



## ***Improving the Requirements-Gathering Process***

“Of all the software process improvements you could undertake, improved requirements development and management practices will likely provide the greatest benefits.”

*Karl E. Wiegers, Software Requirements (Microsoft Press, 1999)*

Just as the outcome of baking a cake is more predictable when you use a recipe, the work of analyzing business processes and developing requirements for information systems that support those business processes needs to be guided by an approach, a recipe, a methodology. Many “recipes,” of course, already exist. There are methodologies for information engineering, object-oriented analysis, use case analysis, event-driven analysis, and so on. Some are in textbooks, others come as part of consulting engagements, and some are even available on the web. So shouldn’t it be possible to find the “right” recipe and just follow it to a successful conclusion? Unfortunately, it’s not that easy.

### ***Why off-the-shelf methodologies don’t work***

To begin, we need to ask a question. What is the fundamental activity a requirements analyst engages in? The answer is *discovery*. Discovery is a blend of knowledge, art and experience, in contrast to a recipe in a cookbook that deals with a well-understood process and a commonly-accepted set of tools (oven, pans, mixers and so forth).

It seems unlikely that the discovery process for requirements will ever be understood to the point where it can become a recipe that applies across the board. This means that, no matter what the form, every off-the-shelf methodology has a severe drawback – it does not (because it cannot) take into account what you are doing in *your* organization and what problems you are trying to solve.

The methodologies that are outlined in those books, notebooks and web sites contain important and useful information. We’ve even developed our own methodology, *LINKProcess*<sup>™</sup>, that encompasses best practices and includes approaches that take advantage of our experience and use of tools. Even so, we’re advocating that each organization needs its *own* methodology. That methodology should be based on the best thinking of the published methodologists (and when you work with DEA we start with *LINKProcess*); there is, after all, no need to reinvent the wheel.

But then you must then marry that thinking with the real. In other words, each organization must take into account the tools you are using, the environment that exists, the kinds of roles and the skills of those who fill the roles, the constraints of time, money, and tools, and the goals you are working toward. Only then will a methodology become real to your organization; and only when it becomes real will it become useful.



## ***Building your own methodology***

How, then, do you build your own methodology? In arguing that each organization needs its own methodology, we mean that each organization needs to participate in building that methodology. The role of a methodologist is crucial – you must have someone who has done it before to make suggestions and guide the process. But the key to success is to have the organization share in the process and be actively involved in generating the results. Unless the organization learns to see the problems and think through the alternatives, they will usually not be willing or able to implement the solution. And that's the whole point, after all – to develop a process that can be enthusiastically accepted and put to use.

***Step One: Initiation.*** The first step is for someone in the organization to recognize the need for change. Perhaps there's been a reorganization of responsibilities; perhaps the last project did not succeed as well as had been hoped; perhaps there is a desire for new tools. Whatever the precipitating event, the organization has made a decision that the process for understanding the requirements for a new system must be improved and documented, so that it can be repeated, measured, and taught.

By the time a company such as ours has been contacted for methodology help, some decisions may already have been made. Some examples:

- The requesting organization has a methodology in place. They like it, but want to add automated tool support and need help integrating the tool into the process.
- The organization has not used a documented methodology. They want advice on which one to choose.
- The organization has used a methodology, but now want to switch to a more up-to-date approach.
- The organization has purchased an automated tool, but realize they do not know which of its features are appropriate for what they want to do.

***Step Two: Assessment.*** With the basic goal of the organization in mind, we can begin to assess where things currently stand. We need to work with the organization to understand how the process is currently carried out, since we want to build on what you already know (obviously, you do *something*, even if it's informal and varies widely from project to project). We need to understand the experience level of those who currently do the work. We need to understand the roles that are played, as well as those roles that aren't currently being performed and should be added. We need to participate in the formation of the team that will work with us for the next several weeks. We need to evaluate the types of projects the organization does in order to recommend the base methodology that's the best fit.

Another important assessment task is to work with the organization to select a pilot project. We use this project as the base for the rest of what we do. It allows us to provide education on new tasks and, if appropriate, new tools, and then to work with the team to apply those skills to a real



# White Papers

---

Doreen Evans Associates, Inc.

problem. And it allows time for review and discussion of what worked and what didn't – again using real work as the basis for comments and decisions.

