

The Chicken or the Egg



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University of NM Health System

An excellent use of time and money.

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SEMINARS AND TRAINING

ABOUT AQN

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AQN IS A NON-PROFIT ORGANIZATION FOCUSED ON PROVIDING EDUCATION AND TRAINING IN QUALITY.

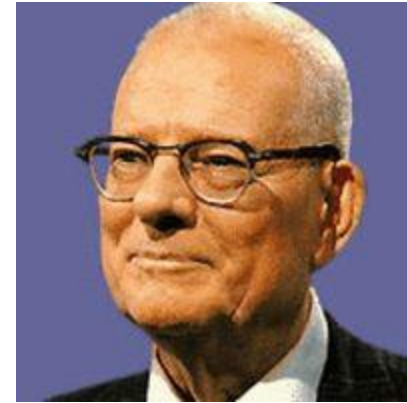


This was my assigned topic:

Quality Principles for Effectively
Using Data and Information as
the Bridge between Operational
Processes and Performance.

Table Roles and Responsibilities

1. Expediter – Keeps the discussion moving and participatory.
2. Articulator – Articulates the table's main discussion point(s) in <1 minutes.
3. Disciplinarian – Ensures table compliance.
4. Brainiac – Those who know the knowns and the unknowns.



“In God we trust; all others bring data.”

— W. Edwards Deming



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THE MAGAZINE

October 2012

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Data Scientist: The Sexiest Job of the 21st Century

by Thomas H. Davenport and D.J. Patil



What is Data and Information?

Data: Facts or information used usually to calculate, analyze, or plan something. Information that is produced or stored by a computer. (MW)

Measures and Indicators: Numerical information (unit or standard of measure) that quantifies the input, output and performance dimensions of processes, programs, projects, services and the overall organization outcomes. (Baldrige)

Metrics: Often used interchangeable with the term *Measures*. Can be qualitative or quantitative.

Goal: Future conditions or performance levels that your organization intends or desired to attain. (Baldrige)



How is data used?

Baldrige Category 4

Measurement, Analysis and Knowledge Management

4.1 How do you measure, analyze, and then improve organizational performance?

Note: Data and information from performance measurement should be used to support fact-based decisions that set and align organizational directions and resource use at the work unit, key process, department, and organization levels.

4.2 How do you manage your organizational assets, information, and information technology infrastructure?

4.2 a.(2) How do you use your knowledge and resources to embed learning in the way your organization operates?

Which came first; data or performance?



It doesn't matter.

In Quality they are mutually dependent. You can't have one without the other.

Principle 1:

Data and Performance are Mutually Dependent.



An effective QMS must have both.

An effective leadership system must have both.

An effective strategic deployment must have both

An effective business plan must have both.

An effective improvement project must have both.

An effective audit program must have both.

An effective personal growth program must have both.

