The Business Value of Measurements

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Agenda

- The purpose and principles of measuring

- Measurement Roadmap

- Common measures

- Key Steps to Implementing a Measurement Program

- Validity of data

- Dashboards

- What to do with the data

- What not to do with the data

Current Economic conditions

- Unemployment rate is the highest it has been since 1983
- Every industry is feeling the pinch one way or another
- Companies aren't spending money like they used to
- Those that are want to be sure they are getting the greatest value for the money spent

What can you do?

- You need to differentiate your organization
  - Lower Cost

  - Increased Value

  - Higher Quality

  - Proven Stability/Durability
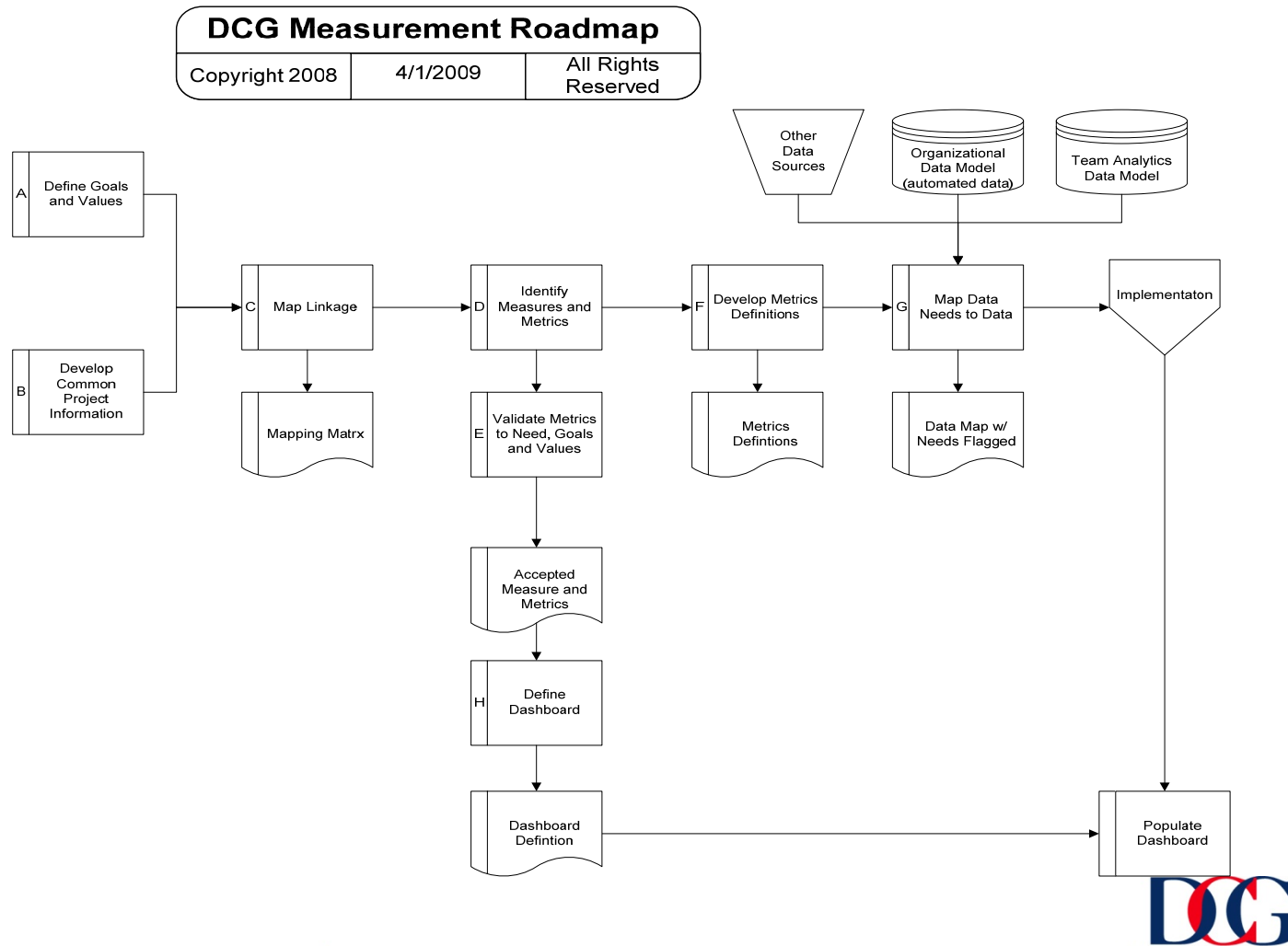
How do you measure up? Do you know?