The ideal pilot project includes:

- Users who know what they want and are available to join the team
- No more than ten business events
- A technical solution that's well understood

***Step Three: Planning and Education.*** Typically, this is a two-week activity. We as consultants need time to be educated on the area that the pilot project will address. We need to develop a schedule for the next six to eight weeks and to establish the working environment for the team. This includes ensuring the right equipment is available, that there is a version control/backup strategy, and that we have naming standards and definition conventions in place.

On the other side, the project team will need a basic education on the methods and techniques of the selected methodology. Everyone needs to recognize that the methodology will change as we work together through the pilot project, but education will help everyone start with a good foundation for moving forward.

***Step Four: Developing the Meta Model.*** We believe that a methodology has two main purposes. The first is to provide guidelines for accomplishing work. The second is to outline the artifacts (definitions and models) that must be understood (and therefore captured) and to structure how those artifacts should be organized into deliverables.

This is the purpose of a meta model. It provides a structure for classifying and organizing what is significant. It also describes the relationships of those representations to one another. The utility of such a classification scheme is to enable focused concentration on selected aspects of an object without losing a sense of the whole perspective.

For example, in requirements analysis you may want to know about a functional area, the specific functions each group contains, and then the tasks that carry out that function as well as the business rules that govern how tasks work.

Each of these are artifacts that will become part of the meta model for the methodology. Taking the time to develop the meta model structure accomplishes several goals:

- It forces the team to think quite concretely about what they do and what they need to understand.
- It allows you to build rigor into the methodology. Without a meta model, the interpretation of “gather information on a function” could be ambiguous, to say the least.
- It guides the customizations to the tools you are using so that they support exactly the approach and the structure you need – not more and not less.



# White Papers

---

Doreen Evans Associates, Inc.

***Step Five: Pilot Project and Methodology Documentation.*** Pilot project work should last about four weeks. If you have chosen the project well, and scoped the deliverables properly, this should be adequate time. You will have to handle issues of expectations, but remember that the most important deliverable from the pilot project is documentation of a methodology for future projects.

Typically, the mentor starts each two-or-three day chunk of time by providing an introduction to the task at hand and describing how it will be done. Most important, the mentor describes the deliverable that should be produced so the team knows its goal. The team can discuss any additions or changes to the basic approach, but then actually does the work required by the project. At the conclusion of the chunk, time should be made available for review and comments. The experience the team has had will change ideas about what *should* happen into knowledge of what *does* happen.

The knowledge earned by performing pilot project work and by having the opportunity to challenge or validate the standard methodology guidelines is what the Army terms “ground truth,” that is, on the ground, rather than from the heights of theory.

During the pilot project, one person from the consulting company will be functioning at all times as a methodology analyst. This person listens carefully, both to positive and negative views, and takes notes on successes and failures. The methodology is constantly updated to incorporate changes.

***Step Six: Review and Revision.*** At the completion of the pilot project, the team should take a few days for review and debriefing. What worked well? What should be discarded? What was not clear? Was the order of tasks the best it could have been? Any lessons learned need to be documented and incorporated into the written methodology.

The methodology analyst then needs time to complete the methodology documentation, present it for review and make final changes.

***Step Seven: Spreading the Word.*** Once your methodology has been developed and documented how can you best use it? Even those who have participated in the pilot project are not likely to remember everything. And those who did not have a chance to participate need to have guidelines available.

We have found that online access, complete with examples, hints, and an easy-to-use display, works well. It is far less intimidating than a book or a set of notebooks. Even better, users can access what they want directly, rather than thumbing through pages of text. Investing in the extra time to put a methodology on line can pay dividends in ease of accessibility and ease of use.

## ***What are the benefits?***

We have provided, developed, and tailored requirements-gathering methodologies for organizations such as Gordon Food Service, GTE (now Verizon), Nationwide Insurance, and the

31 St. James Avenue • Suite 210 • Boston, MA 02116 • (617) 482-4444 • [www.doreenevans.com](http://www.doreenevans.com)



# White Papers

---

Doreen Evans Associates, Inc.

Colorado Department of Health and Human Services. For each of these organizations, just going through the process of developing the requirements-gathering methodology uncovered many undocumented (and sometimes conflicting) assumptions, and offered the opportunity to thoroughly explore options for improvement. When the methodology was 'complete,' those who participated had a solid basis for going forward, for bringing new staff quickly up to speed, and for continuing to improve and refine their approach.

## **About Doreen Evans Associates**

Doreen Evans Associates (DEA) is a professional services firm that focuses on business process improvement. We can help you change a process, build an enterprise architecture, or define requirements for your systems and technologies. Founded in 1992 as a woman-owned, privately-held small business, our mission is to ensure that business need drives solutions.