Using Evidence-Based Management to help choose the right things to measure.

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Read the EBM Guide at:
scrum.org/ebm
Thoughts? This why we should care. *Old ways of measuring success can lead to a sharp decline-or failure.*

Aetna’s primary performance indicators were not adequately connected to the needs of end users.

It is not necessary to change. Survival is not mandatory.

*W. Edwards Deming*

source: quotes.deming.org/10083
Measure what is measurable and make measurable what is not so.

Galileo

Common Metrics

- Velocity
- Commitment Reliability
- Capacity Utilization
- Estimation Variance
- Scope Change
- Backlog Health
- Time Spent
- Budget Adherence
- Schedule Adherence

- Can these metrics all look pretty good, but your project or product be unsuccessful?

- Examine whether your metrics are consistent with the things your customers value most.
Outcomes Over Output

- Fundamental distinction between a mechanical versus an outcome mindset.

A Mechanical mindset uses a factory model
An Outcome mindset is knowledge-oriented

Problem: We need a way to better connect the customer to the things that we manage and measure.

DEFINITION

KPI = Key Performance Indicator

Key performance indicators are a set of quantifiable measures that a company can use to evaluate its performance. The KPIs used to measure success or failure vary from company to company.

Unless the KPI can be tied to a business objective or results, it is just a vanity metric.
TYPES OF KPIs
Qualitative & Quantitative

QUALITATIVE

Subjective measures (e.g., customer satisfaction)

Objective evaluation (e.g., based on figures)

Types of KPIs

TYPES OF KPIs

How does this correlate?

good or bad

NUMERICAL, MATHEMATICAL MEASURES

Statistical results (e.g., items per order, new vs. returning customers)

Lagging & Leading KPIs

Lagging KPIs measure the output of past activities.
They are a type of indicator that reflects the success or failure of an event.

Leading KPIs measure activities that have a significant impact on future performance.
They measure the input required for better results and can be used to predict future performance.
FUNCTIONS
Summarize and Facilitate

KPIs reduce a large amount of data into a practical number of important indicators.

The only way to determine the right KPIs to track is to speak with your business leaders and customers to understand what truly matters to them.

Evidence Based Management Framework

Measurement is strategic in nature. It can help us know if we are moving closer to the goals of the organization.
Key Value Area

Current Value (CV)

Reveals the value that the organization delivers to customers, today.

Goal: to maximize the value that an organization delivers to customers and stakeholders at the present time; it considers only what exists right now, not what it might do in the future.

Questions:

• How happy are customers today? Is their happiness improving or declining?
• How happy are employees? Is their happiness improving or declining?
• How happy are investors and other stakeholders? Is their happiness improving or declining?

Example measures - Current Value

<table>
<thead>
<tr>
<th>Leading indicators</th>
<th>Lagging indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Satisfaction</td>
<td>Revenue per Employee</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>Product Cost Ratio</td>
</tr>
<tr>
<td>Investor Satisfaction</td>
<td></td>
</tr>
<tr>
<td>Usage Index</td>
<td></td>
</tr>
</tbody>
</table>
Securing Success by Securing Scope?

Too many products are designed on the premise that the initial information and assumptions are valid throughout the entire planning horizon.

Regulatory projects are always at risk of over compliance due to a combination of both legal and technical jargon that is seldom specific on what is truly required. Talk to the regulators on a regular basis to obtain clear validation.
Unrealized Value (UV)

The potential future value that could be realized if the organization was able to perfectly meet the needs of all potential customers.

Goal: to maximize the value that the organization realizes from a product over time.

Questions:
- Can any additional money be made in this market?
- Is it worth the effort and risk to pursue further returns in this market?
- Should further investments be made to capture additional Unrealized Value?

UV - Example measures

<table>
<thead>
<tr>
<th>Leading indicators</th>
<th>Lagging indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor strength/weakness</td>
<td></td>
</tr>
<tr>
<td>Customer acquisition or defection</td>
<td></td>
</tr>
<tr>
<td>Regulatory changes</td>
<td></td>
</tr>
<tr>
<td>Market share trends</td>
<td></td>
</tr>
<tr>
<td>Overall market growth/decline relative to market share trends</td>
<td></td>
</tr>
</tbody>
</table>
The organization’s ability to quickly deliver new capabilities, services, or products.