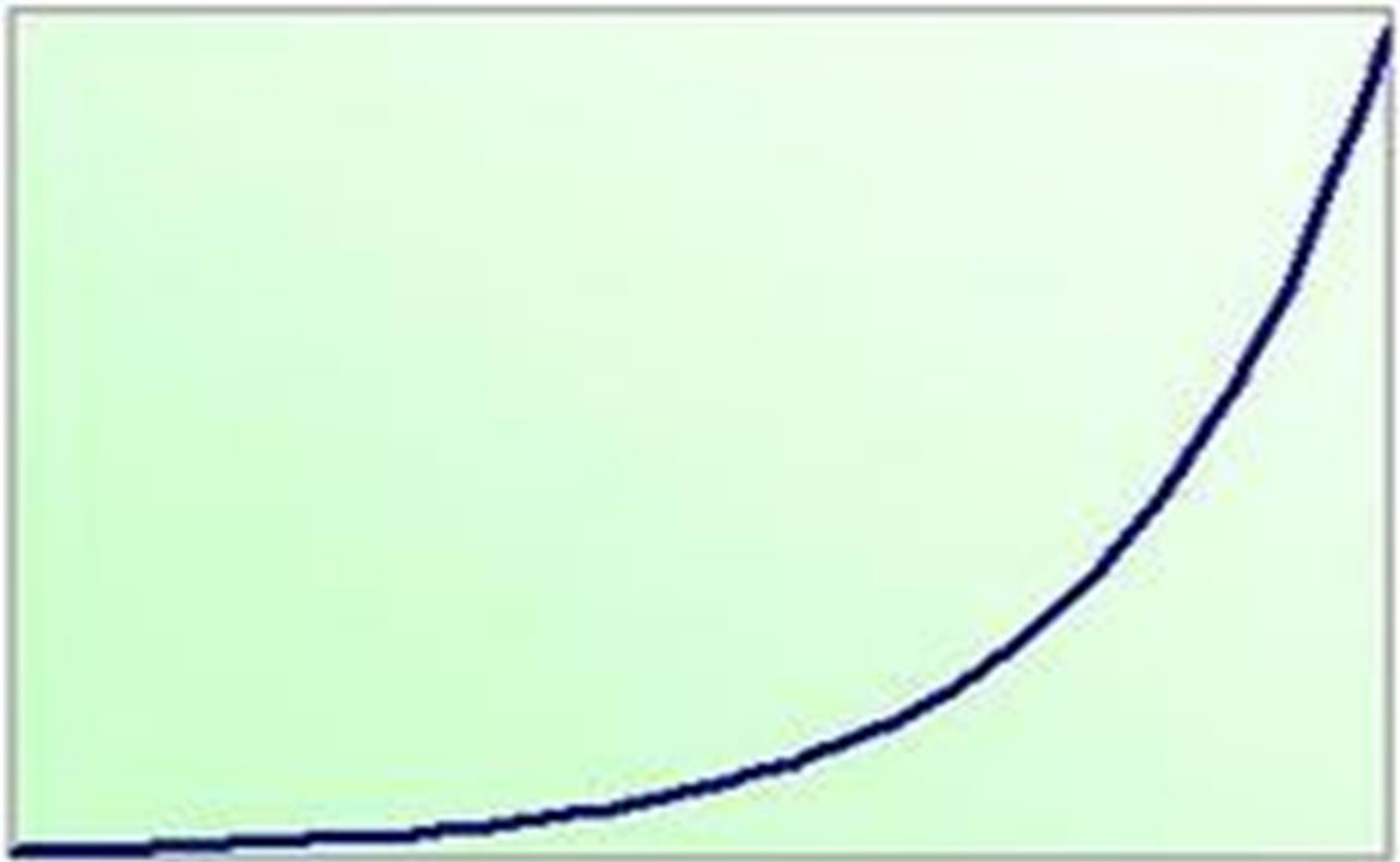
Table Question...

How often does data and information shape your life?

- Daily/ Hourly/ Minute to Minute
- Weather/ Travel/ Coats
- Budget/ Income
- Time/ Time zones
- \$Food costs/ #Calories/ %Nutrients

Data can't make things better,
but data helps us decide what
needs to be better.





Principle 2

Expect data to change.

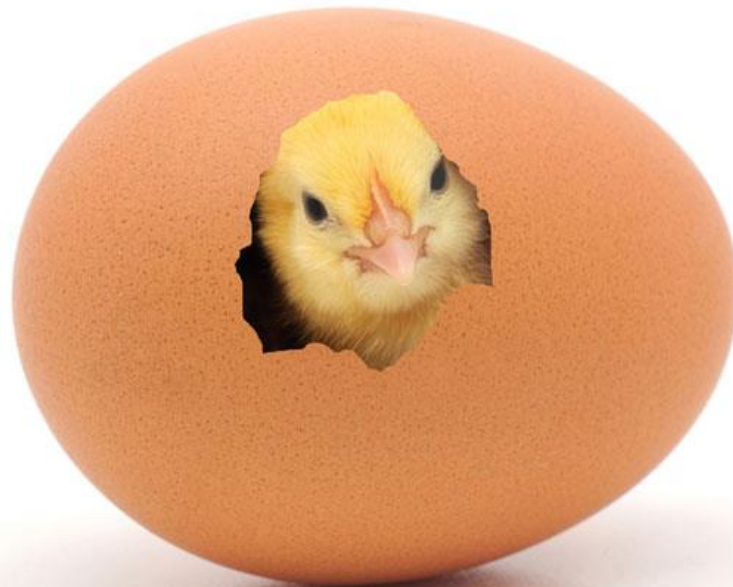
Metrics are the most volatile category of a QMS.

WHY?



Table Question:

What changes have you seen in data and information in the last 3 -5 years?



As the unknowns become known, we must adjust the data.



There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.

(Donald Rumsfeld)

izquotes.com

Table Question...

