



## Glue—Value-Driven Risk-Adjusted Solution Delivery

The key to the power of many of our software quality and system integration offerings can be directly traced to our overall project delivery philosophy. This philosophy, based on literally thousands of projects, is embodied in our proprietary software engineering information model known as Glue.

While this model is independent of any single technology, many of its components have been implemented directly in our [ValidationBench](#) tool. In addition, the Glue model forms a key risk framework for our Project Risk Assessment Calculator (PRAC) tool.

### Value-Driven Risk-Adjusted Solution Delivery

The Glue information model has been designed to achieve a single overriding objective: *Value-driven risk-adjusted solution delivery*.

This objective comprises three important elements:

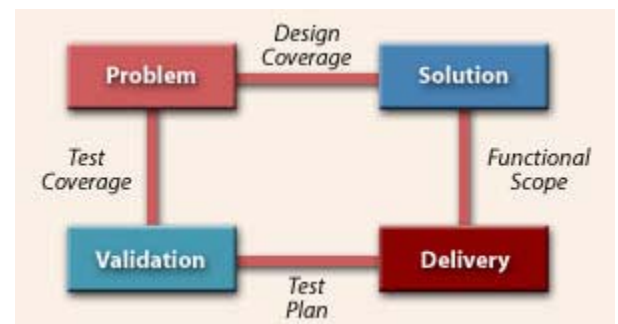
- **Solution delivery**, emphasizes our view that a paramount goal of any technology organization must be to *deliver business solutions*; that is, enabling and enhancing a company's ability to grow and compete in its marketplace through the acquisition of complete, fully integrated, and organizationally unified business capabilities, not just building and installing software
- **Value-driven**, emphasizes the vital role of the customer as the sole arbiter of value and quality, and that this business value perspective must be at the center of all priority, sequencing, and implementation decisions
- **Risk-adjusted**, emphasizes a key contribution of the technology organization should be to free its customers to take the right risks, while at the same time indemnifying them against unnecessary exposure and uncertainty

### The Four Primary Artifacts

The Glue project delivery philosophy achieves this objective by focusing on the four primary artifacts of any technology project. These four artifacts must be tightly connected and rigorously managed for a successful implementation.

In our view, all meaningful information surrounding any technology effort, regardless of how this information may actually be produced, can be seen as one of these four artifacts:

- **Problem**, all business, functional, information, process, performance, load, operating, privacy, usability, maintainability requirements and related constraints that a given solution must fulfill to be considered successful—a clear statement of the opportunity or problem to be addressed
- **Solution**, the collection of analysis, design, architecture, process, and software that fully defines the organization's response to the defined problem
- **Delivery**, the organization of the solution into small functional chunks of value (called packages) suitable for continuous integration and incremental delivery; each package represents a well-defined unit of customer defined value or a *feature set*
- **Validation**, the array of inspection plans together with unit, integration, and acceptance test plans that are focused on ensuring that the solution packages, in fact, fully address the problem



Further, we have found that the organization of project materials into these four simple artifacts and the rigorous management of the connections among them greatly enhance the organization's ability to rapidly deliver business value, at low risk, to its customers. In particular, the following connections are important:

- **Design Coverage**, connects elements of the problem with the corresponding elements of the solution to ensure that the solution is neither under or over designed, as well as significantly simplifying component reuse
- **Functional Scope**, connects chunks of the solution (and, its corresponding requirements) to individual delivery packages so that they can be incrementally implemented and deployed
- **Test Plan**, connects each delivery package with its associated test plans to focus and simplify validation, defect removal, and regression testing
- **Test Coverage**, connects test cases to the requirements they have been designed to validate to minimize customer expectation gaps and production failures

### The Glue Information Model

Glue manages these four project artifacts and the relationships among them (such as the connections discussed above), through the implementation of our proprietary software engineering information model:

The *requirement specification*, *change*, and *impact* objects define the problem artifact. The *construction specification* and *defect* objects comprise the complete solution artifact. The *package* and *iteration* objects define the delivery artifact, and the *validation specification*, *test suite*, *test case*, *test data*, and *failure* objects define the validation artifacts.

Further, the connections among the four primary artifacts are also supported by the information model. For example, the *supporting specification* link implements the design coverage connection, the *functional scope* link implements the connection between the solution and its delivery to customers, the *validation plan* link implements the test plan connection, and the *target requirement* link implements the test coverage connection.

### The Project Repository

As we have seen, delivering technology solutions involves a large number of work products (requirements documents, design materials, test plans, source code, etc.). These work products are often complex and highly inter-related. If the project manager does not establish an organizing structure (e.g., a project repository) for storing, retrieving, and managing these items, it can be administratively so burdensome that it can materially affect the quality, schedule, and cost of the effort. Further, if this type of organizing structure is not put in place early in the project (when it is often not yet apparent how important it will be), it becomes extremely expensive to retrofit such a mechanism downstream.

Moreover, an appropriate project repository can become an asset to the project team by simplifying re-use, tracking and controlling revision and modification levels, and providing a reliable source for all materials that can be used after the solution is operating to dramatically reduce ongoing maintenance and support costs (which costs, typically, can be on the order of four times the original acquisition investment during its first five years of use).

The Glue information model can be used to define such a complete project repository that can be deployed for any technology effort.

**For more information, please contact us at (630) 365-1606, or visit [www.itestqp.com](http://www.itestqp.com).**

