

Chapter 2.1

Development Methodologies and Users

Shawren Singh

University of South Africa, South Africa

Paula Kotzé

University of South Africa, South Africa

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

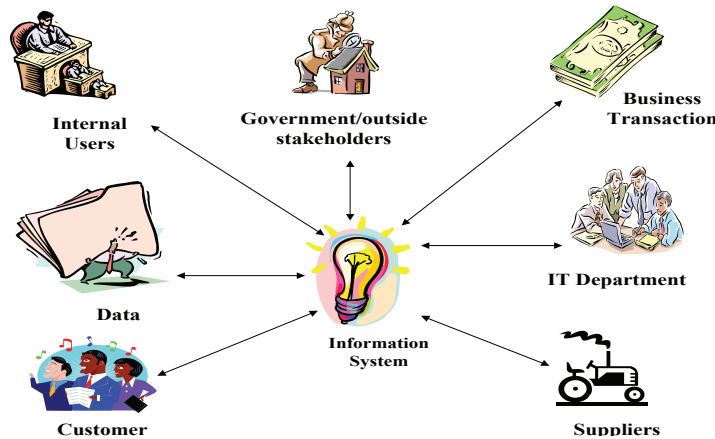
cite page references indicating where a particular methodology comparison item (e.g., a term, concept, or example) can be found in the methodology under review, it is difficult, if not impossible, to verify the accuracy of these methodology comparisons. The researchers did not compare the methodologies 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.

5 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/development-methodologies-users/18187

Related Content

An Empirical Study on the Influence of Mobile Games and Mobile Devices for Contemporary Students' Education and Learning Behavior

Yujia Lin and Yuzhi Liu (2022). *Journal of Organizational and End User Computing* (pp. 1-25).

www.irma-international.org/article/an-empirical-study-on-the-influence-of-mobile-games-and-mobile-devices-for-contemporary-students-education-and-learning-behavior/315620

Capturing and Comprehending the Behavioral/Dynamical Interactions within an ERP Implementation

James R. Burns, Don G. Jung and James J. Hoffman (2009). *Journal of Organizational and End User Computing* (pp. 67-89).

www.irma-international.org/article/capturing-comprehending-behavioral-dynamical-interactions/3858

End User Types: An Instrument to Classify Users Based on the User Cube

Chittibabu Govindarajulu and Bay Arinze (2010). *Computational Advancements in End-User Technologies: Emerging Models and Frameworks* (pp. 142-158).

www.irma-international.org/chapter/end-user-types/38090

Mobile Accessibility in Touchscreen Devices: Implications from a Pilot Study with Blind Users on iOS Applications in iPhone and iPad

Volkan Çalkan, Özgürol Öztürk and Kerem Rzvanolu (2014). *Research and Design Innovations for Mobile User Experience* (pp. 182-202).

www.irma-international.org/chapter/mobile-accessibility-in-touchscreen-devices/80370

Mobile Payment and Mobile Application (App) Behavior for Online Recommendations

Shu-Hsien Liao and Chu-Hung Ho (2021). *Journal of Organizational and End User Computing* (pp. 1-26).

www.irma-international.org/article/mobile-payment-and-mobile-application-app-behavior-for-online-recommendations/276514