

UCB - Process Measurement

June 2013

A. Course Summary

- 1. This course is designed to develop your skills in defining and implementing a measurement system for a particular process.**

The emphasis is on thinking all the way through to the use of the data in decision-making rather than merely collecting data. The anticipation of using the data drives the definition of the metric as well as the data analysis to be used.

B. Pework

- 1. Prior to the course you'll receive a short survey from me about your experience with process improvement, measurement, and Excel.**

It's confidential, and it will help me a lot in planning for the course, so please fill it out. If you don't, I'll bug you until you do.

- 2. Bring a definition of a process, preferably one from your work situation, or at least some process with which you're familiar.**

- Ideally it would be a process for which you are responsible for installing metrics, but it's fine if it's just a process on which you can practice.

- 3. Elements of your process definition**

- Name of the process
EXAMPLE: Hiring

- Start point and end point of the process
EXAMPLE: Goes from [Mgr decides to hire] to [New employee's first productive day] (FPD)

- The Final product or service that signals the end of the process
Final "product" could also be a report, a decision, a judgement, a piece of critical data.
EXAMPLE: Final product is an event, but intermediate products are signing hiring contract, logging onto corporate intranet, and first meeting with new supervisor.

- The customer of your process (whoever takes the outcome for their use)
EXAMPLE: Hiring manager, newly hired employee

- The importance of the process for the larger enterprise (How does the outcome of your process contribute to the organization's success?)
EXAMPLE: Ensures that the company has skilled employees in place to do productive work.

- Any glaringly obvious metrics of which you're aware.
EXAMPLES: Length of time from initial posting to FPD.

4. If you have a laptop, bring it.

We'll be using Excel for class exercises, but any comparable spreadsheet product (such as OpenOffice) should suffice.

We'll be projecting from your laptop for exercises in the class. We'll have at least 2 projectors available.

If you have an Apple, please bring the necessary cable to project from your laptop if you have it available.

C. Day One <465min>

..out of 495

1. Introductions and ground rules <30min>

- a. Your name, your company, your involvement with building process metrics
- b. Confidentiality agreement
 - (1) The Las Vegas rule: What's said at UCBx, stays at UCBx
 - (a) Keep the name of any companies mentioned confidential...from *anyone*.
 - (2) Are there any direct competitors in the room?
- c. A note about notes <3min>

2. Introduction to the course: *the art, the science and the politics of measurement* <50min>

- a. Despite all the relevant science, tools, and technology, good measurement is still an art. <10min>
 - (1) The profusion of terms, distinctions, charts, and graphics gives the illusion that good measurement is a matter of filling out the appropriate worksheets.
 - (2) As an art, the only way to learn it is to practice it in a community. We're looking for nuance and judgment as much as hard skill. Exploring cases together is more valuable than learning codified procedures.
- b. Why we measure <10min>

What would motivate an organization to spend resources on measuring rather than performing?

 - (1) To **communicate** <3min>
 - (a) Blatant Messages: To translate broad process performance goals (cost, speed, quality, customer satisfaction) into something more concrete and understandable.
 - i) "Improve quality" becomes "Reduce error rate from 1 in 50 to 1 in 1000"
 - ii) "Increase throughput" becomes "Increase our capacity from 10 units/day to 20 units/day"
 - iii) "Market penetration" becomes "Secure at least 25% of sales from new customers"
 - (b) Subtle Messages: To reinforce a process orientation
 - i) To underscore the definition of **[work process]** as the appropriate unit of analysis for performance.
 - ii) To emphasize the **[process team]** as the relevant work group.

- (2) To **inform decision making**: measurement is a **catalyst for critical conversations**. <8min>
Data is in the service of decision-making; merely providing data without focus and interpretation is not only a waste of resources, it is likely to provoke poor decision making.
 - (a) Audiences
 - i) Process team: feedback on performance
 - ii) Upper management: targeting resources for improvement efforts
 - (b) The quality of your measurement system is nothing more or less than the quality of those conversations.
 - i) If you put a problem in front of most managers or executives, they will drive for a solution; if you don't give them greater visibility into the process dynamics, they will most likely fall back on a structural or people solution.
 - ii) Anticipate the decision-making style of the critical audience.
 - iii) Those conversations are vulnerable to the culture of the organization.
- c. Some simplifying assumptions <5min>
 - (1) You are in charge of defining metrics for your process.
(even though you ultimately have to take into account the opinions and tolerances of others)
 - (2) You will be collecting, processing and presenting the data yourself.
(even if you may have to eventually feed numbers into an enterprise-wide database or display software)
 - (3) You are fluent in some basic descriptive and analytical statistics.
(even if you need to "brush up" on some technical issues later)
- d. The course assignment: building an Excel file <10min>
 - (1) The substance
 - (a) Design the basic database: define a case, select variables to track
 - (b) Select appropriate targets for outcome measures
 - (c) Anticipate the exploratory questions you would address should the metric fall outside acceptance range
 - (d) Demonstrate how you would display the data to the eventual decision-makers
 - (2) The process
 - (a) I'll provide an Excel spreadsheet as a template to build on.
 - (b) You're free to email or call me for advice or reactions.

