

# **MIS 0855 Spring 2015 – Data Science**

## ***Day 22 – Key Performance Indicators***

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# How would you measure performance of

- a baseball player?
- What would be the *key performance indicators* (KPI)?



<https://www.gobigrecruiting.com/blog/2014/03/kind-baseball-players-colleges-looking/>

# How would you measure performance of

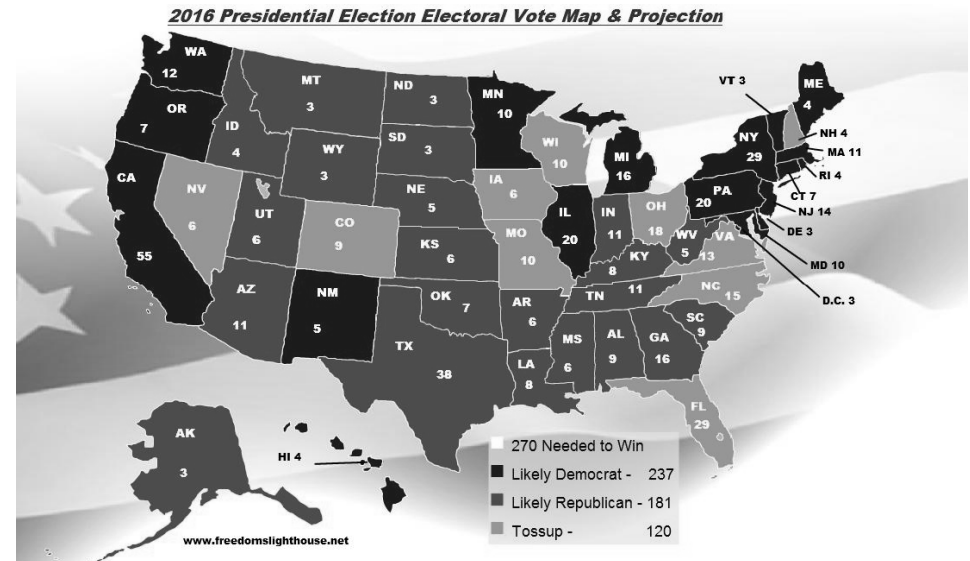
- a police department?
- What would be the KPIs?



[http://articles.glendalypress.com/2011-09-25/news/tn-gnp-0925-canines\\_1\\_police-dogs-third-dog-glendale-k-9s](http://articles.glendalypress.com/2011-09-25/news/tn-gnp-0925-canines_1_police-dogs-third-dog-glendale-k-9s)

# How would you measure performance of

- a political campaign (before the election)?
- What would be the KPIs?



<http://freedomslighthouse.net/election/2014-2016/2016-presidential-election-electoral-vote-map-polls-projections/>

















<http://www.dashboardinsight.com/dashboards/operational/us-election-2008-the-presidential-decision.aspx>

# ELECTION DASHBOARD 2012

Countdown to Election

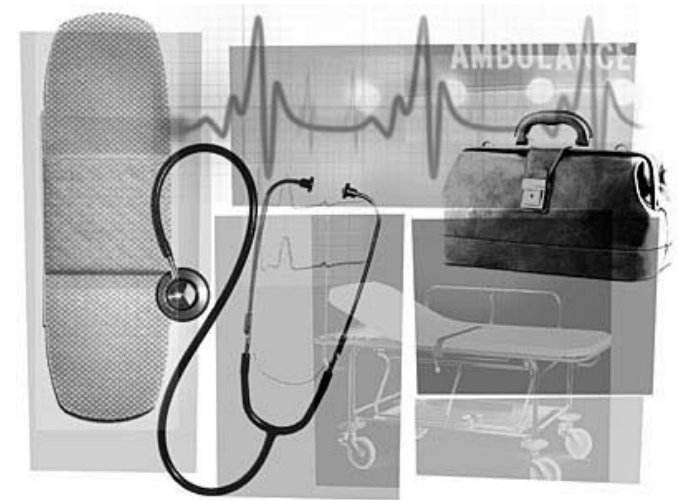
7 Months 23 Days 0 Hours 37 Minutes 42 Seconds

					
		Mitt Romney	Newt Gingrich	Rick Santorum	Ron Paul
	Like	1751527	295871	190613	933149
	Followers	430117	1466518	205695	278146
	Blogs	25800000 10% ↑ 49% ↓ 41% ↔ Sentiment Index	13100000 41% ↑ 50% ↓ 9% ↔ Sentiment Index	28600000 82% ↑ 9% ↓ 9% ↔ Sentiment Index	33800000 29% ↑ 15% ↓ 56% ↔ Sentiment Index
	News	40562 16% YouTube   49% Newspaper   35% Media	21196 74% YouTube   20% Newspaper   6% Media	35300 67% YouTube   15% Newspaper   18% Media	26561 29% YouTube   54% Newspaper   17% Media
	Maps				

<http://sourceforge.net/projects/electdashboard/>

# How would you measure performance of

- a hospital?
- What would be the KPIs?



