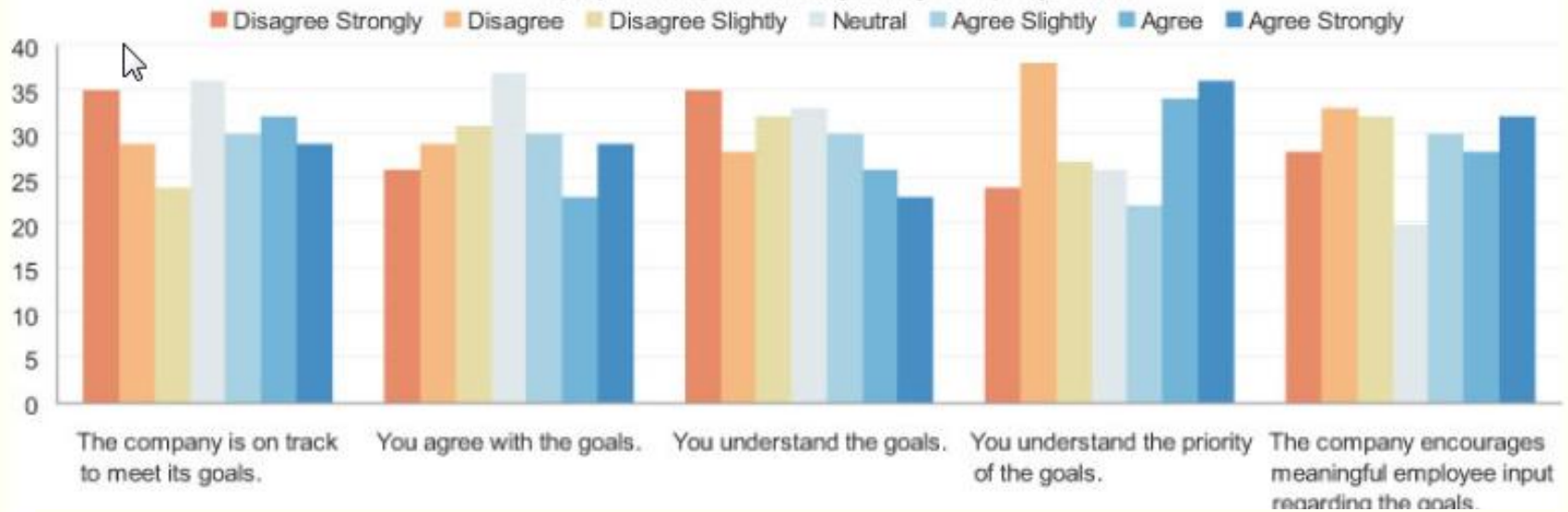


Question topics are used in the legend. The displayed chart can be edited by selecting options on the left tool bar.