- Baseline
  - Identifies where you are at that given place and time
    - Allows you to compare your organization to industry standards
    - Allows you to identify areas for improvement
    - Allows you to monitor change due to improvements

  - It's a way to compare performance levels among projects and departments in the organization

Who cares? Why Measure?

- Because:
    - You don't know when you have arrived if you don't know where you started
        - Use of a roadmap
        - Collection of data

Measurement Roadmap

DCG Measurement Roadmap

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Other Data Sources

Organizational Data Model (automated data)

Team Analytics Data Model

A — Define Goals and Values

B — Develop Common Project Information

C — Map Linkage

D — Identify Measures and Metrics

F — Develop Metrics Definitions

G — Map Data Needs to Data

Implementaton

Mapping Matrx

E — Validate Metrics to Need, Goals and Values

Metrics Defintions

Data Map w/ Needs Flagged

Accepted Measure and Metrics

H — Define Dashboard

Dashboard Defintion

Populate Dashboard

Definitions

- Measure
    - A number that assigns relative value
        - volume, height, effort
    - To ascertain or appraise by comparing to a standard
        - Compare one item against another
- Measurement
    - Assigning relative value
    - Combined to form metrics
- Metric
   - A combination of two or more measures or attributes

Examples

- Measure:
  - Size
- Measurement:
  - # of pencils = 100
  - # of boxes = 20
- Metric:
  - How many pencils do I have per box
    - 100(p)/20(b) = 5(ppb)

The need for Measurements

- It is important to improve your ability to define, design, develop and deploy cost effective, high quality software solutions.
    - Improvement requires change
   - Effective change management requires measurement
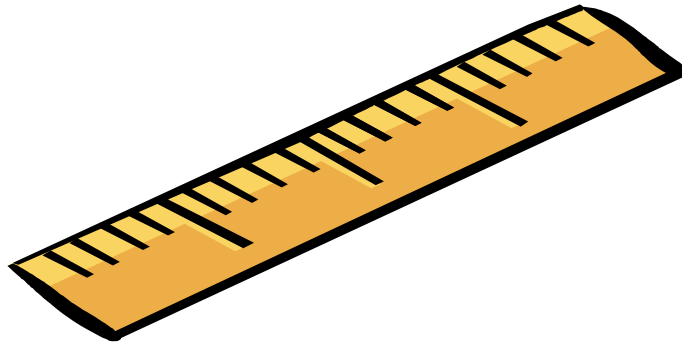
Principles of Why you should Measure

- Use in estimation and planning

- To determine if your business objectives are being met

- Identify areas for process improvement

- Establish baselines to identify trends

- Manage projects more effectively; budget, schedule, deliverables

- Use the information to make better business decisions

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Value of Measuring

- Doesn't come from the sheer collection of data
- Comes from the decisions and the actions taken as a result of the data collection and analysis

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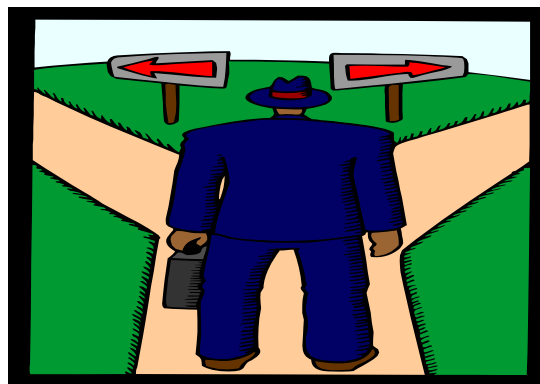
What to Measure

- Things that will allow you to answer the question, "Are we satisfying our business goals?"

- Things that will provide common project information

- Things that provide valuable information to your organization

What not to do

- Don't measure just for the sake of it
- Don't capture data that no one will use
- Don't ASSUME people are using the data
- Don't use the data against people
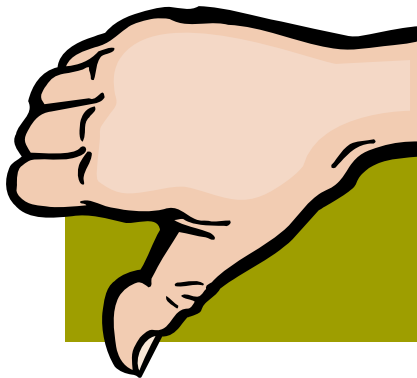
What does it take?

