

TITLE: "RUPTURED STALKTHRUS - WHY REVIEWS ARE IMPORTANT "

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Since 1971: *"Software for the finest computer - the Mind"*

*"Quality must be built into the product during design,
not inspected in afterwards."*

- Bryce's Law

INTRODUCTION

Back in the late 1970's and early 1980's when the Structured Programming movement was in full swing, there was an emphasis on "Structured Walkthrus" whereby a programmer and a team of his peers would review the source code for maintainability and design correctness. Unfortunately, the code was often cluttered and complicated making such reviews cumbersome and led to the phrase "Ruptured Stalkthrus." Today, code reviews are rarely performed, but this leads me to discuss the importance of reviews in general.

Conducting reviews is an essential part of any effective systems development project. Some application developers believe it has an adverse effect on project delivery schedules and, as such, avoids reviews at all costs. This, of course, is absurd. The development of any system or major software project involves many people and, as such, communications and consensus are vital for tackling complex projects. For additional information, see:

No. 52 - *"Understanding the Vicious Circle of Complexity"* - Nov 28, 2005
<http://www.phmainstreet.com/mba/ss051128.pdf>

In addition to communications, reviews promote cooperation and trust between the parties involved, but more importantly they are intended to assure developers are building the right product for the right business problem. "Design correctness" is the primary purpose of any review in application development which, of course, is an important part of an overall quality assurance program. Reviews are not intended to criticize the developers but rather to make some important business decisions during a project, such as: accept the design as proposed,

modify or correct the design before proceeding, or to cease development.

Periodically stopping and reviewing designs benefits both developers and end-users alike (the clients). For the developer, a second set of eyes is invaluable; to illustrate, being imbued in a development project, problems and errors can become transparent to the developer and are sometimes overlooked. By having others review your work, they may have little trouble in spotting such errors or recommending alternatives. In other words, reviews should not be avoided, but rather welcomed by the developer. For the end-users, reviews are necessary to assure their interests are being represented, that the system and software satisfies their needs. Frequently, end-users abdicate attendance at design reviews because they are often fraught with technical gobbledegook that alienates the user. However, if project reviews are presented in a standard and consistent manner, avoiding technical jargon, users are more apt to attend. Further, having a standard evaluation/acceptance criteria (such as in the form of review checklists) can greatly facilitate the review process for both developers and end-users. Bottom-line, reviews are intended for people to reach consensus as to the proper direction for a development project.

CONDUCTING THE REVIEW MEETING

"Free-for-all" reviews are pointless and tends to alienate all involved. Instead, reviews should be structured and well organized thereby maximizing the use of time for all involved. Here are some tips for conducting an effective review meeting:

- Meeting should be conducted by the Project Manager. Participants should include assigned developers, end-users, quality assurance personnel, and perhaps development management (depending on the type of review).
- Schedule the meeting for a time and place convenient to all.
- Have a printed agenda for the meeting describing its purpose, and highlighting the points to be discussed. Start the meeting on time and get to the point, do not ramble.
- Provide the design documents (deliverables) to the participants prior to the meeting. Allow them ample time to study it and formulate questions prior to the

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review. Ideally, deliverables should be well organized and packaged, complete with a table of contents and a review checklist. Depending on the level of detail involved, technical jargon should be avoided and presented in a form that all will understand.

- If the deliverable is accepted, have all participants sign a master copy of it thereby denoting they have reviewed and approved it. I cannot stress the need for signatures strong enough; they represent commitments.

WHEN SHOULD REVIEW MEETINGS BE CONDUCTED?

At the beginning of a project or at the end? Neither. Review meetings should be held throughout the life of the project at specific stages of development. By doing so we accomplish two things: we are inspecting quality into the product during design (not checking for it afterwards), and we can confirm we are building the right product according to specifications thereby assuring customer satisfaction.

Let me give you an example of incremental reviews using our "PRIDE"-Information Systems Engineering Methodology (ISEM).
<http://www.phmainstreet.com/mba/pride/is.htm>

Please keep in mind "PRIDE"-ISEM considers a system to be a product that can be engineered and manufactured like any other product. Consequently, it has different levels of abstraction in the system hierarchy and, as such, has different deliverables to specify each level (this is sometimes referred to as "stepwise refinement"). The hierarchy of the "PRIDE" System Structure consists of:

Level I:	System
Level II:	Sub-Systems (aka Business Processes)
Level III:	Procedures (both manual and computer)
Level IV:	Steps for manual procedures and Programs for computer procedures.

The early phases of "PRIDE"-ISEM are used to design the system top-down and the latter phases are used to test and install the system bottom-up. Here is how it works...

PHASE 1 - SYSTEM STUDY & EVALUATION

Deliverable - "System Study & Evaluation Report" (Feasibility Study).

What is specified - Information Requirements and preliminary design of the system (rough), from which project estimates and schedules can be formulated and a cost/benefit analysis developed.

Who performs the work - primarily Systems Engineers.

Who participates in the review - Project Management, Systems Engineers, Software Engineers, Quality Assurance, User Management, and Development Management.

What is reviewed - Primarily the Information Requirements for clarity and correctness, the proposed System Solution (its viability), and the project plan (costs and schedules).

PHASE 2 - SYSTEM DESIGN

Deliverable - "System Design Manual."

