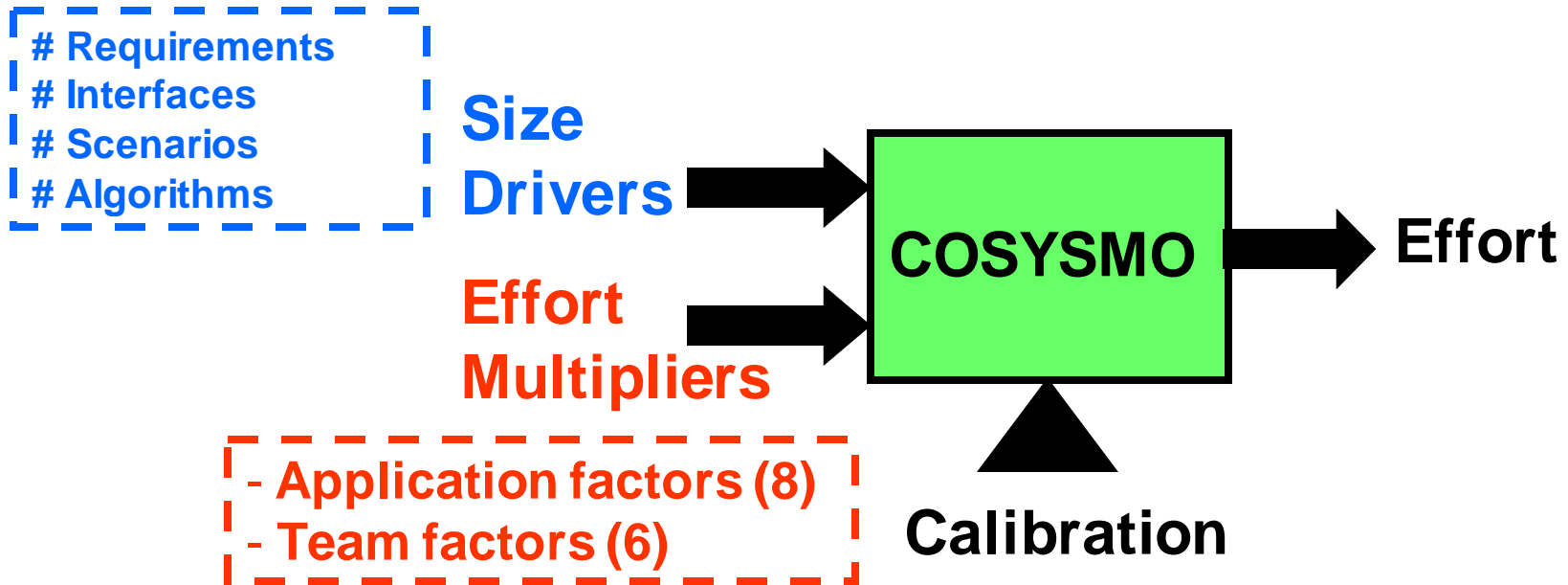
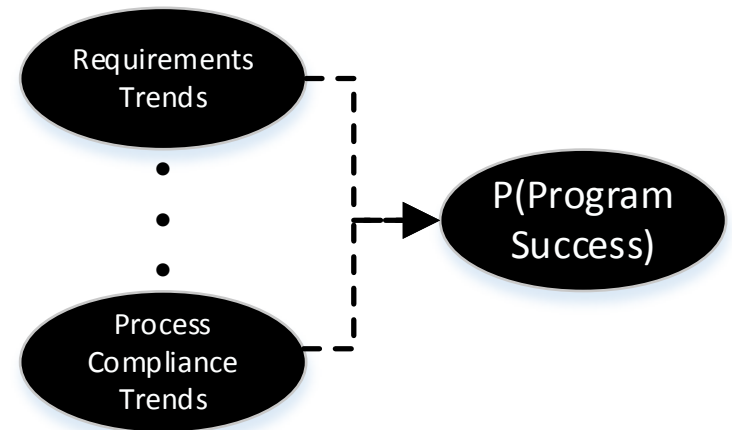