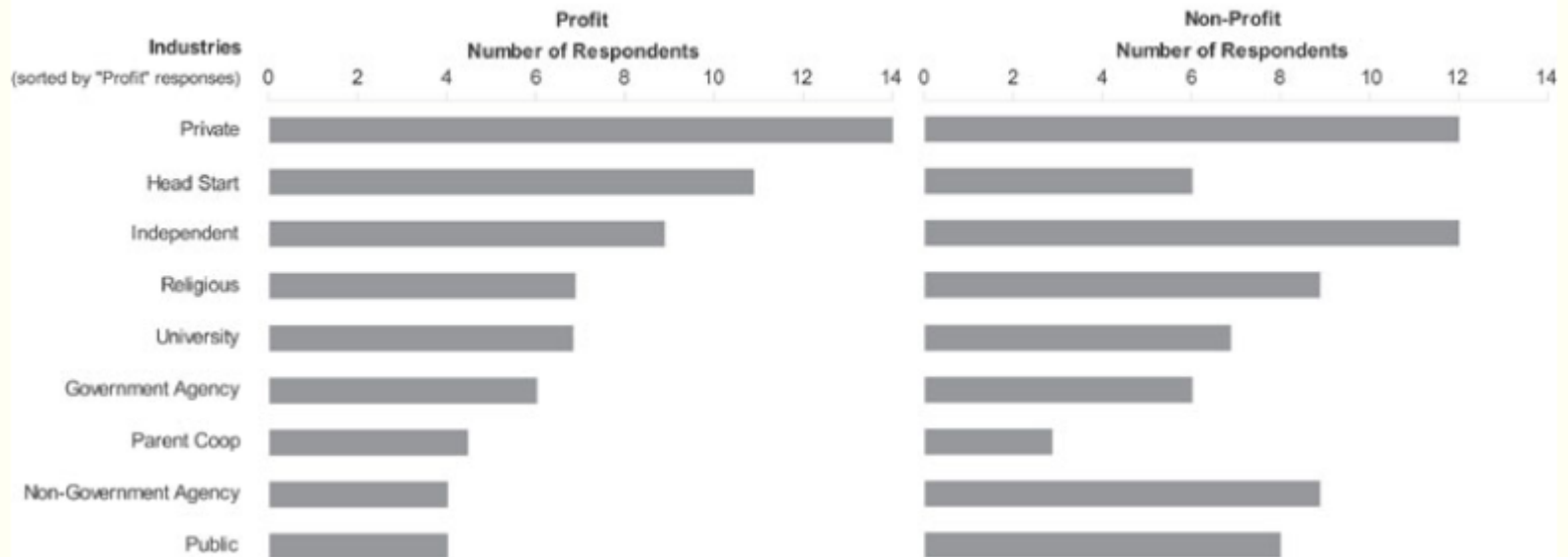


- Goals
- Agree with Goals
- Understanding
- Priorities are Understood
- Meaningful Input

### Employee Responses Regarding Company Goals



### Profit vs. Non-Profit Breakdown by Industry of Child Care Center Teachers Who Responded to the Survey



Student	Overall Course Grade	F D C B A					Assignments				Assessments		Attendance					Behavior						
		YTD	Spread	50%	Last	100%	Late	Last 5	Last	Jan 9	Feb 1	Mar 1	Apr 1	May 1	May 25	Ref	Det							
Frederick Chandler	E	F	●	X														2	2	1	1			
Bae Kim		F	●	X																3	2			
Fiona Reeves	S	D	X	●															1	1	1			
Brian Francis	S	D		●	X																			
Anthony Harper		D		●	X																			
Christopher Murphy		C	X	●																				
Kirsten Holmes		C		●	X																1			
Roshawn Dawson		C		●	X																1	1		
Nikolas Mikhailovich	E	C	X	●																				
James Martin		C		●	X																			
Blaine Harper		C	X	●																	1	1		
George Smith		C		●	X																1	1	1	
Regan Potrero		C		●	X																			
Britta Jones		B			●	X																		
Scott Ortiz		B		X	●																			
Xu Mei		B			●	X																		
Jaime Goss		B			●	X																1	1	1
Samuel Miller		B		X	●																			
Maria Garcia		B			●	X																2	1	
Jose Domingo		B			●	X																		
Lawrence Parker		B			●	X																1	1	
Fariah Jackson		B			●	X																		
Sarah Jameson		B			●	X																1	1	
David Chenowith		B		X	●																	1		
Alison Perry		B			●	X																		
Amala Singh		A			●	X																1		
Hannah LI		A			●	X																		
James Snow		A			X	●																		
Donald Chase		A				●	X															1	1	
Holly Norton		A				●	X																	

E = English language deficiency  
S = Special Ed student

13 11 6 6

Last term  
This term



“Dashboards are not an appropriate venue for artistic impression” –  
Stephen Few





# 6 Rules to use

## Rule 1 – Who are you trying to impress?

“Does the CFO really need to know the servers are operating at 95% capacity”

## Rule 2 – Select the right type of dashboard

There are 3 common types of dashboard, each performing a specific purpose.

- Operational
- Strategic / Executive
- Analytical
- Audit Assurance

# 6 Rules to use

## Rule 3 – Group data logically – Use space wisely

- Top left most important
- Centre for focus
- Left Right Centre Bottom Left Bottom Right
- Bottom Right least (logo bottom right)

