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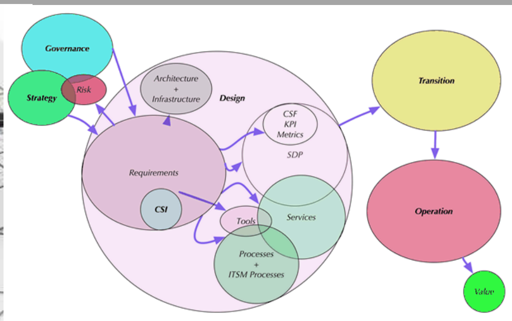

The Life of a Metric

Adventures and lessons learned in measuring IT service management

Presented by Ross Hipple and Mark Holtzclaw

U.S. DEPARTMENT OF ENERGY

NNSA National Nuclear Security Administration

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Introduction: A brief history of our metrics story

- Scope: The groups that provide desktop and mobility services at Sandia
  - Does not include networking, servers, or high-performance computing groups
- Mid-April 2013: Implemented new service based contract with IT supplier to deliver IT services to our Sandia customers
- New contract required new metrics
  - Performance on ITSM processes
  - Quality of service delivery
- Began measurements in June 2013

Our goals for these metrics

- Identify the **right questions** to ask with metrics
  - Are we responding to our customers in a timely fashion?
  - Do our solutions resolve the customer's issue?
- Measure the **right things**
  - Timely response & resolution
  - First-contact resolution
  - Customer satisfaction (including UNHAPPY customers, which we never measured before)
- Drive the **right behavior**
- Identify **opportunities for improvement**
- Identify **developing issues** *before* they become large problems (proactive, not reactive)

Questions, questions, questions

CPI? KPI? GPI?

What about our old metrics?

What's fair?

What will be meaningful, actionable?

What behavior do we want?

What do we do with the data we get?

How do we know if our customers are happy?

What should we measure?

What does that mean?

How do we turn data into wisdom?

How many metrics?

We asked ourselves many questions before developing a single metric

- What do we want to measure and why? (add value)
- Which of our old metrics should we keep (i.e., do they still add value)?
- How many metrics?
  - What type (CPI, KPI, or GPI)?
  - What will be the *mix* of types?
  - How often should we measure them?
- How will we clearly define the metrics so we all have a common understanding?
- How do we agree on common definitions?
  - What is a "backlog"?
  - What constitutes "remote closure"?
  - What constitutes a "response"?
- How will we measure, record, calculate, and report metrics?

What we did to answer the questions

- Reviewed existing metrics
- Did a lot of research about useful metrics
- Collected and analyzed LOTS of data from our ticketing system to …
  - Analyzed 18-months of data
  - Develop the right metrics
  - Come up with the right metrics definitions
  - Identify the appropriate type of metric and distribution of metric types (CPI, KPI, GPI)
  - Identify expected service levels
- Based on analysis, created new metrics (and repurposed some of our old metrics)
- Developed reports and a method to publish them

Kickoff! We launch the metrics effort

- Ran old metrics under old contract until April 2013
- Ran new metrics in April (even though new contract didn't begin until mid-April)
- Watched metrics over the transition period
  - Any contract transition is a high-risk period
  - Wanted to make sure we continued to deliver high-quality IT services
- Began formal metrics reporting in June 2013

Things we did right from the beginning

- Negotiated service levels & definitions; obtained agreement among all parties
- Spent time analyzing existing data to see where we could improve our metrics
- Built consistency into the metrics & reports
- Developed a formal numbering system for the metrics (simplified reports and discussions)

Interesting things we discovered along the way

- We started with TOO MANY METRICS (40)
  - Lots of overhead to track and report
  - Didn’t get the value we anticipated
- Metrics have a lifespan!
  - When’s the right time to introduce a new metric?
  - When’s the right time to sunset one?
    - Turned OFF Average Talk Time and quarterly Cycle Time
    - Turned ON Detailed MTRS (which encompasses elements of the former)
- Inconsistent use of ticketing system made for slightly wonky data:
  - Response & resolution times, ticket priorities
  - Ticket status
  - Categorization

Interesting things we discovered along the way, cont'd

- We had to be careful to walk the right line between *metrics* and *process execution*
- We saw some unanticipated consequences from some of the metrics; this is a delicate balance!
- Don't make wrong assumptions!
  - "The faster we close calls or tickets, the better customer service we are providing."
- Driving the wrong behavior can ultimately lower customer satisfaction

Interesting things we discovered along the way, cont'd.

