

PANEL**Beyond Systems Development
Methodologies: Time To
Leave the Lamppost?***Participants*

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1. INTRODUCTION

The importance of successful systems development persists as an issue of central significance and concern in the IS field, especially in light of the well-documented problems associated with system development which have given rise to what has been termed the “software crisis.” However, many methodologies in use today are derived from practices and concepts relevant to a very different organizational environment. There is a need to reconsider their role in view of changes in organizational forms and work practices and the increasingly-complex applications that need to be developed to suit the faster “metabolism” of today’s complex organizational environment. Given the significant “push” factor that this environment represents, there is an urgent need to

leverage new developments, both technological and in organizational work practices, which enable new development approaches more appropriate to this organizational climate.

This climate requires that organizations act more effectively in shorter time frames. There is a need for more rapid systems delivery than that which is currently being achieved with the monolithic development approaches inherent in traditional system development methodologies (SDMs). In fact, the latter impose a considerable degree of inertia on the development process. Thus, the current development environment is much different than the one faced by developers in the past and development practices must change accordingly. Also, given the strong arguments in favor of informing the workplace and empowering employees, the expectation implicit in many methodologies, that developers will plod robotically through standardized checklists, is not valid.

However, many researchers and practitioners continue to see the solution to the software crisis in terms of increased control and the more widespread adoption of methodologies. Indeed, some significant arguments and pressures support the use of such methodologies. However, the problems associated with the use of methodologies have not, perhaps, received adequate attention in the literature. Thus, the assumption that increased adoption of methodologies would help address the problems inherent in systems development is by no means proven. In fact, it is possible that methodologies are best used as suggested frameworks, or guidelines, rather than as dogma, and that one methodology is not sufficient for all development situations.

We use a lamppost metaphor here to illustrate the central problems, both in SDM research and in practice, with the traditional view which advocates the use of methodologies. Following this we argue for the need to leave the lamppost and move to a new paradigm and modes of development which would better complement the new organizational forms and leverage the technological facilitators that now exist.

2. SDM RESEARCH: A CASE OF LOOKING UNDER THE LAMPOST?

Given the inconclusive nature of the vast body of research that has focused on evaluating and comparing system development methodologies, an analogy could be drawn with that of the drunk losing his watch in the street and moving to look for it under the light of a lamppost because the light is best there, even though it had been lost somewhere else. Likewise, it is perhaps easier to conduct research on existing methodologies as the light is best there, rather than to investigate the real complexity of systems development, since the latter requires consideration of a host of organizational and political issues which are much more difficult to illuminate.

3. SDM PRACTICE: A CASE OF LEANING AGAINST THE LAMPOST?

In relation to system development practice, the use of methodologies may be a case of leaning against the lamppost for support rather than for illumination; that is to say, while methodologies may contribute little to either the process or product of systems development, they continue to

be used in organizations, principally as a “comfort factor” to reassure all participants that “proper” practices are being followed in the face of the stressful complexity associated with system development. Alternately, they are being used to legitimate the development process, perhaps to win development contracts with government agencies, or to help in the quest for ISO-certification. In this role, methodologies may be more a placebo than a panacea, and there is a danger that developers, particularly inexperienced ones, may fall victim to goal displacement, that is, blindly and slavishly following the methodology at the expense of actual systems development. In this mode, the vital insight, sensitivity and flexibility of the developer may be replaced by automatic, programmed behavior.

4. THE FUTURE: BEYOND METHODOLOGIES

Research is therefore needed which would investigate the true nature of the current systems development environment in real organizational situations and on real development projects. Practitioners have in many cases assimilated good practices and techniques and may be rejecting methodologies for pragmatic reasons rather than due to ignorance as has been suggested. The “renaissance” developer is using technology innovatively to overcome some of the problems inherent in system development. Specifically, developers are leveraging electronic mail and Groupware databases to help structure and share development knowledge. These technological advances are also being used to facilitate the rapid creation and disbandment of development teams. These teams are remarkably fluid in the manner in which different development personnel assume principal roles at different stages according to their expertise. Also, there is a need to build learning into the development process rather than tagging it on at the end as part of a post-implementation audit phase. These initiatives contribute to the acceleration of the development process, which is necessary to suit the needs of the systems development environment currently faced in organizations.

5. PANEL DISCUSSION FORMAT

The panel chair will frame the issues to be discussed with a short introduction. This will be followed by a five minute presentation by each panelist. Each panelist will consider explicitly the role of methodologies in the context of current organizational trends.

Richard Baskerville will consider the concept of “method” as a synonym for “exemplar.” To a large degree, the method concept is simply the lens through which many systems development experts view their subject. They seek criteria for classifying activities and products and then work to improve the various things discovered in their abstract categories. These experts have created a veritable panoply of methods that are suggested to systems practitioners. Most experienced system developers recognize that these methods are indeed a set of idealized activities and products that could proceed from a problem setting that exactly matches the expert’s notions. These experienced developers adapt some, skip some, and invent some of their activities and products each time a system is developed. From this perspective, a method is a singular example of how a system might be developed. A method is a case study. It has limited generalizability. Experts and naive students may fail to realize that a method cannot be applied in a literal sense. Attempts to apply a method in an exact sense can be very destructive. Since methods cannot be

applied in a literal sense, the organization and its actors must “learn” how to develop each system in an ideographic sense.

Guy Fitzgerald will discuss systems development in the context of outsourcing. Some organizations are outsourcing some or all of their IT, including systems development activities. This is in some cases due to poor experiences of internal systems development, including an inability to develop systems quickly enough to respond to organizational needs. There is a need to consider the ways in which outsourcing affects the development process and what are the organizational implications. For example, outsourcing focuses extra attention on the contractual issues of systems development, on the implementation stage including successfully bringing the development back in house, and the relationship with users. There is also the necessity of dealing with vendors, contracts, and negotiations. These are all skills in which IS practitioners have not historically excelled.

Nancy Russo will argue that existing methodologies are unable to support the needs of the current development environment. Although changes in technologies, economies, organizational structures, and competitive environments are causing fundamental changes in the both the types of information systems that are developed and the process by which they are developed, there is little evidence to indicate that methodologies are keeping pace with these changes. Current research indicates that a large percentage of organizations continue to use traditional structured, linear methodologies. However, these same organizations report that adherence to the methodology is lax. The degree of adherence to the methodology typically varies from project to project. Decisions to use, modify, or ignore the methodology standard often are made on an ad hoc basis. Few organizations have formal guidelines in place to guide developers in their decisions regarding methodology use. A new paradigm for methodology research and development is needed in order to understand the complexities of the development process and to design methodologies and tools that are relevant in the current environment.

After the panelists have presented, the audience will be invited to ask questions and join in the discussion. To stimulate this discussion, a series of key issues will be posed:

- What is the profile of the development environment (e.g., outsourcing, in-house development, integration of packages) currently faced in organizations?
- What role, if any, do methodologies play given the various modes of development that may apply in different development environments?
- What are the broad factors which need to be leveraged if development approaches are to meet current organizational demands?

This discussion will last for about thirty minutes. In the final ten minutes, the chair will briefly summarize the main issues raised during the discussion and ask the panelists for a final reaction to these issues.