# Rule 4

## Make the data relevant to the audience



# Rule 5

Don't clutter your dashboard. Present the most important metrics only



# Rule 6

## How often does the data really need to be refreshed

- Real-time (or near real-time)
- Daily, weekly, monthly

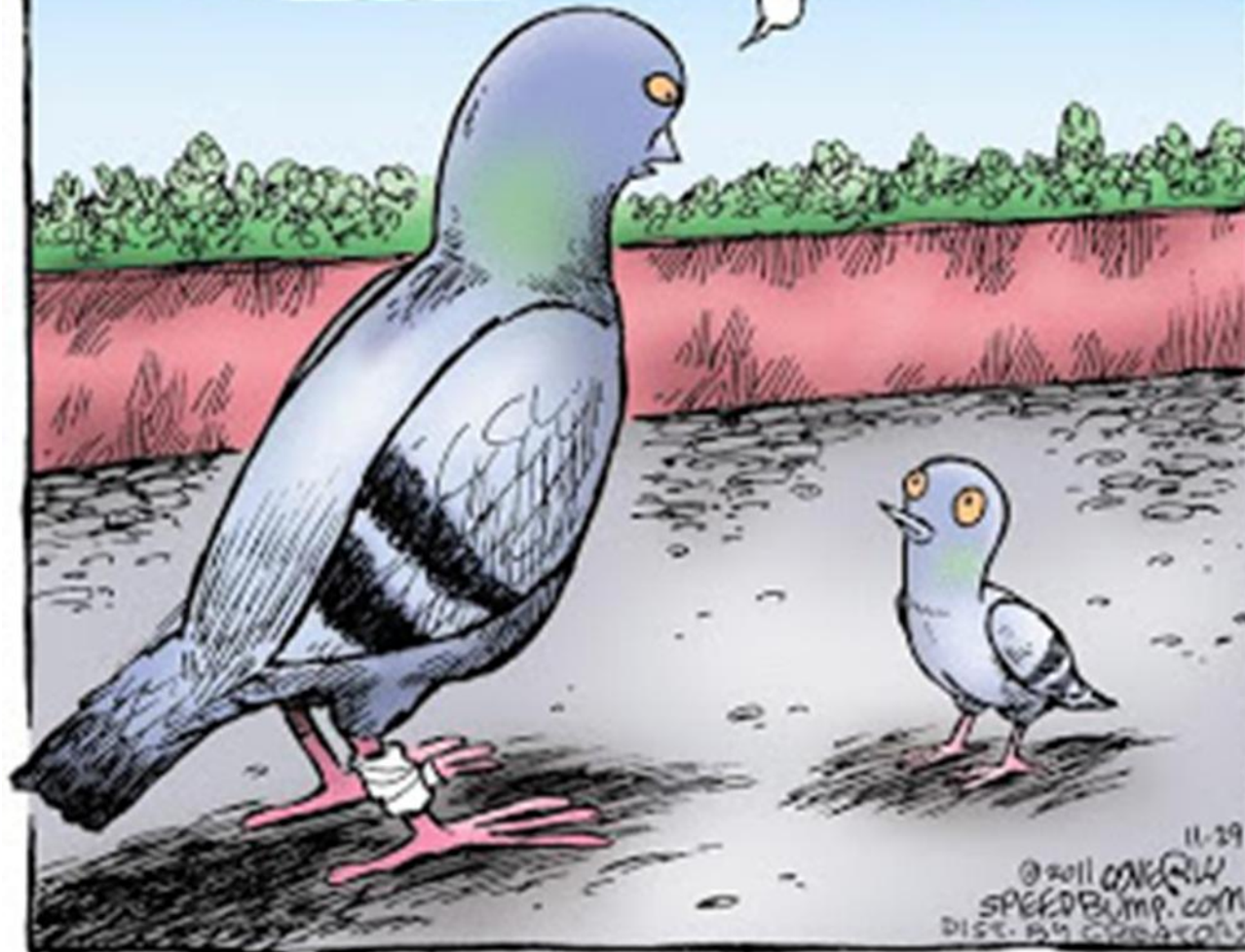
As a rule of thumb operational dashboard's require data in real-time or near real-time whereas **Audit dashboards** require data refreshed on a less frequent basis.



# A few more Tips

- Need to automate the data process
- Use of technology
  - Excel → Reports → Specialist Dashboard Solutions
- Colour
  - Charts
  - Alerts
- Efficient use of space
- Right visual for right data (not what looks good)
- Spark Charts
- Help Messages

I'M A CARRIER PIGEON, YOUR GRANDPA WAS A CARRIER PIGEON, ALL YOUR ANCESTORS WERE CARRIER PIGEONS... PROMISE ME YOU'LL LEARN TO TEXT.





- Communicate what Audit is doing effectively
- Give insight to management to data they cannot get
- Raise Internal Audit profile
- Share Audit insight with company
- Great Insight into the business
- Add **significant value** to business





# Thank You