Systems Engineering Effort Estimation



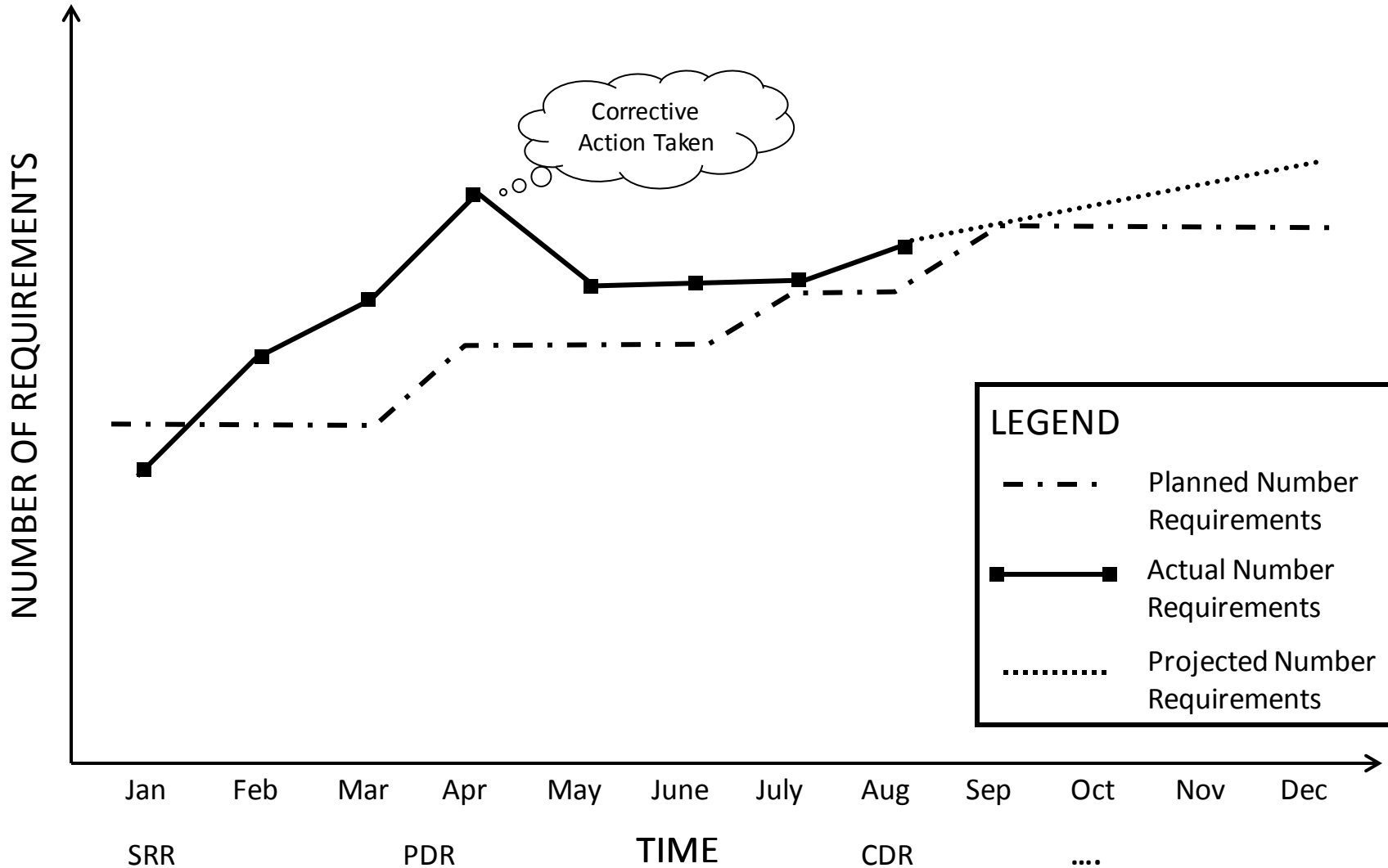
Systems Engineering Leading Indicators

1. Requirements Trends
2. System Definition Change Backlog Trend
3. Interface Trends
4. Requirements Validation Trends
5. Requirements Verification Trends
6. Work Product Approval Trends
7. Review Action Closure Trends
8. Risk Exposure Trends
9. Risk Handling Trends
10. Technology Maturity Trends
11. Technical Measurement Trends
12. Systems Engineering Staffing & Skills Trends
13. Process Compliance Trends