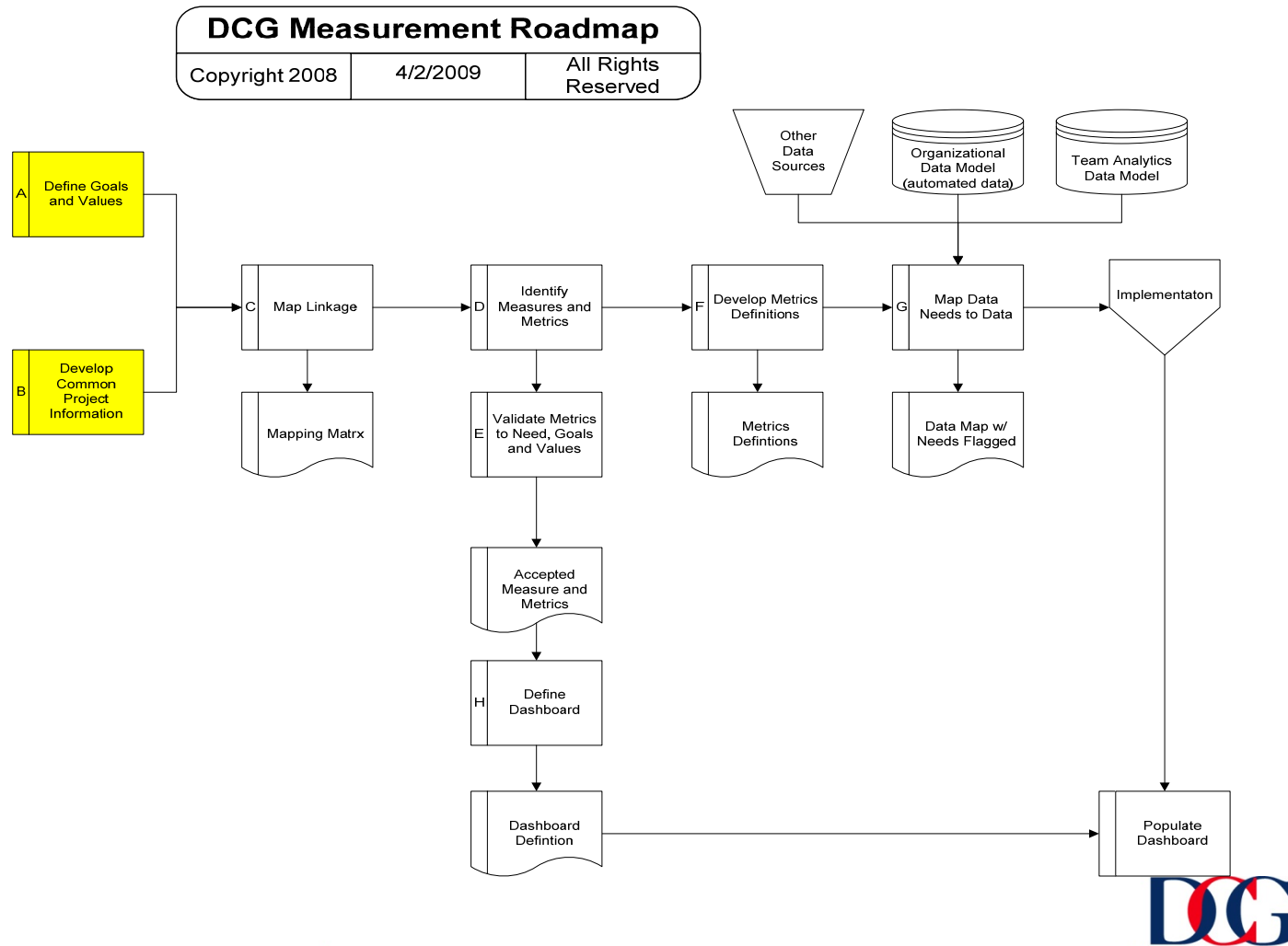# Key Steps to a Successful Measurement Program

- ## Measurement Program Selection Criteria
  - Start small; start with a few metrics
- ## Meet the goals of your measurement program
- ## Build the measurement program as the organization matures
- ## Clearly definable and easily understood
- ## Ability to collect consistently across projects
- ## Usable at various summary levels
  - Reduce redundancy

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DCG Measurement Roadmap

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Data Map w/ Needs Flagged

Accepted Measure and Metrics

H — Define Dashboard

Dashboard Defintion

Populate Dashboard

Key Steps to a Successful Measurement Program

- Define goals and values
  - Set at the Sr Management level
- Focus on business needs
  - Selection criteria for measurement
- Identify goals
- Determine the organizational objectives for each goal
- Plan what to measure
- Baseline the current level of performance

