Value Metrics for Continuous Improvement

Outsights Inc. September 2007

Session Abstract

Most support organizations continually gather data to monitor support Engineer performance. Yet today's key performance indicators don't promote improvement. While performance data is useful, it only tells half the story. To promote improvement, a second set of metrics is needed — value metrics [1] that speak directly to your improvement goals.

In this interactive session, learn how to apply systems thinking to create value metrics and apply them to promote ongoing improvement. You'll come away with the knowledge you need to create a double-loop workflow process that includes both performance metrics and value metrics to not only measure problem-resolution, but also support improvement. This valuable new technique enables you to make serious positive changes without introducing any new technology. For example, you'll hear how support can use the value metrics approach to influence and manage contact volume.

The workshop includes a fun, participatory process exercise that teaches you how to expose the unrealized capacity of your support organization. You'll learn how to create a value metrics performance management model and develop the new indicators you need to drive value in your business. You'll also learn how to apply these value metrics to the systemic workflows of case management and how management can show measured returns from improvements with existing resources.

[1] An example of a value metric is the measurement of your **solution maturity.** Solution Maturity — is when a "whole product" exists (i.e. the full capabilities, services, "know how" needed to achieve the expected experience with the product). The complete customer experience is enabled by readily accessible resources — they don't have to go outside their operation frame of reference to fill in any gaps.

Top 3 Takeaways

- Use systems thinking to create value-driving metrics to promote improvement without adding new technology.
- Create a double-loop workflow process that integrates value metrics with your current performance indicators, case load, and knowledge management workflow.
- Enable knowledge management and case management to reinforce each other to create optimization rather than contention for resources.

Session Agenda

Part 1: Introduction and current context sharing

Time: 10:00 a.m. to 11:00 a.m.

Objective: Develop a shared frame of reference to build our discussion.

Part 2: Developing new contexts

Time: 11:00 a.m. to 12:00 p.m.

Objective: Consider levels of opportunity for process improvements and the role metrics play in our reality.

Part 3: Methods for an improved environment

Time: 1:00 p.m. to 3:00 p.m.

Objective: Build a big picture which ties together key focusing dynamics and discuss some underlying elements of the Integrated Solution Network (ISN) model at a high level to be able to examine some of the key drivers of a renewed support environment.

Part 4: Current practices and what we can do right away

Time: 3:00 p.m. to 5:00 p.m.

Objective: Understand how a value-metrics approach can be implemented right away and review how a new metric, leveraging status codes and pared down workflows, can be used to influence improved levels of performance outcome.

Part 1: Introduction and Current Context Sharing

Time: 10:00 a.m. to 11:00 a.m.

Introductions:

Workshop

Discuss how to create a value-metrics-based performance management system, and develop the new indicators you need to drive value in your business. Learn how to apply these value metrics to the systemic workflows of case management, and how management can show measured returns from improvements with existing resources.

» Use systems-thinking to create value-driving metrics to promote improvement without adding new technology.

» Create a double-loop workflow process that integrates value metrics with your current performance indicators, case load, and knowledge management workflow.

» Enable knowledge management and case management to reinforce each other to create optimization rather than contention for resources.

Outsights Introduction

» Supporting service organizations since 1997 with knowledge-based strategies in service delivery environments.

» Originated with Knowledge Centered Support (KCS) and have evolved to include the Integrated Solution Network (ISN) model for operational sustainability.

» Have a comprehensive set of customer experiences and a foundational perspective based on Kaisan — teaching by Dr. W. Edwards Deming and more recently integrated with Douglas Englbart's model for Communities of Improvements, Peter Senge's Systems Thinking and Games Theory models.

Group Introduction

» Describe: Each person's, role, and organizational purpose
  - As a group — describe and scribe privately
    - What is the output of a support organization?
    - What are the primary measures?
  - Create list of common frame
  - Compare group list to most popular list

Rules of Engagement

» What would you most like to see us do or not do?

Topics and Objectives of the Workshop

Perspective: Relating to the support environment as a "system".

Support operates between a product and a customer expectation (a rock and a hard place?).

