Booz | Allen | Hamilton

Software Measurement and Analysis Capabilities

Software development organizations must navigate in an uncertain environment and produce a highly complex customized product to meet changing requirements. Despite significant advances in technology, software is primarily a hand-crafted product. The greatest single expense in software development is the labor of the highly skilled professionals who design, write, and test the product. Unfortunately, users, customers, and clients often do not fully understand their own requirements until after they have seen the product. And because the development process often takes months or years, the commercial and technical environment can change significantly from a project's beginning to its end.

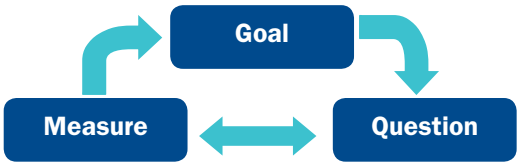
Although assessing a development project's progress at any point is often thought of as an art rather than a science, some organizations seem to produce impressive releases of software technology that continue to change the world and improve life. Others consider huge cost and schedule overruns a normal way of life. Organizations that can see the road ahead and plan for it will succeed, while those who manage reactively will end up in the ditch.

Booz Allen Value Proposition

Booz Allen Hamilton, a global strategy and technology firm, offers software measurement and analysis services that provide clients with the quantitative data, analysis, evaluation processes, and independent perspective necessary to increase chances of success. The methodologies we have developed help organizations objectively evaluate software development programs and projects, adapt to changes, and produce consistently high-quality software within budget and schedule constraints.

Our Goal-Driven Approach

Booz Allen's approach to measurement and analysis produces measures that are actionable and needed. Rather than starting with measures and trying to apply them to business, Booz Allen starts by defining the business and project goals. This leads to questions and decisions that support the goals. Only then do we discuss measures that answer those questions and guide the decisions. This process repeats as information needs increase and change. Booz Allen's software measurement program design and implementation capability supports organizational process improvement and provides development organizations with the information necessary to better manage projects.



Booz Allen can help you:

- Develop measurement plans and measurement constructs for organization or projects
- Implement a goal-question-measure (GQM) framework to align measures with goals and information needs

About Booz Allen Hamilton

Booz Allen Hamilton has been at the forefront of management consulting for businesses and governments for more than 90 years. Providing consulting services in strategy, operations, organization and change, and information technology, Booz Allen is the one firm that helps clients solve their toughest problems, working by their side to help them achieve their missions. Booz Allen is committed to delivering results that endure.

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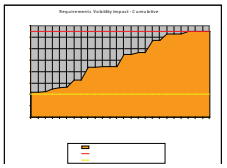
Software Measurement and Analysis Capabilities

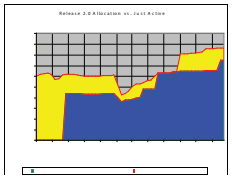
- Design and implement measurement and analysis processes and procedures to support Capability Maturity Model Integrated (CMMI) initiatives
- Provide measurement and analysis support, including data collection, project estimation, analysis reports, and repository maintenance
- Apply Practical Software Measurement (PSM) guidelines to customize the measurement structure and practices to fit organizational or project needs

In addition to using many standard process and product measures, Booz Allen has developed a variety of innovative measurement models, including:

- **Requirements Volatility**—Changes to requirements over the life of a project cause cost and schedule overruns and reduce quality. This measure adjusts appropriately to the stage in the development cycle and does so whether the project uses a waterfall development model, spiral development, or incremental releases.
- **Peer Review and Inspection Quality**—Inspections are the most effective technique for reducing costs, increasing quality, and maintaining stability early in software development. Booz Allen has a model that assesses the quality and manages the cost of this activity.
- **Triangulation**—Booz Allen combines measures to address a single question or goal. This reduces the unintended consequences that using a single measure can cause.
- **Risk Management**—Risks are often discussed in qualitative terms but can be quantified with respect to impact and probability. Booz Allen has a methodology for quantifying, tracking, and controlling risk.
- **Results and Behavior**—Booz Allen understands that although results are critical, measuring results alone can cause unexpected behaviors. We define best and worst practices and measure the project behaviors that demonstrate these practices.

Representative Experience and Expertise





Booz Allen not only provides measurement and analysis consulting services to clients but also leverages these methodologies and techniques in our own software development projects. For example, we applied our Requirements Volatility Impact model retroactively to a software release for a client. Although the client was very happy with the quality of the original release, Booz Allen believed requirements changed excessively during development, driving costs and schedule up. The model indicated volatility was very high.

While developing the successive release, Booz Allen combined this model with root cause and corrective action analysis. This analysis allowed us to anticipate and prevent the causes of spikes in requirement changes. We showed the client this model regularly to allow for requirements management collaboration with Booz Allen. The result was a subsequent release with demonstrably higher quality and lower cost.