

Performance Index for Software Projects

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The term Index signifies a lot of aspects in Financial Markets and Economy. The consumer price index, which is the inflation gauge, depicts the price level in the economy. The capital market indices act as mirrors, which reflect the health of the country as well as that of various sectors of the economy. The trends reflected by Index movement help the market constituents in planning their future actions, e.g the inflation index assists the monetary authorities to plan their future course on interest rates and money supply, capital market indices help entities like Mutual Funds in doing portfolio hedging, buy/sell decisions etc. Further an Index captures an entire picture of the underlying factor (price level, economic performance) rather than of a individual component. Thus an ideal Index is made up of components, each of which capture some aspects, which add up to the final objective (viz. Price level in case of inflation index, financial/economic performance in case of capital market index) for which index is constructed.

The above idea of index usage in financial markets can be extended in measuring the project performance of various groups in the software organization.

At present most of the software organizations use methods like Control charts, Pareto Analysis or software tools like Microsoft projects, Rational Rose etc to track the project performance and control the processes involved. The above methods though reliable suffer from shortcomings like

1. They need imparting special training to the users. Learning curve is very high
2. They are expensive, thus only few people in the organization can be trained in it.
3. The results produced by the above methods are too many, which leads to diffused attention to them by the users.
4. The output is understood only by higher level of management. Actual software professionals who do the coding are not interested in the above methods due to lack of time or interest

Any ongoing software project is gauged by output factors like closing ratio, turnaround time to solve problems, Mean time between errors, Defect Aging, average effort etc. Control charts are also drawn for some of the above mentioned factors to see whether the project is within the control limits defined by the organization. However too many such factors make it impossible to draw a complete picture of the project performance. This is further complicated by the shortcomings mentioned above. Further all the present process control methods are static in nature i.e the output indicators tell the status of the project as on a particular date not across a range of time. What is

needed is a single simple number which can tell any user, be it a Project Manager, Project leader, Team member the status or performance of the project across a time period. This can be correlated with interest a nominal layman takes in knowing movement of the Capital Market Index rather than in knowing prices of various stocks or different strategies talked about by complex portfolio managers. Such simple number can be an Index calculated with the help of the project output factors mentioned above. The components or factors of such index are readily available in software organization, which have attained sufficient level of software process maturity.

We can construct such performance level index for Support and Development software projects. We think that such an index will help the organization as well as individual software teams to make decisions like

1. Resource allocation: A Project Manager by studying the index movement or trends can decide on the optimal personnel needed so as to maintain or improve performance either by internal job rotations, by targeting specific class of problems etc. This is similar to Stock Index reshuffle wherein some old stocks are done away in return for some new stocks
2. Group performance appraisal: By tracking the index top management can have another useful tool in their hands to appraise group performance at no extra cost
3. Process Audits: An Compliance Index can help functions like Software Quality Assurance to have a dynamic macro view of the compliance of predefined standards by individual project teams.

The above Index will also help the team members to concentrate on the overall project performance rather than on individual project performance indicators. It will also help the project management to distinguish between the controllable and uncontrollable factors. The Index we believe will give a more realistic picture of project performance than the indicators, which are being used at present.