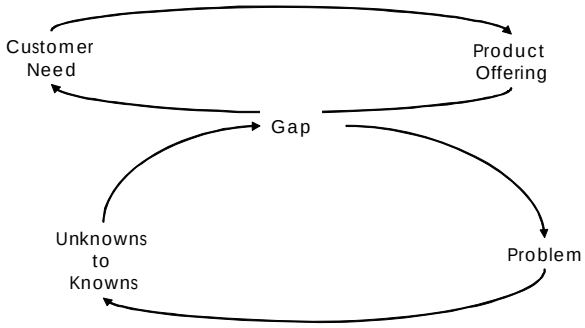
T/F

☐ Support's scope is set by product/service marketing and sales
☐ Support is part of a larger system — not a standalone
☐ Support's dynamics are complex and interdependent
☐ Support tends to focus on cases/tickets/incidents
☐ Support measures customer satisfaction in terms of satisfaction with its own performance
☐ Customers would prefer not to require support

Support is a system:

Much of the focus of support is in handling gaps — reflected in cases.

Ultimately, support does not have sufficient influence over the gaps. Case problem/solution codes are largely found to be arbitrarily used. Knowledge is not "tagged" or explicitly correlated to underlying problems.



Support finds problems cut across products, releases, customer environments. Support constantly struggles to keep up with growing complexity. Given the system, of which support is a part, how do we define "performance" for the support provided?

Perspectives on Performance

Definition of Performance Improvement:

Performance improvement *is the concept of* ***measuring*** *the* ***output*** *of a particular process or procedure, then* ***modifying*** *the process or procedure in order to* ***increase*** *the output, increase efficiency, or increase the effectiveness of the process or procedure.*

— Excerpt from Wikipedia

To enable the performance of support to be improved, one must consider the output, how it is measured, and by what method can it be improved?

Questions for Addressing Performance Improvement

» What is the key output of support?

» How do we measure the "gap"?

- Are case occurrences a form of gaps?
- Is lack of product use a form gaps?
- Are customers searching the web a form of gaps?

» Do we know what "problems" are?

- Are "how to" questions problems?
- Are "defects" problems?
- Are needs for "help" problems?

» How is the output leveraged?

- If customer satisfaction is about support — what does that do for the business?

» If support expends all its resources solving cases — what is the investment in support worth?

The key output should be:

Building understanding *(within the business about its customers' ability to achieve their purpose with the supported product)*.

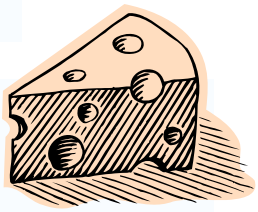
Support typically struggles with getting enough resources. How can support justify more resources if the organization AND customers would, ideally, not have a need for support?

Minding the Gap – Maybe Support is the "Eyes" of the Organization

The product will probably always have gaps, but maybe that is support's opportunity.

An example where "holes" provide a means for adding value to the "whole" is Swiss cheese.

Three types of bacteria are used in the production of Emmental (or Swiss) cheese:



1. *Streptococcus thermophilus*
2. *Lactobacillus* (*L. helveticus* or *L. bulgaricus*)
3. *Propionibacter* (*P. freudenreichii* or *P. shermani*).

In a late stage of cheese production, the *Propionibacter* consumes the lactic acid excreted by the other bacteria, and releases carbon dioxide gas, which slowly forms the bubbles that develop the eyes. Swiss cheese without eyes is known as "blind."

The holes provide value to the cheese, but they should not override the cheese experience**.** The holes are means to determine the "health" of cheese.

Support can determine how the gaps affect the whole, but support's focus has to be about how the gaps (i.e. instances where the customer's experiences falls short of the expectation) relate to the whole (i.e. the whole product — complete capability of the product the customer needs).

For support interactions to be leveraged to provide insights about the gaps in the product from the customer context, the case resolution types should be structured to follow a method of resolution which can follow predictable patterns.

Part 2: Developing New Contexts

Time 11:00 a.m. to 12:00 p.m.

Process Improvement Exercise

» What are the levels of improvements?

» What are the dynamics of improvement?