- Customer satisfaction ratings were not always enough to counterbalance to the pressure to close tickets quickly (or to leave the issue incompletely resolved)
  - We used CSAT scores to give more richness and complexity to the rather dry process metrics – mined CSATs for the gold nuggets
- A crucial success factor was partnering with the supplier to review and adjust metrics where needed
  - The supplier's metrics team worked closely with Sandia's metrics team to analyze the data, identify trends, and implement improvements
- It's important to have a color-coded "dashboard" tool for at-a-glance statusing

Interesting things we discovered along the way, cont'd.

- Ticketing tool limitations hampered the collection and/or analysis of metrics
  - No data warehouse; had to run reports against live data (performance issue)
  - Reporting tool not user-friendly and required technical staff to write the reports; i.e., the consumers of the data (metrics teams) could not access the data
- It's important to develop separate SLAs for incidents versus service requests
- Don't create a metric just because you're curious or want to see something!
- Use the data as it was intended; be careful not to compare apples to oranges

Streamline metrics & reporting: Determine the best way to track & report new metrics

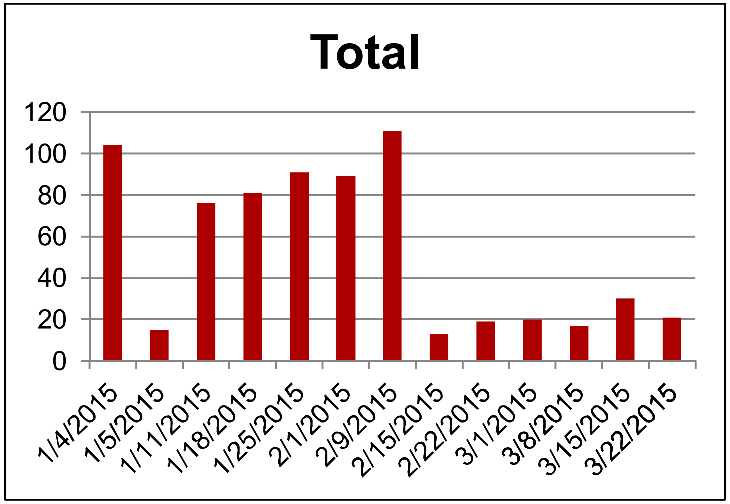
1. Ensure your data source is reliable
   - Make sure you have a reliable, repeatable method of extracting data and injecting it into the tracking/analysis tool
   - Create or use a Data Warehouse
   - Clean your data so that it can be easily consumed (macros, script, Power Query, etc.)
2. Document your data extraction process
   - Ensures you always pull the data the same way every time
   - Helps prevent loss of knowledge when employees leave
   - Helps in automating report functions
3. Automate (begin looking for ways to automate processes)
   - Macros & scripting reduce errors in extracting the data & drastically reduce the amount of time it takes to generate reports
   - Tools such as Excel's Power Suite for Office 2013 can help the automation process

Streamline metrics & reporting: Determine the best way to track & report new metrics, cont'd