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Exercise 1 – 5 mins

- Break into groups
- Identify a business goal
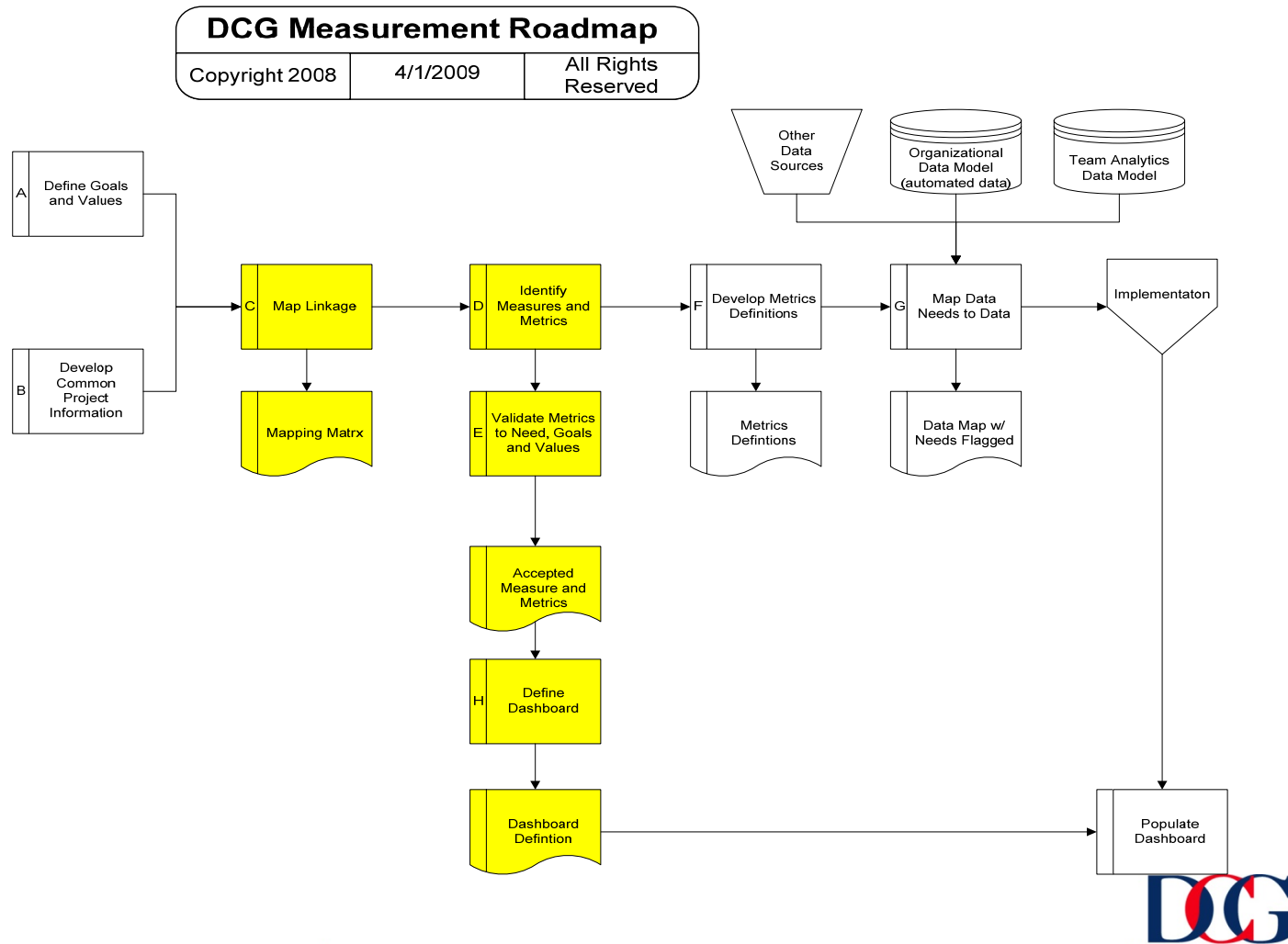- Identify the objective for the goal
- Plan what to measure

  Example:

  Goal: Reduce employee turnover by 5%

  Objective: reduce the costs associated with employee replacement (recruiting, training, etc)

  Plan: The number of employees who leave voluntarily throughout the year

  The cost associated with employee replacement

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DCG Measurement Roadmap

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Key Steps to a Successful Measurement Program