What brand spanking new data requirement/request has presented itself in the last 30 days in your organization?

And what was the time frame given to meet that requirement?



Snapshots

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You've suffered a contusion to the soft tissue below the fourth thoracic vertebra, exacerbating the proximal sternum.



Translation: "You have a bruised rib."

Principle 3
Tell the story
simply using
data.

Or... You Have
A bruised rib.

Story..

1. Here's the undesired situation.
2. Here's how we know the undesired situation exists.
3. We need to change from an undesired situation to a desired outcome.
4. Here's what the desired outcome should look like.
5. Here's how we will know we have achieved the desired outcome.

Which tells the story simply?

This one?

Raw Data Report June 24, 1998
10:37:38 a

C:\QC-CALC\data\sample.qcc
QC Sample file of 16

| Record Number | X Hole Position | Y Hole Position | Z Hole Position | Line Length | Datum 1 | Datum 2 |
|---------------|-----------------|-----------------|-----------------|-------------|-----------|-----------|
| Nominal | 1.0000 | 2.0000 | 3.0000 | 4.0000 | 5.0000 | 6.0000 |
| USL | 1.0010 | 2.0020 | 3.0030 | 4.0040 | 5.0050 | 6.0060 |
| LSL | 0.9990 | 1.9980 | 2.9970 | 3.9960 | 4.9950 | 5.9940 |
| 1 | 1.0009 | 1.9991 | 2.9990 | 4.0004 | 4.9984 | 5.9993 |
| 2 | 1.0000 | 2.0005 | 2.9998 | 4.0025 | 4.9986 | 6.0027 |
| 3 | 1.0002 | 1.9999 | 3.0011 | 3.9986 | 4.9984 | 5.9985 |
| 4 | 1.0001 | 2.0009 | 3.0026 | 4.0005 | 4.9985 | 5.9989 |
| 5 | 0.9999 | 1.9992 | 3.0004 | 4.0027 | 4.9971 | 6.0029 |
| 6 | 1.0000 | 1.9993 | 2.9998 | 4.0032 | 5.0018 | 5.9978 |
| 7 | 0.9996 | 2.0013 | 2.9976 | 3.9993 | 5.0012 | 5.9991 |
| 8 | 1.0003 | 2.0014 | 2.9993 | 3.9990 | 5.0017 | ** 5.9937 |
| 9 | 0.9993 | 1.9984 | 3.0009 | 3.9990 | 5.0020 | 6.0008 |
| 10 | 1.0005 | 1.9991 | 2.9987 | 3.9987 | 5.0016 | 5.9984 |
| 11 | 0.9998 | 2.0018 | 2.9987 | 3.9998 | 5.0003 | 6.0022 |
| 12 | 1.0008 | 2.0004 | 2.9974 | 4.0015 | 4.9974 | 6.0025 |
| 13 | 1.0003 | 2.0008 | 2.9990 | ** 3.9955 | 5.0002 | 5.9945 |
| 14 | 0.9999 | 1.9997 | 3.0001 | 4.0028 | 4.9987 | 5.9996 |
| 15 | 0.9999 | 1.9998 | 2.9999 | 3.9994 | 5.0011 | 6.0006 |
| 16 | 0.9998 | 1.9992 | 2.9998 | 4.0007 | 5.0011 | ** 5.9932 |
| 17 | 0.9997 | 1.9997 | 2.9989 | 3.9990 | 5.0022 | 5.9971 |
| 18 | 1.0002 | 2.0000 | 3.0015 | 3.9971 | ** 5.0059 | 6.0007 |
| 19 | 1.0004 | 2.0002 | 2.9972 | 4.0009 | 5.0041 | 5.9987 |
| 20 | 1.0000 | 2.0002 | 3.0014 | 4.0030 | 5.0029 | 5.9987 |
| 21 | 1.0002 | 1.9995 | 2.9992 | 4.0024 | 5.0030 | 5.9993 |
| 22 | 0.9992 | 2.0000 | 2.9985 | 3.9984 | 4.9995 | 6.0054 |
| 23 | 0.9995 | 2.0013 | 2.9973 | 4.0033 | 5.0006 | 5.9976 |
| 24 | 0.9996 | 2.0014 | 3.0002 | 3.9986 | 5.0015 | 6.0001 |
| 25 | 0.9998 | 2.0003 | 3.0001 | 3.9985 | 5.0036 | 6.0024 |
| 26 | 0.9995 | 2.0008 | 2.9989 | 4.0012 | 4.9983 | 6.0016 |
| 27 | 0.9993 | 2.0019 | 3.0000 | 4.0008 | 5.0011 | 5.9989 |
| 28 | 1.0006 | ** 2.0024 | 2.9996 | 4.0018 | 5.0003 | 5.9981 |
| 29 | 1.0000 | 1.9996 | 2.9992 | 3.9979 | 4.9980 | 5.9959 |
| 30 | 1.0001 | 2.0008 | 3.0004 | 3.9997 | 5.0016 | 5.9986 |
| 31 | 1.0007 | 1.9996 | 2.9987 | 4.0025 | 5.0017 | 6.0036 |
| 32 | 1.0001 | 1.9999 | 2.9979 | 3.9992 | 5.0002 | 5.9987 |
| 33 | ** 0.9990 | 1.9996 | 2.9999 | 4.0000 | 4.9999 | 6.0017 |

