# Chapter 2.1
# Development Methodologies and Users

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## INTRODUCTION

There are various development methodologies that are used in developing ISs, some more conventional than others. On the *conventional* side, there are two major approaches to systems development methodologies that are used to develop IS applications: the traditional systems development methodology and the *object-oriented (OO) development approach*. The *proponents of HCI and interaction design* propose life cycle models with a stronger user focus than that employed in the conventional approaches. Before the researcher looks at these approaches, he or she needs to ponder about the method of comparing and assessing the various methodologies. There are always inherent problems in comparing various development methodologies (The Object Agency, 1993).

It is, in many instances, difficult to repeat the results of a methodology comparison with any accuracy. Since few (if any) of the comparisons cite page references indicating where a particular methodology comparison item (e.g., a term, concept, or example) can be found in the methodology under review, it is difficult, if not impossible, to verify the accuracy of these methodology comparisons. The researchers did not compare the methodologies step-by-step, but rather in terms of whether and when they address the human element. Researchers have to acknowledge that methodologies are always in a state of flux. In theory, one thing happens, and in practice the methodologies are modified to suit individual business needs.

## BACKGROUND

### Development Methodologies

This section gives an overview of the three primary groups of development methodologies and

*Figure 1. Contemporary approach to business*
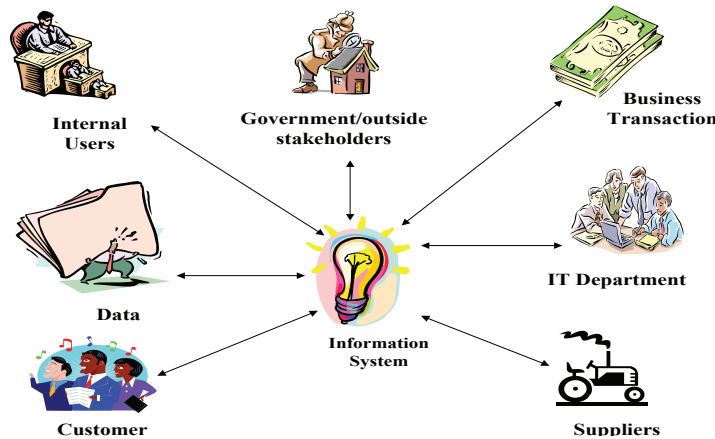


the major phases/processes involved. The aim of all these methodologies is to design effective and efficient ISs. But how effective are they when the wider environment is considered? A more contemporary approach is that the information system is open to the world and all stakeholders can interact with it (see Figure 1).

## Traditional Systems Development Approaches

Under the traditional development approaches, there are various methodologies. All of these approaches have the following phases in common: *Planning* (why build the system?): Identifying business value, analysing feasibility, developing a work plan, staffing the project, and controlling and directing the project; *Analysis* (who, what, when, where will the system be?): Analysis, information gathering, process modelling and data modelling; *Design* (how will the system work?): Physical design, architecture design, interface design, database and file design and program design; *Implementation* (system delivery): Construction and installation of system. We will look at the Dennis and Wixom Approach (2000).

## OO Methodologies

Although diverse in approach, most object-oriented development methodologies follow a defined system development life cycle, and the various phases are intrinsically equivalent for all the approaches, typically proceeding as follows (Schach, 2002): requirements phase; OO analysis phase (determining what the product is to do) and extracting the objects; OO (detailed) design phase; OO programming phase (implementing in appropriate OO programming language); integration phase; maintenance phase; and finally retirement. OO stages are not really very different from the traditional system development approaches mentioned previously.

The OO development approach in general lends itself to the development of more effective user interfaces because of the iterative design process, although this process does not seem to be effectively managed and guidelines for doing so are often absent. The authors analyzed three OO methodologies: The Rumbaugh, Blaha, Premerlani, Eddy, and Lorensen (1991), Coad and Yourdan (1991), and IBM (1999) approaches and their relationship to the aspects illustrated in Figure 1.

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