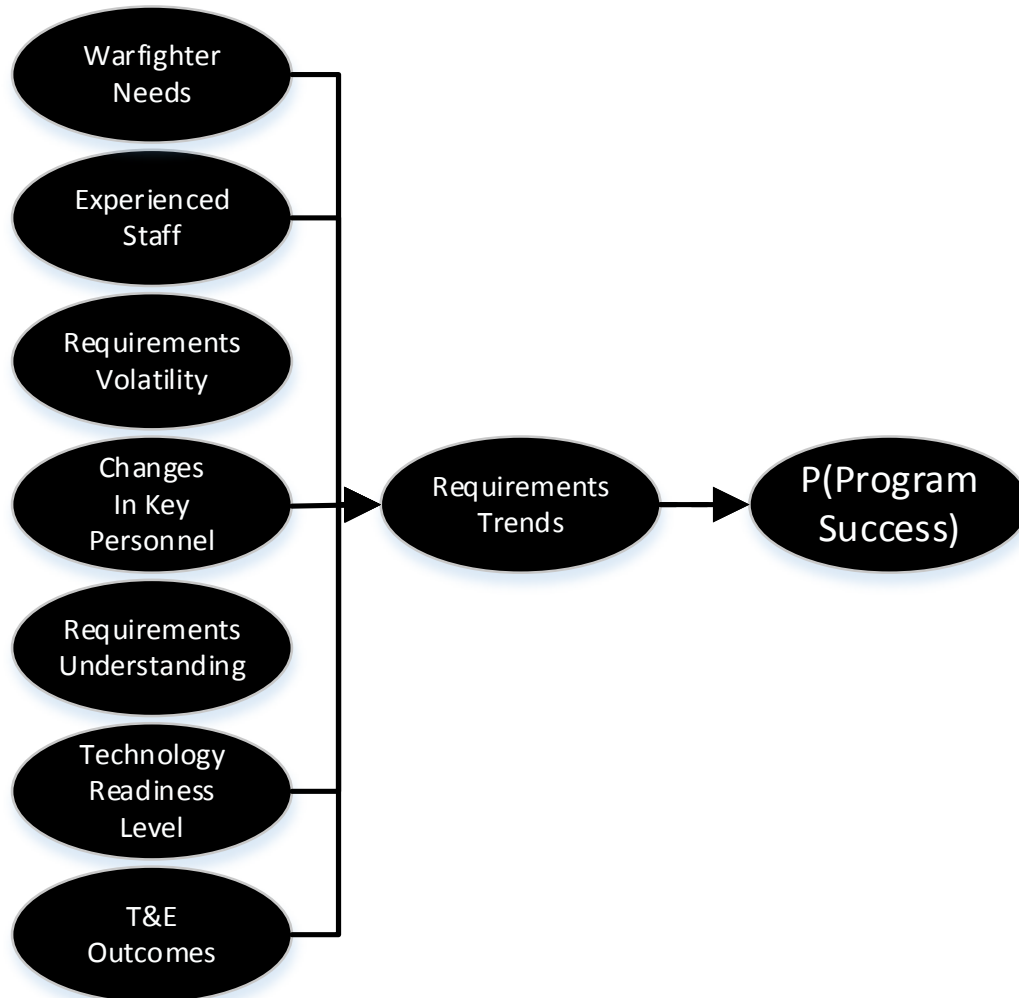


Leading Indicator Example: Requirements Trends

Requirements Growth Trends



Implied Causality



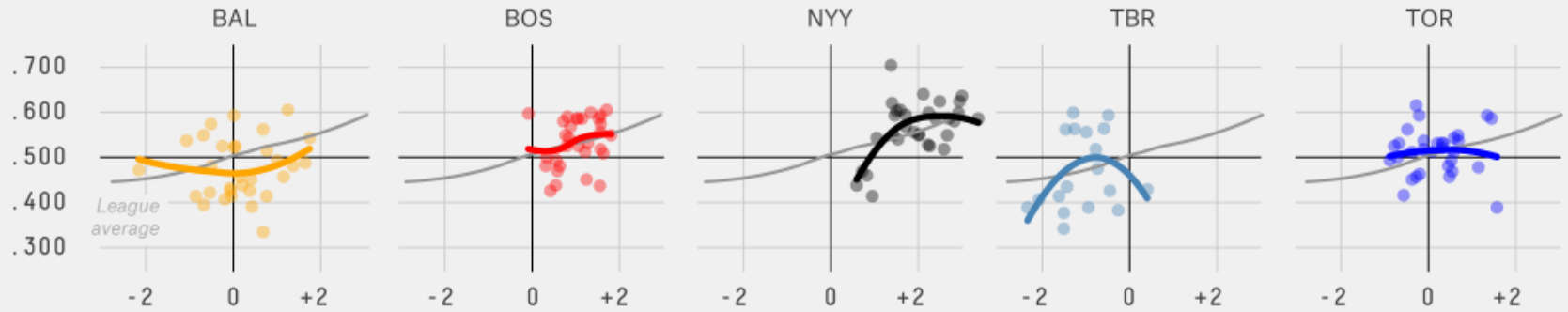
Baseball Analytics

$$\frac{\text{runs scored}^2}{\text{runs scored}^2 + \text{runs allowed}^2} = \text{estimate of percentage of games won}$$