Page - 1

Or this one?



How about here...

This one?



www.alamy.com - ARR68

Or this one?

MUTAMYCIN®

[mū''-tē-mī'-sīn]

(mitomycin for injection) USP

℞

DOSAGE AND ADMINISTRATION

Mutamycin should be given intravenously only, using care to avoid extravasation of the compound. If extravasation occurs, cellulitis, ulceration, and slough may result.

Each vial contains either mitomycin 5 mg and mannitol 10 mg, mitomycin 20 mg and mannitol 40 mg, or mitomycin 40 mg and mannitol 80 mg. To administer, add Sterile Water for Injection, 10 mL, 40 mL or 80 mL, respectively. Shake to dissolve. If product does not dissolve immediately, allow to stand at room temperature until solution is obtained.

After full hematological recovery (see guide to dosage adjustment) from any previous chemotherapy, the following dosage schedule may be used at 6- to 8-week intervals:

20 mg/m² intravenously as a single dose via a functioning intravenous catheter.

Because of cumulative myelosuppression, patients should be fully reevaluated after each course of Mutamycin, and the dose reduced if the patient has experienced any toxicities. Doses greater than 20 mg/m² have not been shown to be more effective, and are more toxic than lower doses.

The following schedule is suggested as a guide to dosage adjustment:

What about here?

Being told you have a broken leg?



or seeing a picture of your broken leg?



Visuals are key to simplifying and sharing the story.

Without visualizing your story, the project may be unsupported, ineffective and you might miss the boat altogether.

Principle 4

Identify your starting point.



35.113281, and 106.621216
Latitude/Longitude

Options available to help.

- Research and study the data, if data exists.
- Engage in a first, second or third part audit to gain understanding.
- Solicit input, feedback from those impacted.

Starting points must be based in fact. Find out.

Without knowledge, and as human beings... we tend to think that ourselves, our children, our department, our organization, etc. as performing better than it actually is.

Starting points can be intimidating, shocking, depressing, surprising, disappointing etc....but the message is **KNOW** your starting point.

Just the facts....

“I never guess. It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.”

Sir Arthur Conan Doyle
(1859 - 1930)

