### Management Reporting Systems

***1. Formulate the objective***

* 1. For each performance variable/characteristic to be monitored, formulate *a specific way of measuring it such that a numeric value can be meaningfully assigned to it* (= key performance indicator/KPI; metric) [*sample KPI from Cognos sales analysis*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-Cognos-Sales-Analysis.pdf)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-Cognos-Sales-Analysis.pdf>

 [*4 scales of measurement*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-Measurement-Scales.pdf)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-Measurement-Scales.pdf>

* 1. For each KPI, define *the numeric level above/below which performance will be considered acceptable* (= standard) [*benchmarking*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/Benchmarking.docx)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/Benchmarking.pdf>

1. ***Communicate the objective to all those concerned***
	1. ……. while guarding against behavioral anomalies [*the Hawthorne Effect*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-Hawthorne-Effect.pdf)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-Hawthorne-Effect.pdf>

***3. Produce the information***

3.1. Assure the transaction processing system collects/stores the required source data

3.2. Extract the relevant data into *an isolated, integrated, stable storage facility*

 (= data warehouse) [*Data Warehousing at Clovis Unified*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/Data%20Warehousing%20at%20Clovis%20Unified%20-%20highlights.docx)

[*http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/Data%20Warehousing%20at%20Clovis%20Unified%20-%20highlights.pdf*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/Data%20Warehousing%20at%20Clovis%20Unified%20-%20highlights.pdf)

3.3. Specify the required format for presenting the information

* 3.2.A. Specify the visual format (numeric, graphic) [*dashboards at Verizon*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/dashboards-at-verizon.docx)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/dashboards-at-verizon.pdf>

* 3.2.B. Specify the time format [*using salesforce.com to build a reporting system*](http://www.youtube.com/watch?v=IEBw6SF7PR4)
	+ periodic (annual, quarterly, monthly, weekly, daily, hourly)
	+ ad hoc (as needed)

3.4. Delegate the task of producing the report to those not impacted by it [*teachers cheating?!*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-SAT-9-Cheating.pdf)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS-SAT-9-Cheating.pdf>

***4. Analyze the information to identify possible …***

* *Abnormal/unacceptable deviations from the standard* (= symptoms)

 🡺 Reactive Management

* *Abnormal/suspicious trends* (= presymptoms)

 🡺 Proactive Management

[*a short, scientific discussion of symptoms/presymptoms*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/symptom-presymptom.pdf)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/symptom-presymptom.pdf>



A “fork in the road”:

IF there are no symptoms/presymptoms THEN

 ***5. Maintain the current operational system*** 🡺 It’s working, don’t rock the boat!

ELSE

 IF standard is set unreasonably high THEN

 ***5. Revise the standard; go back to step 1***

 ELSE <there are symptoms/presymptoms and the standard is to be maintained>

 Proceed to step 6

***6. Understand the problem by locating its source***

Develop user-driven software systems that allow decision makers to

6.1. *Break down the problem in terms of variables hypothesized to correlate with it* (= drill down) [*drill down at resort management*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/sample-reports-resort-management.doc)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/sample-reports-resort-management.pdf>

6.2. *Show the results in a multi-dimensional format, such as a cube* (OLAP = Online Analytical Processing)[*OLAP*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/olap.docx)

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/olap.pdf>

[*Oracle’s Express Web Analyzer*](http://zimmer.csufresno.edu/~sasanr/Teaching-Material/MIS/MRS/MRS%20-%20Oracle%20Express%20Web%20Analyzer.exe)

***7. Revise the operational system accordingly*** 🡺 Decision Making