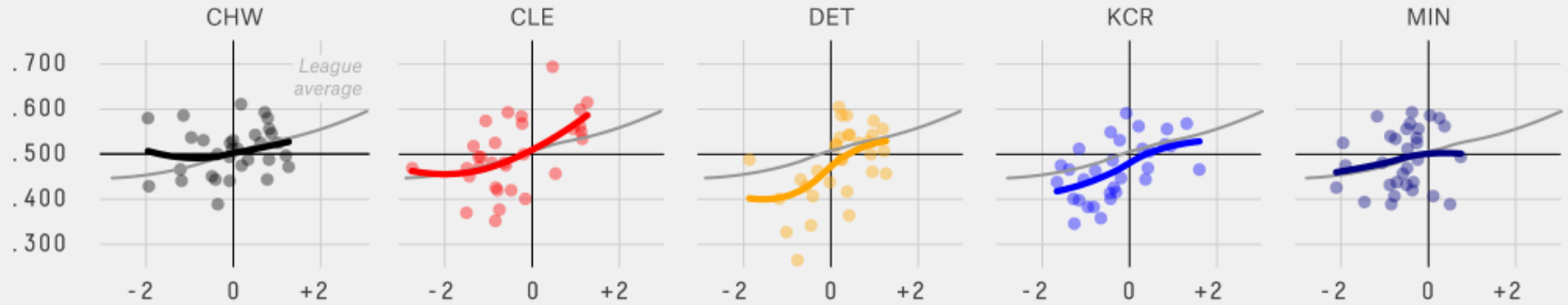


The screenshot shows a web browser displaying the page "2002 Oakland Athletics Statistics | Baseball-Reference.com". The address bar shows the URL "www.baseball-reference.com/teams/OAK/2002.shtml". The website's navigation menu includes "Sports Reference", "Baseball", "Football (college)", "Basketball (college)", "Hockey", "Soccer", "Blog", and "Widgets". The main header features the "BASEBALL REFERENCE" logo. Below the header is a navigation bar with tabs for "Players", "Teams" (which is highlighted in red), "Seasons", "Leaders", "MLB Scores" (with a red badge showing "17"), and "MLB F". The main content area displays the "2002 Oakland Athletics Statistics" page. On the left is the Oakland Athletics logo. To the right of the logo are two buttons: "<< 2001 Season" and "2003 Season >>". Below these buttons, the text reads: "Record: 103-59, Finished 1st in [AL_West](#) ([Schedule and Results](#))" and "Pythagorean W-L: 96-66, 800 Runs, 654 Runs Allowed".

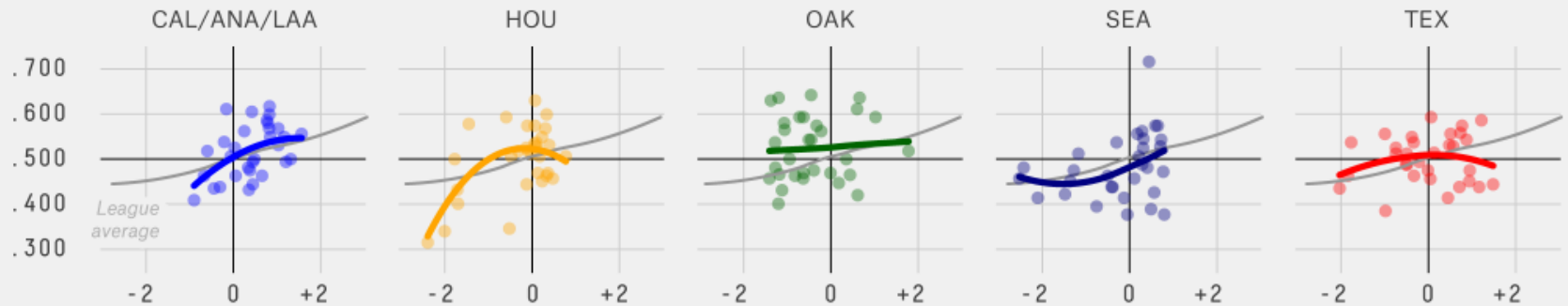
AMERICAN LEAGUE EAST



AMERICAN LEAGUE CENTRAL



AMERICAN LEAGUE WEST



<https://fivethirtyeight.com/features/how-your-favorite-baseball-team-blows-its-money/>