What is specified - Sub-Systems (aka Business Processes), Inputs, Outputs, and the application's logical data base (representing the interface between sub-systems).

Who performs the work - Systems Engineers.

Who participates in the review - Project Management, Systems Engineers, Quality Assurance, User Management, and Development Management.

What is reviewed - The viability of the sub-systems, illustrative examples of inputs and outputs, and a review of the updated project plan.

PHASE 3 - SUB-SYSTEM DESIGN

Deliverable - "Sub-System Design Manual."

What is specified - Procedures (the procedural workflow of the business process), Inputs and Outputs are finalized, primary and temporary physical files, and a review of the updated project plan (as it pertains to the individual sub-system).

Who performs the work - Systems Engineers.

Who participates in the review - Project Management, Systems Engineers, Software Engineers, Quality Assurance, Operation Management, and User Management.

What is reviewed - The viability of the procedures and the "look and feel" of the inputs and outputs.

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PHASE 4-I - ADMINISTRATIVE PROCEDURE DESIGN

Deliverable - "Administrative Procedures Manual" (aka User Manual).

What is specified - Operational Steps (tasks) of the Administrative (Manual) Procedures.

Who performs the work - Systems Engineers.

Who participates in the review - Project Management, Systems Engineers, Quality Assurance, User Management.

What is reviewed - The viability of the steps in the procedures.

PHASE 4-II - SOFTWARE ENGINEERING

Deliverable - "Computer Run Book."

What is specified - Programs in the Computer Procedure.

Who performs the work - Software Engineers.

Who participates in the review - Project Management, System Engineers, Software Engineers, Quality Assurance, Operations Management.

What is reviewed - The viability of the program(s) design and the completeness of program specifications.

PHASE 5 - SOFTWARE MANUFACTURING

Deliverable - Object/Source Code & Test Results.

Who performs the work - Software Engineering

Who participates in the review - Project Management, Software Engineers, and Quality Assurance.

What is reviewed - Test results (for a single program). However, if source code is produced using traditional manual coding techniques, code reviews are appropriate (this is normally not necessary for code produced using devices such as a program generator).

PHASE 6 - SOFTWARE TESTING

Deliverable - Test Results.

Who performs the work - Software Engineers.

Who participates in the review - Project Management, Software Engineers, Systems Engineers, Quality Assurance, and Operations Management.

What is reviewed - Test results (of all programs in the computer procedure).

PHASE 7 - SUB-SYSTEM TESTING

Deliverable - Test Results.

Who performs the work - System Engineers.

Who participates in the review - Project Management, Systems Engineers, Software Engineers, Quality Assurance, User Management, and Operations Management.

What is reviewed - Test results (of all procedures in the sub-system).

PHASE 8 - SYSTEM OPERATION

Deliverable - Test Results.

Who performs the work - System Engineers.

Who participates in the review - Project Management, Systems Engineers, Software Engineers, Quality Assurance, User Management, and Operations Management.

What is reviewed - Test results (of all sub-systems in the system).

PHASE 9 - ISEM EVALUATION

Deliverable - System Audit.

Who performs the work - Project Management and Systems Engineers.

Who participates in the review - Project Management, Systems Engineers, Quality Assurance, User Management, and Development Management.

What is reviewed - How well the system satisfies requirements and a project evaluation (estimated vs. actual costs and schedules).

CONCLUSION

Of course we have similar review points in our "PRIDE"-Enterprise Engineering Methodology (EEM) and "PRIDE"-Data Base Engineering Methodology (DBEM). However,

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this bulletin is primarily concerned with the systems development process.

Because of the complexity of systems, certain tools should be used to assist in the review process. For example, Review Checklists should be devised for evaluating deliverables. Such checklists represent the standard acceptance criteria of each deliverable. Another useful tool is an IRM Repository (aka Dictionary) for cataloging and controlling information resources. Such tools are invaluable for substantiating completeness of designs. Down in the programming phases, certain software testing/debugging aids are useful for diagnosing problems in a program. The use of such tools should be encouraged to promote confidence in the integrity of designs.

As mentioned earlier, systems can be complex in terms of the number of information resources involved and the people participating in the project. Consequently, reviews are essential to assure that the product being produced conforms to its specifications; that problems can be spotted and corrected early on as opposed to afterwards. Review at the beginning and end of a project are nice, but incremental reviews are necessary for quality assurance and customer satisfaction purposes. In this way, we can avoid "Ruptured Stalkthrus" and deliver a quality product to the customer.

END

About the Author

Tim Bryce is the Managing Director of M. Bryce & Associates (MBA) of Palm Harbor, Florida and has 30 years of experience in the field of Information Resource Management (IRM). He is available for training and consulting on an international basis.

"PRIDE" Special Subject Bulletins can be found at:

<http://www.phmainstreet.com/mba/mbass.htm>

They are also available through the "PRIDE Methodologies for IRM Discussion Group" at:

<http://groups.yahoo.com/group/mbapride/>

You are welcome to join this group if you are so inclined.

The "Management Visions" Internet audio broadcast is available at:

<http://www.phmainstreet.com/mba/mv.htm>

Also, be sure to read Tim's Blog at:

<http://blogs.ittoolbox.com/pm/irm/>

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