The Sign of Four
A Scandal in Bohemia



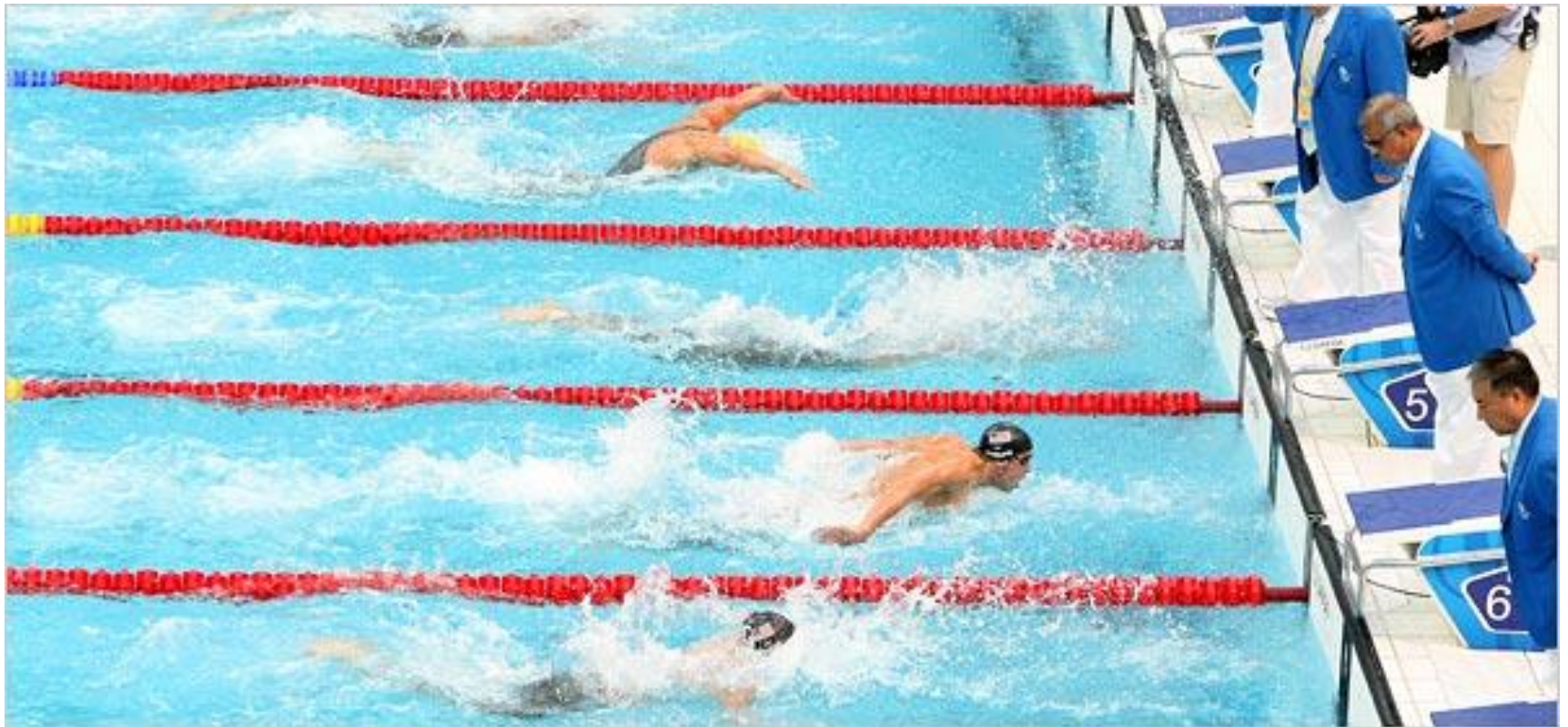
Olympics

Phelps Wins 7th Gold With 0.01 to Spare

B

Michael Phelps, in lane five, takes his last breath as he hits the wall for his 7th gold medal in Beijing.

Credit Doug Mills/The New York Times By [KAREN CROUSE](#) AUG. 15, 2008



Principle 5. Define what success looks like.

- What is the desired outcome?
- Is it gaining a better understanding?
- It is a change in behavior?
- Is it a change in thinking?
- Less risk?
- Better efficiency?
- Lower numbers? Higher numbers?

Table Question

Is your organization...

- a) better at identifying the starting point or
- b) better at identifying what success looks like

Provide table ratio

Keep in mind...

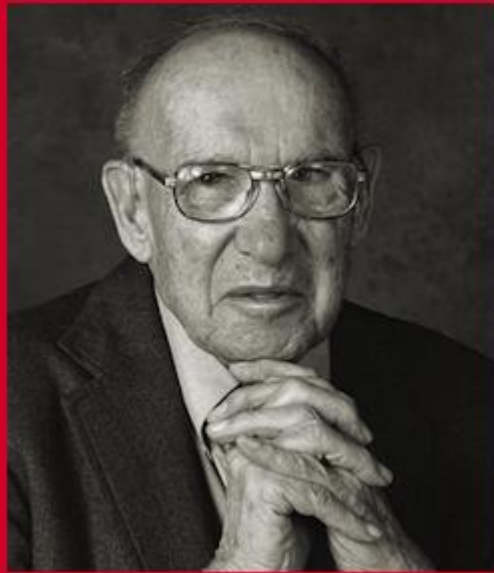
1. What you stop doing is just as important as what you start doing.
2. Identify the process(es) that impact the defined desired outcome.
3. Identify the data needed to understand if changes you make to the process(es) are leading to the desired outcome.
4. To change the outcome, you must change the process.

Principle 6: Choose data carefully.



