Kiviat Charts

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Many times, it takes more than one metric to understand, evaluate or control a software project, product, process, or service. One way to show a summary view of a set of metrics is to use a Kiviat chart, also called a polar chart, radar chart or spider chart. In a Kiviat chart, each "spoke" represents a metric with the metric's value plotted on that spoke. The outer circle on a Kiviat chart can be used as the objective or threshold or inner and outer circles can be used to depict valid ranges.

Figure 1 illustrates an example of a Kiviat chart that summarizes a set of customer satisfaction scores. From this chart, it is fairly easy to identify documentation as the area that is farthest away from the outer circle goal of having a 5 (very satisfied) as a satisfaction score. Therefore, documentation presents the best opportunity for process improvement according to this chart.
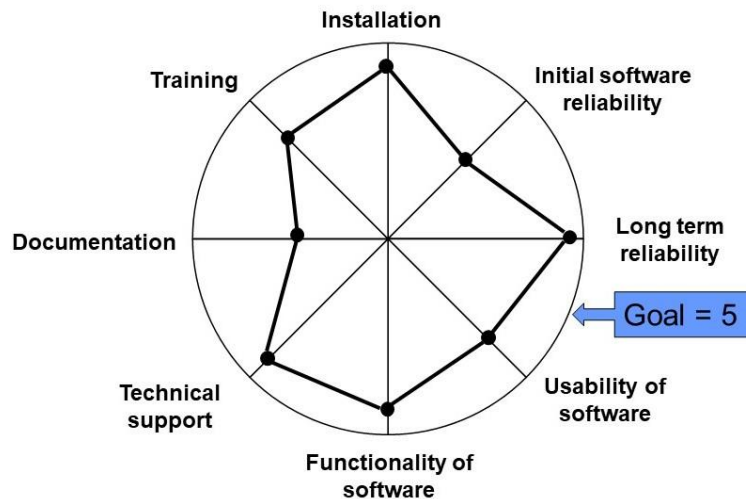

Figure 1: Example of a Kiviat Chart

A Kiviat chart can also be used to compare several different items across several parameters against the ideal by plotting additional sets of point. For example, Figure 2 illustrated the comparison of two different project's customer satisfaction results with Project A being the solid line and Project B being the dashed line. Note that project B has a much better customer satisfaction score for documentation than project A. This might indicate an area where project A can benchmark the documentation practice of project B to aid in their process improvement initiative. On the other hand, project B might benchmark project A's software usability methods, where project A has a better satisfaction score.

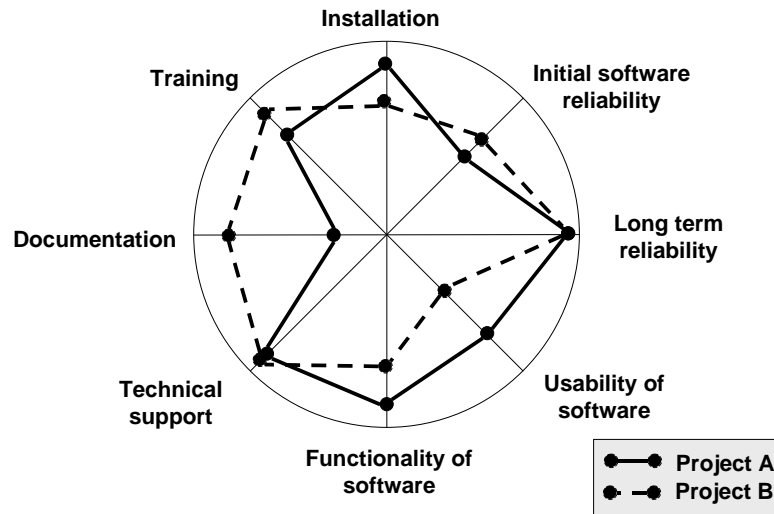**Customer Satisfaction Survey Results
Comparison of Project A & B**

Figure 2: Example of a Kiviat Chart Comparison

If our customers were asked to rank our company against one of its competitors on various customer satisfiers, a Kaviat chart like the one in Figure 2 could be used to make comparisons between our companies scores (solid line) and our competitor's scores (dashed line). For example, even though our company had a high score in Technical support, there might still be a concern if our competitors are scoring even higher than we are with our customers.

Another use for a comparison Kiviat chart like this might be to compare the scoring of different vendors on a set of evaluation criteria used in vendor evaluation prior to vendor selection. The Kiviat chart would help summarize the strengths and weaknesses of each vendor.

Alternately, the Kiviat chart can be combined with a stoplight chart by adding red/yellow/green bands to the chart. This combination is illustrated in Figure 3.
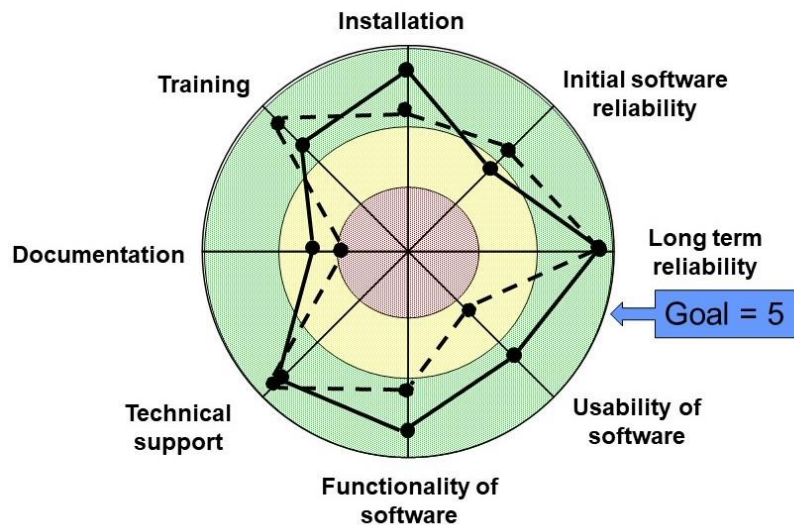
Customer Satisfaction Survey Results

Figure 3: Example of a Kiviat Chart & Stopligt Chart Combination