The Effect of Metrics on Outcomes

The vision has to be on the “whole” not the “hole.”
The vision is not the case/hole — it is the value of the whole product.

» Do we believe we get what we measure?

» What happens if we try to reduce time to resolution?

» Are we measuring and thus promoting constraints/holes or capabilities/cheese?

The view of the support process should be relative to the whole of the solution enabled — to raise the vision and value of the work.

To reset the focus we need:

» Vision — The whole experience of the customer with the product

» Feedback — The types of issues experienced by the customer

» Resources – Appropriate to the focus of the effort

The vision is not about resolving cases. The feedback is not about quantity. The metrics of support — because they are about the relationship of things — should be more like economics than a scorecard.

The term *economics* comes from the Greek for *oikos* (house) and *nomos* (custom or law), hence "rules of the house(hold)." A definition that captures much of modern economics is that of Lionel Robbins in a 1932 essay: **"the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.**" Scarcity means that available resources are insufficient to satisfy all wants and needs.

Part 3: Methods

Time: 1:00 p.m. to 3:00 p.m.

The Foundation

The operational model we use is the Integrated Solution Network (ISN). A significant dimension of this model is a focus on value-creation while increasing capability to perform by:

- Aligning the value to the customer with the customer relationship
- Positioning support as the channel for continuous optimization of value
- Lowering costs of remedial support — moving toward value-add services

To enable these as synergistic outcomes rather than competing outcomes, we have to:

Create performance indicators which shift the focus from activities to value.
Activity-based metrics focus on isolated things rather than complex relationship of things. They do not holistically consider the system. We need economic metrics (i.e. measures which calibrate multiple factors of importance). Economic measures consider relative value of important indicators. While we must monitor case volume, time to resolution (TTR), and Customer Satisfaction/Loyalty, as important outcomes, we cannot influence those things by setting objectives around them. We can influence them by establishing a value-based focus. Value-based metrics integrate multiple dimensions. The purpose of the value-based metrics is to create focus to enable larger factors like community proficiency, profitability, and productivity to be enabled.

Create reinforcing workflows for continuous improvement between knowledge and cases.
These engage people in reflecting on cases to organize knowledge and ensure the customers' context forms the access concepts. The content is engaged in the workflows with measured practices which serve to provide information to the organization about the ratio of known and unknown issues.

Refocus resources on core competencies.
This element of the ISN model is beyond the scope of this workshop. It entails aligning demand with the right resource based on performance reputation, not skill-based case routing.

Value-Based Metrics

Maturity

Maturity is a holistic perspective which reflects the % of customer demand (i.e. the gap) addressed by explicit capability (i.e. "know how", product, or service).

- Solution Maturity — is when a "whole product" exists (i.e. the full capabilities, services, "know how" needed to achieve the expected experience with the product). The complete customer experience is enabled by readily accessible resources. They don't have to go outside their operation frame of reference to fill in any gaps. Support generally does not have the means to measure this.
- Knowledge Maturity — is the % of customer support demand addressed by "Normalized Content." Normalized Content is content which has been structured into objects according to their relationship to the customer's perception of need with defined links to each step in a defined path of resolution logic.

This ensures:

- The best method is recognizable from the customer's perspective.
- The order of steps taken by the customer is as prescribed by an expert through the content.
- The customer has flexibility to guide themselves according to their level of understanding.

The "demand" is reflected in the volume of incoming cases or by customers trying to solve problems on the web. This demand should be tagged to reflect "a problem". Maturity is the % of demand which correlates to existing content which documents known methods for addressing the problem.