- (c) We may use www.TeamViewer.com to assist us in collaborating easily.
 - (d) Email your spreadsheet to me by EOD Wednesday June 19th.
Extensions are by negotiation only. If for some reason you can't get it to me by 6/19, write/call me and let's talk about your situation.
- e. This series of courses is predicated on the belief that 'process' is the richest and most useful way to think about work.
It's different from thinking about work as a series of tasks, a group of problems to solve, a set of assignments to positions, or the domain of a functional department.
The concept operates in this course in 2 ways. <20min>
- (1) Given the centrality of the concept of process, let me share how I think about it.
 - (2) We are trying to explicate how to **measure process performance** in the most robust way.
 - (3) The **process of measurement** can be decomposed into 4 sub-processes.
- f. Levels of Measurement <15min>
- (1) Process Operation: how well are the activities internal to the process supporting its overall functioning?
 - (a) Time / speed
 - (b) Errors / waste
 - (2) Process Product: did our product match our internal specifications?
 - (a) Specifications of quality
 - (b) Capacity / volume
 - (c) Cost (activity based costing)
 - (3) Process Impact: how well is a particular process delivering the specific value in the customer's eyes?
The preferences and priorities of customers can drift. Our process product could meet the criteria established some time ago, but customers are decreasingly satisfied because their expectations have shifted.
 - (4) Enterprise Performance: how well is the company performing against its strategic objectives? Satisfying the company's customers?
 - (a) Presumes that there is an overall enterprise process map (value chain) that links processes to company impact.
 - i) Kaplan & Norton's Balance Scorecard and Strategy Maps can provide that macro view.
 - ii) Porter's Strategic Activity - System Map provides the same link between strategic objectives and internal operations.

- (b) Negative data requires that we trace backwards into processes to find the corrective action.

3. Building some cases <60min>

- a. Take a flip chart page and give us a brief introduction to the process you brought for today's work. Include the following on your chart <5min>
 - (1) Process name or title
 - (2) Starting point
 - (3) End point: the final product that defines the termination of the work flow
Report, recommendation, data entered, a thing, an event, a decision, etc.
 - (4) Define the "thing" that moves through the process
It's easy if you're building lawn furniture, but what about "sales training"? Or "new product launch"?
Leadership development? A recommendation or decision? Data? A form or document? A package of materials? A physical object? A service defined and/or delivered?
 - (a) Building toward a final product (such as compiling a training program)
 - (5) Brief description
 - (6) The customer of your process
Whoever takes the outcome for their own use
 - (7) The importance of the process for the larger enterprise
How does the outcome of your process contribute to the organization's success?
 - (8) Any glaringly obvious metrics of which you're aware
We'll come up with more later.
 - (9) And please add your name and phone number as well.
- b. SAMPLE: Executive Client Briefing <10min>
Typical for any high-tech company selling large-ticket items (HP, IBM, Cisco, Oracle, SAP, etc.)
 - (1) TITLE: Executive Briefing Session
 - (2) START POINT: Account Executive requests a visit by one of their major accounts
 - (3) END POINT: The client attends a one- or two-day presentation at the company's Executive Briefing Center.
 - (4) THE THING: The process slowly (1) builds an agenda for the visit which has a (2) rationale for the content, sequence, and the intended impact. And then they (3) execute on that agenda.
So what topics should be covered? And then book the appropriate presenter.

And orchestrate the day.