**Goal:** to minimize the amount of time it takes for the organization to deliver value.

**Questions:**
- How fast can the organization learn from new experiments?
- How fast can you learn from new information and adapt?
- How fast can you deliver new value to customers?

### Time to Market (T2M) - Example measures

<table>
<thead>
<tr>
<th>Leading indicators</th>
<th>Lagging indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of Build Success</td>
<td></td>
</tr>
<tr>
<td>Build pass/fail trends</td>
<td></td>
</tr>
<tr>
<td>Release Stabilization trends</td>
<td></td>
</tr>
<tr>
<td>MTTR</td>
<td></td>
</tr>
<tr>
<td>Cycle Time (start of release work till release)</td>
<td></td>
</tr>
<tr>
<td>Release Frequency</td>
<td></td>
</tr>
<tr>
<td>Lead Time (idea proposed until value realization)</td>
<td></td>
</tr>
<tr>
<td>Time to Learn (time from idea to impact)</td>
<td></td>
</tr>
</tbody>
</table>
Done is More Than Software in Production

<table>
<thead>
<tr>
<th>DEVELOPMENT</th>
<th>OPERATIONS</th>
<th>CUSTOMERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COULD BE BETTER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BETTER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BEST</strong></td>
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The ability of a product development organization to deliver new capabilities that might better meet customer needs.

**Goal:** to maximize the organization’s ability to deliver new capabilities and innovative solutions.

**Questions:**
- What prevents the organization from delivering new value?
- Have we considered limiting Work in Progress?
- What prevents customers or users from benefiting from that innovation?

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Key Value Area

**Ability to Innovate (A2I)**

The ability of a product development organization to deliver new capabilities that might better meet customer needs.

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### Ability to Innovate - Example measures

<table>
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<tr>
<th>Leading indicators</th>
<th>Lagging indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Technical Debt trends</td>
<td>- Innovation Rate</td>
</tr>
<tr>
<td>- Architectural Coupling</td>
<td>- Installed Version Index</td>
</tr>
<tr>
<td>- Defect trends</td>
<td>- Feature Usage Index</td>
</tr>
<tr>
<td>- Production incident trends</td>
<td></td>
</tr>
<tr>
<td>- Downtime trends</td>
<td></td>
</tr>
<tr>
<td>- Number of active branches, time spent merging</td>
<td></td>
</tr>
<tr>
<td>- Time spent context-switching</td>
<td></td>
</tr>
<tr>
<td>- Velocity trends</td>
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</table>

*Scrum.org*

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**Improve empirically using Evidence-Based Management**

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Presentation Title
FRAME THE PRODUCT/PROJECT

Determine Key Values of Interest
Establish initial values/baseline measures for the selected key value metrics.

Diagnose problem areas and brainstorm potential metrics.
**Metrics Working Session**

- Do we understand what our customers really value?
- Will the customers of tomorrow define quality differently from the way today’s customers do?
- How closely do our customer satisfaction and financial metrics correlate?
- Are we measuring units and volumes, or outcomes?
- Do our products or services have more features or complexity than most of our customers value?
- Is there a new metric that aligns with the needs of future customers?

Determine the most impactful Key Value Area to focus on first and begin to run small quick experiments.
A team that decides to increase quality may want to focus on the Defects Key Value Metric and try implementing Test Driven Development practices.

**OUTPUT**
Better unit test coverage
Cleaner code
Goal was not just to write more tests....

Hope Is Not A Strategy

Problem: We need a way to better connect the customer to the things that we manage and measure.
Continue the Hypothesis, Experiment learning loop to improve by sensing and responding.

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**QUOTATIONS**

> What gets measured, gets managed.
> Peter Drucker

> The essence of strategy is choosing what not to do.
> Professor Michael Porter

Lets choose not to focus exclusively on outputs because our customers and investors care about outcomes!
Learn Quickly w/Scrum

- Measure success in terms of value and outcomes, not output and progress.
- Celebrate success and learn what helped create it.
- Focus on improving results. EBM provides a holistic view.
- Maximize learning to become wiser and better.
- Do the best you can. The result will be far better than fearing failure and doing little.
- What do you want to achieve?
- Take a small step and evaluate
- Did that help? If not make another hypothesis and try again
- Stay aligned with your mission and goals.