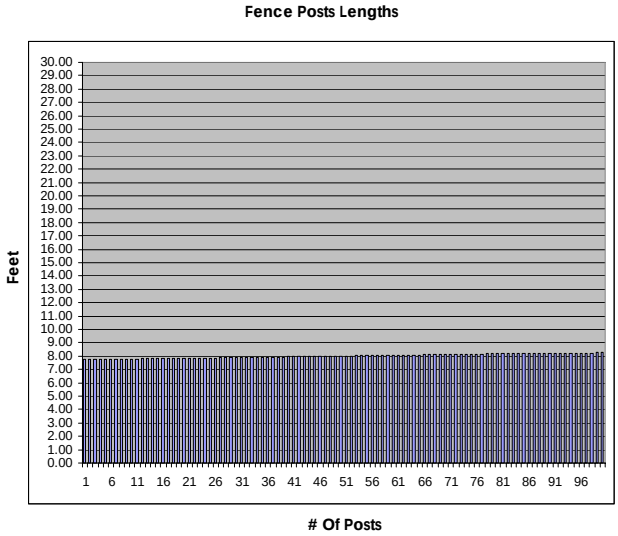
As knowledge maturity grows, the organization should leverage its understanding of demand to eliminate problems and to ensure current problems are resolved as effectively as possible.

Index of Variance (IOV)

The IOV is a metric which enables support to reduce variation in addressing customer issues. Consistency in addressing issues is the strongest influencer of customer satisfaction.

The IOV is the measure of variation of how long it takes to resolve an issue. It is computed as the Standard Deviation divided by the mean Time to Close (TTC).

If we were building a fence, we would expect the IOV to be extremely low. The IOV for a particular type of problem should be low .10. Let's say we need 100 fence posts to build a fence. The perfect length of each post is 8ft so that we will have 6ft above ground and bury each post two feet deep.



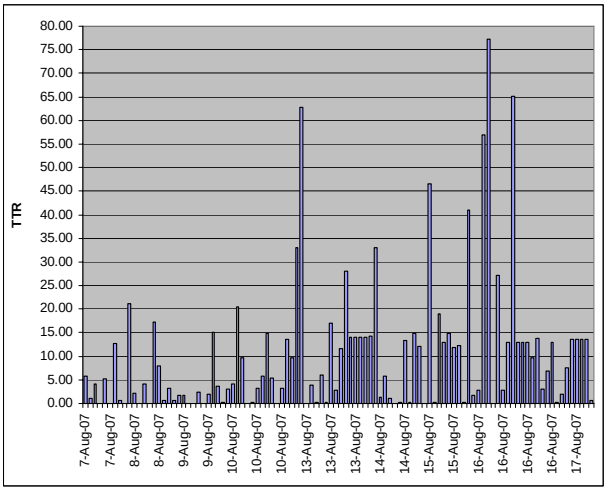
In the above example, the average length of the posts is 8.01ft, the Standard Deviation is .16ft and the Index of Variance (IOV) is .02. The shortest post is 7.75ft and the longest is 8.25ft. The graph shows the lengths of the fence posts. This is a workable set of 8ft fence posts.

In many support environments, the IOV for Time to Close (TTC) is well over 1.0. Many of them are over 2.0!

In the medical industry, the methods for testing specific conditions are standardized to ensure the IOV is reasonable for the majority of occurrences of known illnesses. Support is largely ruled by its exceptions.

What we have discovered:

» Support management tries to reduce the TTR too overtly — it should be influenced, not controlled.
» There is too much variation for improvement efforts in reducing TTR to produce sustainable and quality results — many different situations mean the "median/average" means nothing. Attempting to reduce it overtly results in manipulation of the system.



Time to Resolution for cases with common problem
Average TTR = 14.37, IOV = 1.94

» Managing IOV — based on an understanding of variation produces an overall reduction in TTR AND improved quality.

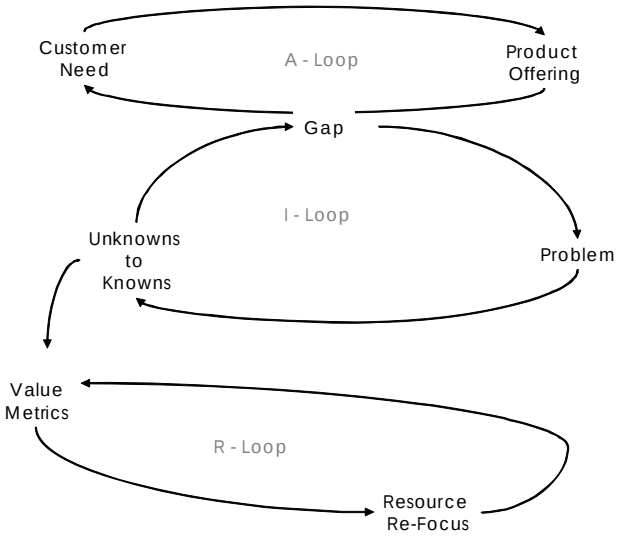
Consider: If your hospital measures hospital stays the way support measures TTC?

