ISG™ imagine your future®

GETTING TO THE (FUNCTION) POINT

Measuring ADM Productivity With and Without Function Points

ISG

INTRODUCTION

Analysis of Application Development and Maintenance/Support (ADM) productivity has traditionally included debate over the role of Function Point-based (FP) measures. Proponents of FP analysis believe that a meaningful assessment of productivity requires comparisons based on the functional size of existing applications being maintained, or of new applications being developed. Opponents argue that the defined functional "size" of an application provides limited insight into the time required to maintain or build an application.

Three general philosophies around the applicability of FP analysis can be defined. First, companies with established FP-based performance measures in place seek to apply FPs to attain "apples-to-apples" comparability to other organizations using FP-based metrics. At the other end of the spectrum, organizations refuse to use FPs to analyze performance. A third philosophy, however, is emerging among organizations that have never used FP-based measures and do not have a Function Point culture established, but are willing to consider incorporating Function Points to enhance visibility into ADM productivity.

This article argues that, while FP-based productivity measures can provide more detailed visibility into ADM performance, they are not essential to improving cost, quality, or productivity. The author (a strong proponent of FP-based metrics) seeks to move beyond the debate over Function Points and address the real goal of improving ADM productivity.

PRODUCTIVITY AND FPS DEFINED

ADM productivity can be broadly defined as a function of the outputs of the services performed, and the resources consumed to generate those outputs.

Function Points are an industry standard used to measure the functional "size" of an application. In performing a Function Point count on an application, standard rules for counting are applied to quantify the functional features of the application. Additional rules are then applied to adjust the FP count based on certain characteristics or adjustment "factors." The end result of this process yields a quantification of the functional size of an application.

FPs are calculated independent of technology. So, although technical environments and toolsets can be vastly different, the functional size of an application is calculated the same way. This results in a common, normalized baseline of size for measuring the services being performed to create/maintain that size.

Proponents of FP-based measurements argue that this normalization of size must be included in a comparative analysis against top-performing organizations. Opponents of FPs contend that mere functional size normalization does not take into account all factors that influence development, support, and maintenance productivity, and therefore do not yield a fair or meaningful comparison.

APPLICATION MAINTENANCE AND SUPPORT

One standard FP-based measure of support/maintenance productivity is the number of FTEs needed annually to support 10,000 Function Points in the production environment. This measure calculates the number of FTE hours needed to support and maintain a given/set size of application functionality. In this case, the resources are the hours applied and the outputs are the work (the support activities, the repairs and technically-oriented enhancements) being performed on the functional "features" of the application.

In this FP-based measure of productivity, the additional time spent performing these duties results in a higher number of calculated FTEs, which in turn results in lower overall organizational productivity. Additional time spent can be attributed to a host of reasons such as resource experience levels, inefficient processes, complexities, project delivery quality, etc. An effective performance improvement analysis not only quantifies the lower productivity against top performers, but also identifies the root cause(s) of productivity gaps. Addressing those root causes then results in immediate and measurable productivity improvement.

Organizations that do not employ Function Point analyses often mistakenly conclude that they cannot compare themselves to top performers that do have that data. In fact, organizations that do not use FPs can still measure and compare their Maintenance and Support productivity to top performers.

Remember that productivity is a function of the outputs generated and the resources consumed in the generation of those outputs. Key data points include the volumes of outputs generated by the team in the performance of those functions. Relevant data points collected for any effective analysis (regardless of whether application FP counts are known) include:

1. The volume of user contacts logged, and the percentage of those contacts resolved by the support and maintenance team.

2. The number of software defects reported, and the percentage of defects fixed and implemented by the team.

3. The number of enhancements requested, and the percentage of those enhancements implemented.

Additional data collected can include the number of hours needed to apply to these services, and the number of FTEs logging those hours.

These ratios of outputs-to-resources-consumed can then be compared to those of top-performing companies with similar-sized (and similarly-organized) teams performing the same services. Differences in performance can then be analyzed and explained, and improvement recommendations formulated.

Through this process, organizations that have not implemented FPs can be compared to top performers – not by the ratio of the number of FTEs per 10,000FP, but rather by the numbers of outputs delivered per the number of hours consumed.

APPLICATION DEVELOPMENT

A similar issue exists for quantifying project-delivery productivity. Specifically, how can an Application Development (AD) organization with no visibility into the number of Function Points delivered compare its productivity to top performers that do have FP data?

This is more difficult than with Maintenance and Support, as the "size" of what is being delivered is fundamental to quantifying the "outputs" for the productivity measure. However, the same approach taken with Maintenance and Support productivity can be applied to identify whether an organization's key characteristics of project delivery are commensurate with higher or lower productivity.

A standard FP-based measure of development productivity is the number of Function Points delivered per person-month. Here, the outputs are Function Points, or functional features of application(s), and the resources consumed are project hours. Function Points delivered may be new and/or changed functionality.

Organizations with superior project-delivery productivity also exhibit better associated delivery characteristics. These associated delivery characteristics are what can be compared to identify whether a project reflects higher or lower productivity in environments without Function Point data.

As with maintenance and support, these characteristics are compared to top performers. For project delivery performance, following are a sample of key performance characteristics frequently used in comparative analyses, regardless of whether FPs are involved:

1. *Average Project Size (in Hours) and Average Project Length (in days):* Correlations can be made between better/worse productivity and the average size/length of the projects.

2. *Project Schedule Adherence and Project Effort Adherence:* Highly productive performers are generally very good at meeting scheduled milestones and budgets.

3. *Average Project Hours per Project Day:* This is a measure of "churning" of project team members assigned to a project. Extremely low numbers reflect lower productivity brought about (typically) by constantly changing priorities.

Again, as with Software Maintenance and Support, the metric to provide actionable recommendations is not at the highest-level FP-based KPI, but at the lower-level characteristics that reveal why productivity is lower than top performers.

CONCLUSION

The use of Function Points in ADM performance improvement analyses certainly enables important insight into productivity and other measures of cost and quality. This additional visibility can help identify root causes of performance gaps and define steps to address those gaps and improve that performance.

However, organizations lacking a Function Pont culture can still gain valuable insights into ADM productivity performance drivers. Not using FP-based KPI comparisons simply means that performance cannot be compared at that level. But the absence of FPs does not preclude comparison at "characteristic" or "component" performance levels.

The debate over the applicability of FPs should not prevent organizations from gaining valuable insights into operational performance and undertaking initiatives to achieve significant improvement.

ABOUT ISG

Information Services Group (ISG) (NASDAQ: III) is a leading global technology research and advisory firm. A trusted business partner to more than 700 clients, including 75 of the top 100 enterprises in the world, ISG is committed to helping corporations, public sector organizations, and service and technology providers achieve operational excellence and faster growth. The firm specializes in digital transformation services, including automation, cloud and data analytics; sourcing advisory; managed governance and risk services; network carrier services; technology strategy and operations design; change management; market intelligence and technology research and analysis. Founded in 2006, and based in Stamford, Conn., ISG employs more than 1,300 professionals operating in more than 20 countries—a global team known for its innovative thinking, market influence, deep industry and technology expertise, and world-class research and analytical capabilities based on the industry's most comprehensive marketplace data. For additional information, visit www.isg-one.com.

Let's connect NOW...

ISG™

imagine your future®