<http://news.health.com/2012/12/02/25-worst-hospitals-in-the-u-s-is-yours-on-the-list/>

**Table 3. Examples of Measures in Various Dashboard Sets at Legacy Health System\***

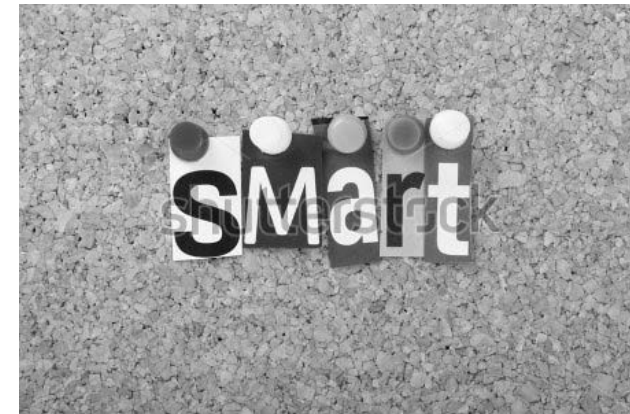
Customer Service Dashboard	Clinical Dashboard	Key Process Dashboard
■ Percent who recommend Legacy Health System to others	■ Mortality rate	■ Percentage of transfusions having reactions
■ Percent rating "5" (excellent) on survey items	■ Quality improvement	■ Accurate performance of transfusion protocols
■ Inpatient satisfaction with	■ Readmission rate	■ Adverse drug reactions
□ Parking	■ Central venous catheter infection rates	■ Medicine error severity ratio
□ Courtesy of staff	■ ORYX measures for acute care	■ Autopsy rate
□ Cleanliness	■ CABG mortality rates	■ Correlation between pathology reports and autopsy findings
□ Caring of staff	■ Aspirin administration within 24 hours postMI	■ Employee exposures to blood and bodily fluids
□ Quality of meals	■ Positive blood cultures in NICU	■ Hours of emergency room diversion
□ Follow-up education and instruction	■ Birth trauma among high-risk women	■ Code response time
□ Pain management	■ C-section rates	■ Restraint use rates
□ Overall satisfaction	■ C-section infection rates	■ Specimen rejection rates
	■ Surgical site nosocomial infection rates	■ Abnormal mammogram turn-around time
	■ Stage of cancer at diagnosis	

\* CABG, coronary artery bypass graft; MI, myocardial infarction; NICU, neonatal intensive care unit; C-section, cesarean section.



## Criteria for Good KPI – S.M.A.R.T (1/2)

- Specific
- Measurable
- Achievable
- Relevant to success
- Time-phased



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<http://www.shutterstock.com/pic-69572626/>

## Criteria for Good KPI – S.M.A.R.T (1/2)

<b>Specific</b>	The goal should state the exact level of performance expected.
<b>Measurable</b>	The progress should be able to observed and measured.
<b>Achievable</b>	The goals should be realistically achievable.
<b>Relevant</b>	Measures need to pertain directly and significantly to the performance challenge being managed.
<b>Time-phased</b>	There should exist a timeframe for the goal to be achieved.

## Why should KPIs be SMART?

- What would be the purpose of performance measurement?
  - to measure past performance
  - to reward good performance and to discipline bad one
  - to motivate for improvement in future performance
- For these purposes, KPIs need to be fair, objective, realistic, and relevant.





## Bad and Good KPIs

<b>Bad</b>	To introduce new products/service
<b>Good</b>	To introduce 4 new products/services by the end of 2015
<b>Bad</b>	To maximize customer satisfaction
<b>Good</b>	To increase customer satisfaction ratings to 90% by the end of Q3 in 2011
<b>Bad</b>	To reduce re-work in factories
<b>Good</b>	To achieve a 10% reduction in re-work within 6 months
<b>Bad</b>	To achieve market share growth
<b>Good</b>	To increase our market share in 2008 by 3% over 2006 level

<http://wearethepractioners.com/library/the-practitioner/2011/07/08/kpi-metrics-an-ongoing-discussion>  
<http://www.unh.edu/hr/sites/unh.edu.hr/files/pdfs/SMART-Goals.pdf>  
<https://nationalvetcontent.edu.au/alfresco/d/d/workspace/SpacesStore/>