- Identify current measures and metrics
- Identify primary measures
  - Project, operational, financial
- Map current measures to the business objectives
- Validate and refine the identified metrics and gaps
- Define the measures and metrics
  - Definition, source, requirements, frequency, responsibility, storage
- Determine automation capabilities or needs
- Identify how the metrics are to be analyzed

Exercise 2 – 10mins

- Same Groups
- Based on what you planned to measure, identify measures you would capture to satisfy your business objective
- Define the measures
- Identify how you think that data should be analyzed and reported

Example

Goal: Reduce employee turnover by 5%					
Objective: Reduce the costs associated with employee replacement (recruiting, training)					
What	**Who**	**When**	**How**	**Measure**	**Metric**
Employee satisfaction ratings in the areas of x,y,z	HR	Quarterly	Employee Satisfaction Surveys; rating scale by category	Rating scale; 1-5	Q1 rating - Q2 rating
The number of employees that have left the organization voluntarily per year	HR	Quarterly	HR Employee Database; end date/reason code	# of employees with the Reason Code- 15	# emp with RC 15 Q2 - #emp with RC 15 Q1
Cost associated with recruitment	HR	Quarterly	Time Sheets category	# hrs Recorded Employee Rate	Hrs * Rate = Costs

Are we there yet?

- Are we done now?

NO

What's next?

- Analyzing the data
  - Review the data for trends
  - Determine criteria for taking action
  - Determine action plan is going to be
  - Use the data to improve
  - Track your improvement

- This is a continual process

Common Measures

- Size
- Defects
- Effort
- Duration
- Cost
- Customer Satisfaction

Measures

- ## Size

  - ### Measure a delivered unit of work

    - Function points, lines of code, use case points

  - ### Must be clearly defined and consistently captured across projects

    - Poor data produces poor results

  - ### Needs to be independent of variables that influence delivery

    - Should not be tied to a schedule or other variable

- # Defects

  - – Difference between the expected results and the achieved result

  - – Capturing defect data helps measure quality

  - – Defects should be found as early in the lifecycle as possible

    - • Capturing defect data throughout the phases of the SDLC

Measures

- ## Effort

  - ### The amount of work it will take to complete a task

    - Hours

  - ### Used to determine the level of resources needed

  - ### Used to develop project schedule

  - ### More realistically, identifies affect on project schedule

Measures

- # Duration

  - ## Length of time

    - ### Weeks, months, years

  - ## Used to develop schedules

    - ### Assist in determining resource levels

  - ## Improves estimates over time

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Measures

- Cost
  - How much $$ does the organization have to spend
  - Includes:
    - Hardware, software, salaries, overhead, training
  - One of the most important factors for the organization
    - Determines ROI
  - Track impact of changes to the project (scope creep)
    - Prevents costs overruns

Measures

- Customer Satisfaction
  - The state of mind that customers have about your organization
    - Surveys
  - Customers' expectations; have they been met or exceeded
  - Leads to company loyalty and product repurchase
  - Term "customer satisfaction" is subjective
    - Be specific in the questions asked
    - Use of categories
      - Quality, Responsiveness

Validity of data

- ## Verify
  - – consistency of data
  - – accuracy of data
  - – timeliness of data
  - – traceability of data

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Dashboards- Using Measurements for Decisions

- A useful tool for presenting measurement information to managers at different levels

- On-screen presentation of trend charts
    - typically showing the four to ten most important measurements for the viewing decision maker.

- Often, the charts represent an aggregation of other measurements so that the decision maker can "drill down" to greater levels of detail if needed.
    - For example, a manager may start by looking at a dashboard reflecting measurements across the entire organization.
    - If the manager notices a significant trend change in one of the measurements, say sales revenue has dropped this month, additional detail is available on that chart.
    - By drilling down, an additional, more detailed screen would show sales revenue for each of the business units showing if sales were slightly lower across the board or if one particular business unit had a bad month.

How to use the Measurement Information

- Use it in a positive way for improvement
- Make measurement a part of your culture
- Promote the measures in your organization
- Communicate the results
- Use metrics in decision making
- Educate the organization on the measurement program

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- NEVER:
  - Use ~~re individuals~~
  - U~~de project con~~
  - ~~ate the data~~ ~~desired res~~

Conclusion

- There are many techniques that can be used for measuring
- Each organization has to find the "right" ones for their particular business
- Metrics can be successful if done correctly
- Start small and focus on key measures
- Build the program as the organization matures
- Get buy-in from the organization
- Trends will not present themselves overnight
  - Metrics consistently captured over time will payoff

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