P.S. You don't need to know everything.

Who said... *What gets measured gets managed...*? Compliance, Process, Workload...etc.



**"There is nothing so useless
as doing efficiently that
which should not
be done at all."**

-Peter F. Drucker

Let's use an common example...

I want to lose 10 pounds and keep it off..

Using our fact-based story.

1. **Undesired situation:** I'm gaining weight.
2. **Here's how I know:** 5 out of 5 pants in my closet are too tight when I put them on and the scale says I'm 10 pounds more than I was last year.
3. **Transformation:** I need to stop gaining weight and lose 10 pounds.
4. **Desired outcome:** Weight loss and pants fit nicely.
5. **How will I know I'm successful?** I will try on 5 out of 5 pants for fit and weigh myself on the scale for weight loss from identified starting point. If I've lost 10 pounds and pants fit nicely then I have been successful.

Next, choose data carefully.

Is losing 10 pounds and getting pants to fit about the process or the outcome?

THE PROCESS

And yet, many people measure weight loss by looking at the scale. And what does the scale offer?

THE OUTCOME

This is the difference between Correction and Corrective Action. This is why so many improvement plans fail or fail to be sustained. The data focuses on correction - the outcome... rather than on the process and hardwiring in the change which is Corrective Action.

The common mistake made, is singularly using Outcome Data when one should be focusing on Process Effectiveness Data first.

Use Process Effectiveness Data

Instead... the data measured must be based in the process.

- For example: I will consume no sugar between noon and midnight everyday and I will walk 2 miles 3 times/wk between today and Dec. 1st. If I accomplish these actions - I have succeeded.
- Sure, I will know I have lost 10 pounds by what the scale says on Dec 1, but it cannot be sustained unless the process is altered.

This is the difference between correction and corrective action.

Benchmarking: Becoming the best.

Comparative data - Must have to be top performing.

Top Box- *Strongly Agree is really what you are looking for!*
When you Agree your meal was satisfactory, what are you really saying? NOTHING

What table tells you more?

There are well documented processes and internal controls in place to avoid risk to employees.

| Location 1 | Location 2 | Location 3 |
|-----------------------|---------------------|---------------------|
| Not/Applicable – 5 | Not/Applicable – 5 | Not/Applicable – 7 |
| Strongly Disagree - 0 | Strongly Disagree-1 | Strongly Disagree-1 |
| Disagree – 5 | Disagree – 1 | Disagree – 4 |
| Neutral – 19 | Neutral – 6 | Neutral – 5 |
| Agree – 58 | Agree – 22 | Agree – 15 |
| Strongly Agree - 44 | Strongly Agree - 13 | Strongly Agree - 9 |

There are well documented processes and internal controls in place to avoid risk to employees.

| Location 1 | Location 2 | Location 3 |
|----------------------------|----------------------------|----------------------------|
| 66% did not strongly agree | 73% did not strongly agree | 79% did not strongly agree |



Link data to the desired behaviors.

- Decide what processes are needed to support the desired outcome.
- Make this an open inclusive process. ASK
- How will behaviors and actions be consistently measured?
- What processes must be performed precisely?
- Document what was decided.

Implied expectations.

“Metrics can tell you what users like and dislike, but they can’t tell you what they dream about.”

Scott Gursky,
game designer

INTERACTIVE DESIGN
PAGE 64

GOALS, USERS, AND SUCCESS CRITERIA
PAGE 65

and measure the right thing!



Principle 7

No Chasing Metrics



Many metrics reflect process outcomes.
Better processes, better training, better
compliance may be metrics.

**But remember....Change the
process to change the outcome.**



Table Question

What is the best way you have found to avoid chasing metrics?

Quality is the antonym of Inertia, Why?



Principle 8 LEARN!

What does it mean to learn?

Definition of Learn by Merriam-Webster

To **gain knowledge or skill** by studying, practicing, being taught, or experiencing something. : to cause (something) to be in your memory by studying it. : to hear or be told (something) : to find out (something)

Secret to it all...

Only when deliberate, disciplined and consistent use of data and quality principles/ concepts/ tools are used to learn, make decisions and improve; will one attain the highest level of performance, affectionately known as excellence.

