

Chapter VII

Systems Analysis and Design in Polish Universities Curricula: Structured or Object-Oriented

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ABSTRACT

Nowadays, there are two main information systems modeling methods: structured and object-oriented. The structured methods have been widely used since the 1970s, whereas recently the object-oriented methods have attracted more attention. This chapter analyses the methods that are taught on the courses of information systems analysis and design. The curricula of information systems and computer science studies in Polish higher education institutions are compared to the Association for Computing Machinery curricula recommendations. In both cases none of the methods is prevailing. Also, the program of introducing, at the Warsaw School of Economics, Poland, all management and business administration students to the basics of systems analysis and design is presented. Thus, students majoring in information systems learn both modeling methods, whereas only structured methods are introduced to all management students.

INTRODUCTION

In modern systems analysis and design two general group of methods can be distinguished: structured and object-oriented. Structured methods were first introduced in nineteen seventies (DeMarco, 1978; Gene & Sarson, 1979). Since then, they

have dominated systems analysis and design for decades, being a subject of only gradual changes including the introduction of event-driven approach and the increased importance of logical models (McMenamin and Palmer, 1984; Yourdon, 1989). Object oriented methods were introduced in the late 80s and early 90s (Coad & Yourdon,

1990; Rumbaugh, Blaha, Premerlani, Eddy, & Lorensen, 1991). Since then, they have gained more attention in research and practice than structured methods.

There is not clear answer to which methods are better, whether their usefulness depends on the area of application, or possibly it's just a case of popularity often accompanying new ideas and technologies, what particularly can be observed in the rapidly changing world of computer science and information systems (e.g. Rickman, 2000; Rob, 2004; Ward, 1989; Weisert, 2006). The purpose of this article is not to answer such a general question but to study which method is taught at business schools and economic universities with a special concentration on Polish higher education institutions.

SYSTEMS ANALYSIS AND DESIGN IN CURRICULA

Courses concerning the methods of information systems modeling are the core of the management information systems curriculum. Usually, they include one mandatory course on systems analysis and design or two separate courses: information systems analysis and information systems design. At specific educational institutions, slightly different names might be used. In 1990s, syllabuses of these courses reached usually high level of maturity and stability, resulting from the popularity and widespread acceptance of the structured modeling methods. Their superiority over describing system logic using natural language which is often imprecise and subject to misinterpretation, what was common practice before the introduction of structured methods, was never contested (Matthies, 1977). However, this standstill was disturbed by the dissemination of object oriented modeling methods, preceded by the development of object oriented programming languages, e.g. Ada, Smalltalk, C++ or Java.

Under these circumstances, teaching staff was faced with the dilemma which of these approaches should have been preferred. Naturally, an ideal solution would include comprehensive courses including both methods. However in reality, most of university curricula are tight, and time limits for particular courses are imposed by independent bodies, where proposals to radically increased one course limit would not be given a lot of support. Different curricula solving that dilemma are presented as follows.

TEACHING STANDARDS OF THE POLISH MINISTRY OF SCIENCE AND HIGHER EDUCATION

The teaching standards published in 2002 by the Minister of National Education and Sport (pol. *Minister Edukacji Narodowej i Sportu - MENiS*)¹ for unified first and second degree² Informatics and Econometrics³ studies (MENiS 1st & 2nd I&E) among majors include a course on information systems design. Its suggested syllabus includes: "Elements of theory of information systems. Types of information systems. Design, implementation and maintenance of information systems. Economical and organizational aspects on information systems. Computer laboratory: information system analysis – case study" (Decree of the Minister of National Education and Sport ..., 2002). The syllabus does not mention any particular modeling methods. The syllabus of IS design suggests doing analysis of information system. It can be assumed that the course was intended to include both analysis and design, but it is not clearly stated, whereas phases of implementation and maintenance are mentioned in the syllabus.

The same ministerial document contains a curriculum of the first degree studies in Informatics and Econometrics (MENiS 1st I&E) which, on the contrary, includes two courses: Information systems analysis, and Information systems design.

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