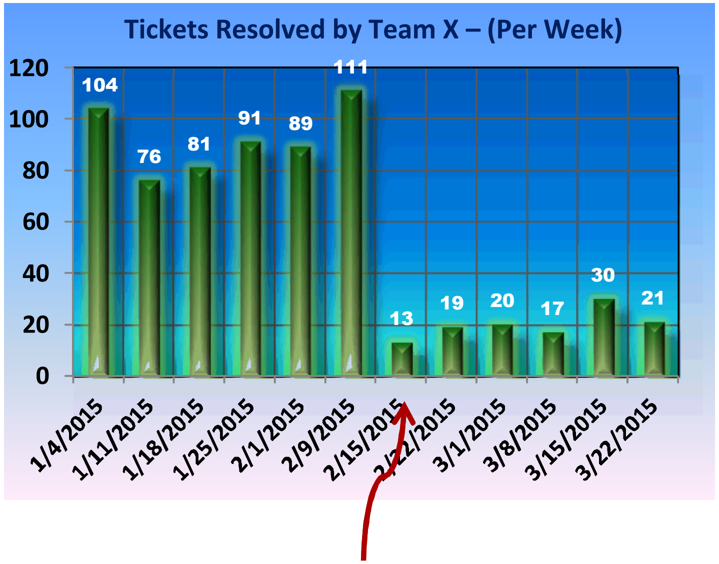
- Create dashboards for quick at-a-glance views
- We use Microsoft's Power BI (Business Intelligence) software to post reports to SharePoint (https://www.powerbi.com/)
  - "Self-Service" access to metrics data is in high demand

Provide interesting graphs, but keep them simple

- NOT a very useful graph
- Filename was only indicator of what the data showed



- Same graph with meaningful content
  - Grabs attention
  - Notes point users to interesting data fluctuations
  - Easier to check for data quality



NOTE: The drop in numbers on 2/15 shows when a second team took over the support for this area.

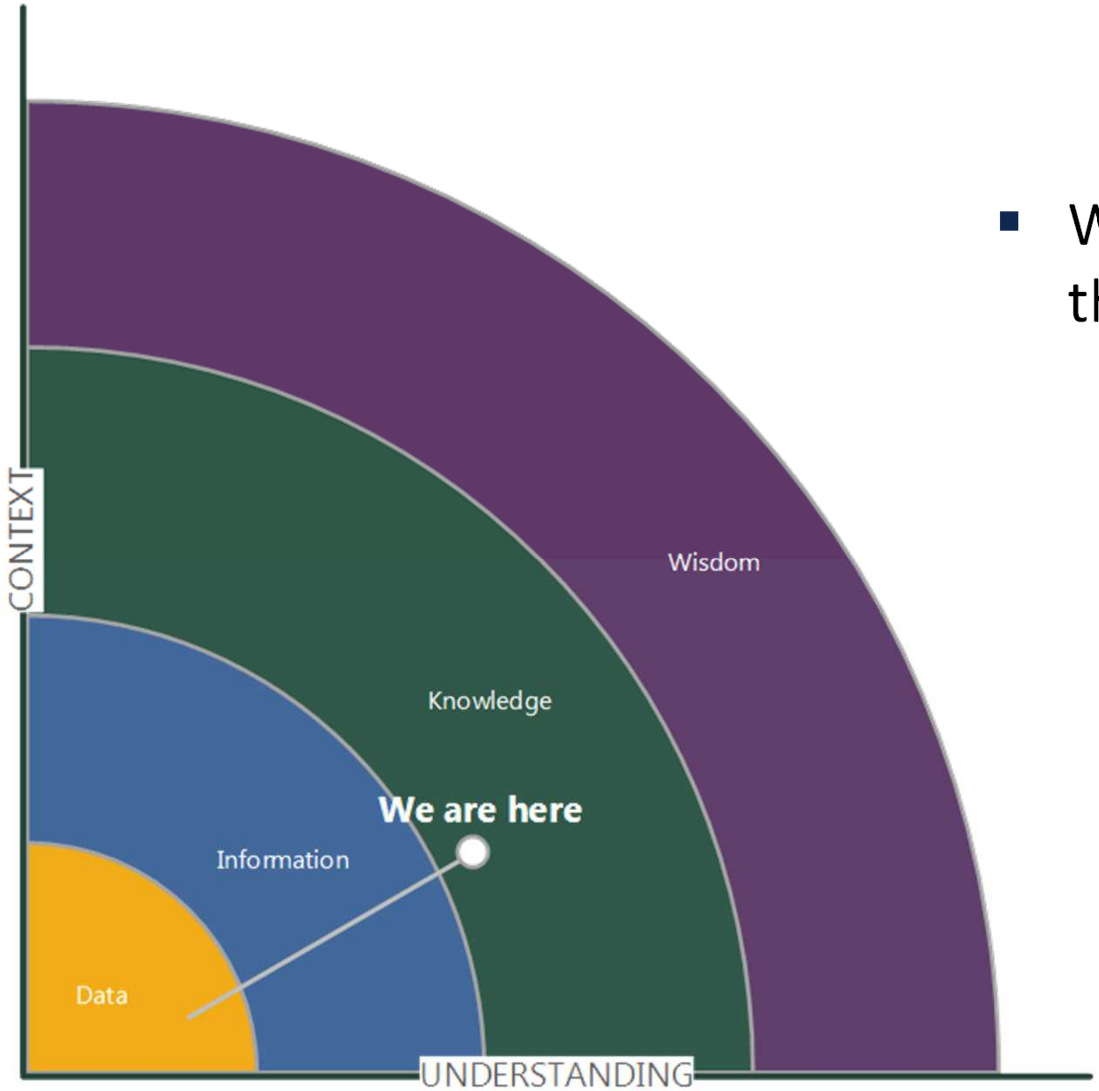
After automation: Forecasting & trend analysis