Resources
spent on
Data

Resources
spent on
Improving



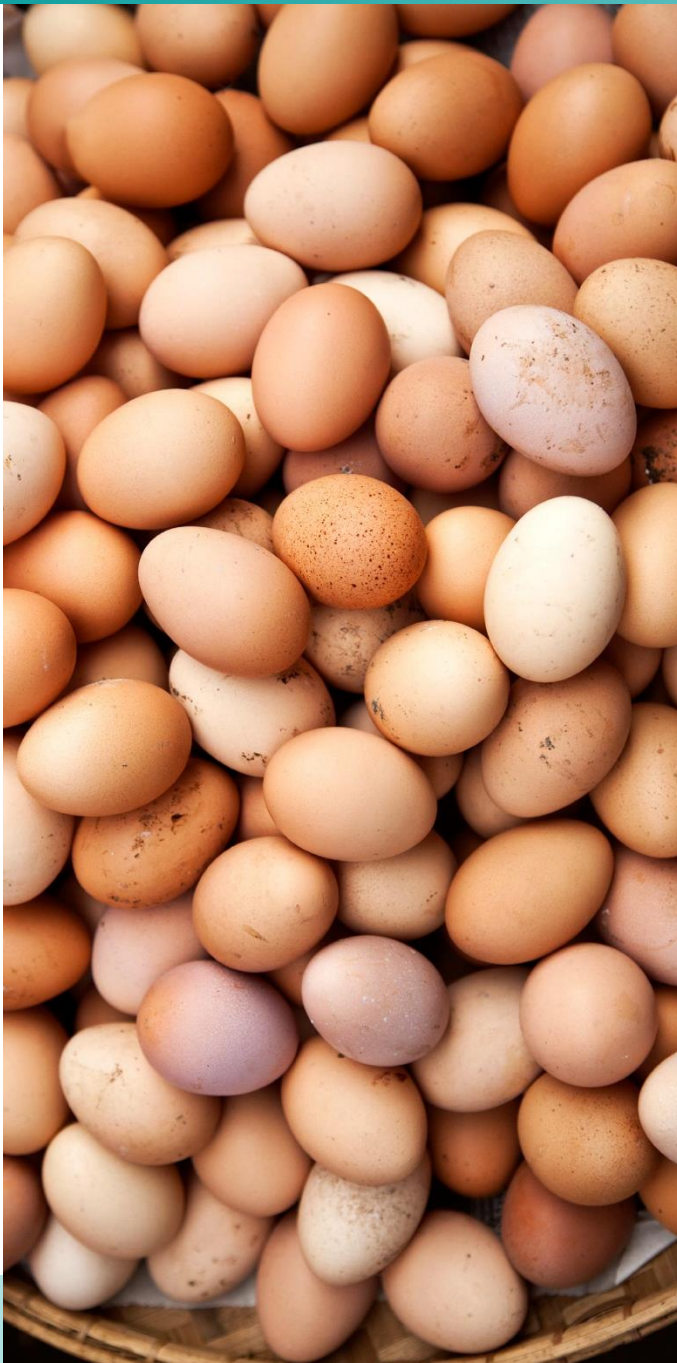


Table Question...

What % of the data your organization gathers, tracks and reports on... are used in your organization's learning and improvement loops?

Systems Approach

“Every system is perfectly designed to achieve exactly the results it gets”.

Paul Batalden Dartmouth Medical School Director,
Based on a quote from W. Edward Deming (1990)

In 2017

How will you
approach data
differently?



The 8 Chicken and Egg Principles

1. Data and Performance are mutually dependent.
2. Expect data to change.
3. Tell the story simply using data.
4. Identify your starting point.
5. Define what success looks like (end point).
6. Choose data carefully.
7. Avoid chasing metrics.
8. LEARN!

GO

By TUCKER REALS | CBS | July 14, 2010, 4:54 AM

Chicken Came Before the Egg: "Scientific Proof"

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British scientists claim to have solved one of the great mysteries of life, the universe and everything in it: The chicken came before the egg, they say, and they're not mincing words.

"It had long been suspected that the egg came first, but now we have the scientific proof that shows that in fact the chicken came first," Sheffield University's Dr Colin Freeman, according to a report in the [Metro](#).

Researchers from Scotland and England used a supercomputer called HECToR to look in such detail at a chicken eggshell that they were able to determine the vital role of a protein used to kick-start the egg's formation.

Remember!
Stop doing
what's
inefficient.

Once
unknowns
become
known, move
on.

Use the 8 Principles...don't forget
to use your support system...and
Go for Excellence!