- (5) BRIEF DESCRIPTION: The client (usually half a dozen or more) hear presentations by senior engineering staff, company executives, and get a hands-on tour of the hardware of interest. The EBC provides a concentrated, impressive exposure to the company, its products, its key engineering talent, and its services in a high-end high-tech environment.
 - (6) CUSTOMER: The Account Executive, who leverages the briefing in their overall sales process.
 - (7) IMPORTANCE: The sales at issue are usually \$500,000 to \$5M+, so clients are understandably concerned about making the best choice possible. Even though actual sale may not occur for months or even years, the executive briefing keeps the company in the running, enhances the relationship between client and account executive, and typically expands the scope and scale of the sale.
 - (8) METRICS:
 - (a) Clients' reported satisfaction with the day
 - (b) Clients' reported inclination to move ahead with purchase
 - (c) Clients' reported increase in trust in host company
 - (d) Greater access to decision makers for the Account Executive
 - (e) Account Executives' reported shortening of sales cycle, increase in sale amount, and expansion of products or services under consideration
- c. Fill out your flip chart and post on the wall. <45min>
(If you do not have a process, feel free to join in with someone else as a helpful sounding board)

4. BREAK <15min>

5. Measurement Assessment <40min>

- a. Assessing the measurement issues around a particular process. <15min>
- b. **EXERCISE:** Assessment <20min>
Open the EX_Assessment tab in your course assignment file; work through the questions there.
 - (1) What are the primary reasons for wanting performance metrics for your process?
 - (a) Improved operational performance through real-time data?
 - (b) Indicators of process performance to set priorities in resource allocation?
 - (c) Understanding of performance dynamics to direct improvement efforts?
 - (2) Who are the various stakeholders you need to consider?

- (3) Who are the various audiences who will review the process performance data?
 - (a) What might they do with the data?
 - (b) What resources do they control?
 - (c) What options do they have to improve process performance?
- (4) What questions do you imagine they would ask if the process performance were outside the acceptable range?
- (5) Are there any people who might be nervous or fearful about the review of this data?

6. Measurement Design ~ Part 1 <55min>

a. Developing the metric for a given process. <15min>

b. **EXAMPLE:** AnyCompany, Inc.: Hiring <10min>

(1) Documentation on data structure

(2) A sample data set

c. Where to measure <15min>

d. **EXERCISE:** Design <25min>

Open the EX_Design tab in your course assignment file.

(1) Who is the customer for your process? Who takes the output of your work and does something else with it?

(2) What other stakeholders do you have to take into consideration? What is their concern?

(3) Defining a consistent unit of analysis: What's the "thing" that is being measured?

What constitutes a row in the database?

(a) A product?

(b) A service delivered?

(c) A decision, judgement or recommendation?

(d) A relationship? Someone's feelings?

(e) A piece of data? A report?

7. LUNCH <60min>

8. Measurement Design ~ Part 2 <115min>

a. From process steps to process metrics

b. Developing a basic metrics database <30min>

- c. **EXERCISE:** Set up the data table for your process <45min>
Enter a few rows of hypothetical data just to make sure you have the structure.
- (1) Do you have a unique ID number for each "thing"?
 - (2) Do you have a useful list of demographic variables?
(that is, you can see value in breaking out your data by all of the demographic variables)
 - (3) Have you captured the important process steps?
 - (a) Have you captured the points of most likely failure?
 - (b) Could you differentiate between a process that routinely performs poorly and a process that performs poorly only under certain circumstances?
 - (c) Could you distinguish between a poorly operating process and a process with faulty inputs?
 - (d) Could you isolate a problem to a particular point in the process flow?
 - (4) Do you have the right outcome measures?
 - (a) Time / speed
 - (b) Quality / errors / waste
 - (c) Costs
 - (d) Capacity / volume
- d. Setting a target <15min>
- (1) Industry standards are minimum requirements, table stakes, survival limits
 - (2) Strategic priorities are opportunities to create a strategic advantage over the competition
 - (3) Current capability is relevant if you want targets that are motivating rather than intimidating
- e. **EXERCISE:** What target would you propose for your metric? <15min>
- (1) What statistic are you suggesting for your metric? Mean? Median? Standard deviation?
 - (a) If the metric is routinely skewed, you might want to use median instead of mean.
 - (b) If the metric is highly variable, you might want to focus on standard deviation.
 - (c) If the metric is often flat or bimodal, the mean could be quite misleading.
 - (2) Are you reacting mostly to industry standards? Strategic priorities? Current capability?

- (3) How optimistic are you that the targets can be met with reasonable time and effort?

9. EXERCISE: Pair up and review each other's work <30min>

10. Homework assignment <10min>

In the next two weeks, collect as many cases as you can and populate your database. Share your growing database with anyone who might be asked to review the data in the future; ask for any reactions or suggestions.