The Improvement Workflows

To enable continuous improvement, the work must be shifted from working cases – to enabling cases to be resolved consistently through an understanding of the types of problems being solved so the right resources can focus on Known and Unknowns appropriately:

A-Loop Workflow

As the customer demand (i.e. request for help) is processed, the workflows, metrics and resources which satisfy the demand are part of the Act-Loop (A-Loop) processes.



I-Loop Workflow

The Improve-Loop (I-Loop) uses dashboards to track the patterns and emerging dynamics to improve processes and content relevant to keeping the product "whole" in the experience of the customer (i.e. no value gaps).

R-Loop Workflow

The Rethink-Loop (R-Loop) oversees the performance of the environment (people, tools and processes) relative to business objectives. It renews the operating environment to raise the bar and expand the system capabilities.

Shifting Unknowns to Known happens in the I-loop. If it is done in the A-loop, the case resolution process will get bogged down with too much incomplete knowledge and too little knowledge will be completed, often creating a bottleneck in the completion process.

Often, many content objects are generated without an explicit association to named problems. This content does not produce a measurable effect on the consistency and efficiency of resolution for specific problems. Without this measure, the organization cannot justify a shift of resources to dedicated knowledge work.

The work of the organization has to be separated to reduce the focus on remedial support of Knowns to transitioning Unknowns to Knowns — relative to the value of product to the customer.

Workflow Focus

Responsibility	What They Need to Know
A-loop — Efficient / Consistent Demand Processing To consistently guide the customer from demand to solution as efficiently as possible and such that the customer is confident.	» New knowledge for their domains (Resolution Paths show expected time to travel & Resource Level - user, partner, support) » Who are the resources for collaboration on Unknowns or Exceptions » Any new rules/processes to be followed » What they are being graded on and the expectation of success
I-Loop — Close gaps in Product To prevent remedial demand. Contribute to the integrity of the domain by enabling the "whole product." Improve the products/ technology capabilities and all services necessary for the customer to fully utilize the product capability.	» The scope of the domain (whole product) from the customer's capabilities perspective » Any emerging gaps and their value » What resources/information is available to fill the gaps
R-Loop — Enable the Environment To promote focus on value. Recalibrate the system to optimize performance and re-draw the scope to focus the system on new targets.	» The capacity of the current system » The performance drivers of the current system » The new target based on external drivers (predicting demand)

Part 4: What Can be Done with Current KM and CM

Time 3:00 p.m. to 5:00 p.m.

While it is beneficial to understand the big picture, it is often necessary to implement improvements incrementally. The organization needs to implement something without having to create major change in order to see results and fuel the focus for continued improvements.

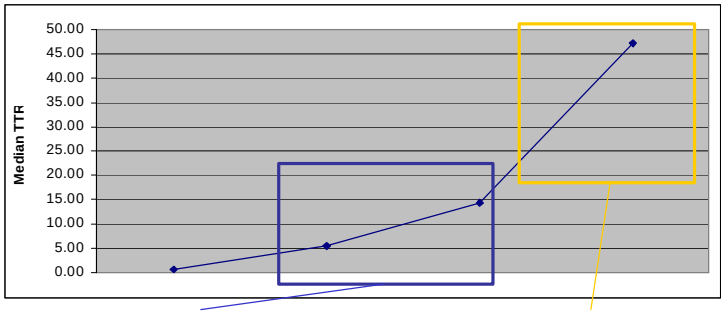
Clumping Cases and IOV

While support cases cannot be made as consistent as fence posts, they also do not follow a random pattern. What we have found through analysis is that complex support environment cases clump into few shared types of issues which can be split to designate a course of action.

The TTR can be split, very often, into clumps which represent types of situations.

These clumps can be handled by different methods.