- Forecasting
  - Helps you identify & eliminate problems *before* they show up in the environment
- Trend analysis
  - Supports forecasting by identifying issues that are getting worse (or better) over time
  - Helps identify opportunities for improvement *or* processes that are working well (and that you want to repeat)
  - Can be tedious, but provides very valuable data
- Our team is just now beginning to work with our Problem Management team to dig into these areas

Improvements we've made over time

- Reduced the number of formal metrics from 40 to 28
- Fine-tuned the distribution the types and measurement frequencies:
  - Metric type distribution: 9 CPIs, 13 KPIs, 6 GPIs
  - Measurement frequencies: 22 monthly, 5 quarterly, 1 annually
- Frequently review metrics and adjust whenever needed
- Formally created and implemented improvement plans whenever a problem area is identified via metrics
- Fine-tuned the monthly reports so we weren't swallowed up by data not needed to understand the metrics
  - Also created ad-hoc reporting capability in case we DID need the more detailed data
- Began dynamically generating and reporting the selection criteria along with each metric report (which vastly improved data verification)
- As we became more knowledgeable about the metrics, identified (and eliminated) the metrics that didn't provide much value

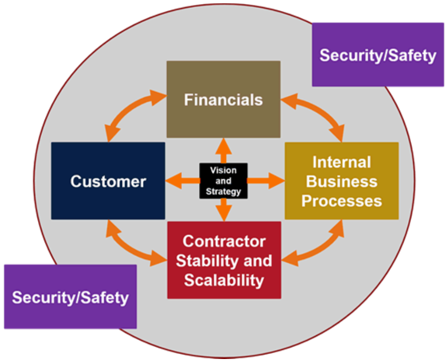
DIKW Model



- We are moving in the right direction!

Currently working on a Balanced Scorecard

- We categorized all of our risks into 5 categories …
  1. Customer
  2. Financial
  3. Internal Processes & Innovation
  4. Contractor Stability and Scalability
  5. Security/Safety



- … and then wrote IF, THEN, ELSE risk statements to begin analyzing the information to determine the possible impact of our risks
- We will use this model to mature our metrics

Resources & contact information

Presenters

Ross Hipple: rahippl@sandia.gov

Mark Holtzclaw: maholtz@sandia.gov

Resources

Microsoft's Power BI:

- https://www.powerbi.com/
- http://www.microsoft.com/en-us/powerbi/default.aspx

Questions?