Groupings of Median TTR for cases closed from Aug 7 to Aug 17



For example:

***Knowns* – Issues that have been reported and solved before.**

- Can be recognized by Known troubleshooting paths and solved by known methods
- Opportunity to reduce Time to Recognition and Time to Resolution with Resolution Paths.

***Unknowns* – Issues that are truly new**

- Can be recognized as new through the use of troubleshooting paths that eliminate Knowns
- Opportunity to reduce Time to Resolution with collaboration of expert resources freed by reduction of TTR in Knowns

» The first clump is considered a break/fix and is best automated.
» The next set of clumps can be resolved by knowledge.
» The last clump has a high TTR and can be considered a defect or unknown exception case.

When these are handled inconsistently, many cases which are “known” are not recognized quickly and turn into long duration TTR cases.

The processes of case resolution should be about recognizing Knowns — so they can be handled consistently and free up resources to turn more Unknowns into Knowns. More resources will have time to collaborate on Unknowns. To create the focus on consistent handling of Knowns, the measures have to focus on IOV and level of Knowns.

Workflows have to create improvements around creating and leveraging "Knowns."

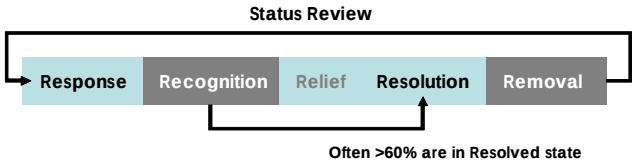
Workflows — Leveraging Current Capabilities

The CRM system typically supports a set of status codes which reflect the state of resolution which can be correlated to the following:

- Response — When a technical person is on the case
- Recognition — When the technical problem has been isolated and a resolution method has been identified
- Relief — When the resolution has been proposed to the customer
- Resolution — When the customer has accepted to the resolution and agreed to close the case
- Removal — When the resolution to the problem has been normalized or structured and made available to the audience who might experience the problem.

While the organization typically seeks to improve the Time to Response and Time to Resolution, it is often difficult to achieve significant long-term improvements in these areas.

To influence an improved outcome in response and resolution, the organization must shift its focus to Recognition and Removal.



If the organization tracks the time it takes to identify the problem (i.e. Recognition), it will avoid "buying time" with trial and error methods and will promote identifying the problem clearly.

Identifying the problem can be done with syntax like "problem: cheese lacks refrigeration" in the case, by a hyperlink to the content which resolves the issue for the cheese being left without refrigeration.

Caution: It is important not to use aggregate problem categories to reflect this but to designate it at a specific problem level. If there is a focus to identify the problem accurately with a time stamp, then the total resolution time will be shortened.

Time to Removal is the time until the resolution is documented in a manner that will potentially prevent the support organization from expending its expertise on the issue again. This is done either by creating normalized content to guide the user through a resolution path, or by eliminating the problem.

The organization must be responsible apply I-Loop resources (i.e. people dedicated to knowledge work) to put processes in place so support for the problem is not a necessary part of the customers' experience.

Pared Down Approach to Double-Loop Workflows

Using current resources/tools, implement initial practices to start improvements.

Practices for Management

1. Create Problem buckets — Name the demand areas and organize some percentage of knowledge content according to resolution paths which reflect customer experiences — start to provide visibility into how problems are being solved.
2. Implement an IOV measurement — even if it is inaccurate, the focus will create improvements.
3. Monitor which problems are solved — audit the user practices.

Practices for Users/Agents

1. Documentation/codification in the case to represent the problem solved.
2. Accurately reflect status of case — implement Recognition and Removal.
3. Feedback — about content found or not found (accountability for feedback).

These don't require automation but do require commitment to the process.

Conclusions

- Support has to shift its focus to the systemic level in order to position the value it creates
  - Systemic focus is created by measuring maturity and variability
- Support resources have to be distributed between A-Loop and I-Loop workflows to enable improvements — R-Loop must be enabled when improvements begin
  - Assessing the demand and organizing content to it is done in the I-Loop
- Feedback from the processes has to be based on an understanding of variation to enable continuous improvements
  - TTR is improved as an outcome not the goal