

## **INFORMATION SYSTEM DEVELOPMENT PROCESS (SE-C-06)**

### **AIMS:**

This module covers two important aspects of information systems development (ISD): the selection and evaluation of methodologies and the management of the systems development process.

A variety of ISD paradigms and methodologies will be considered, including 'hard' approaches, both object-oriented and structured, 'soft' and participative approaches, and 'heavyweight' and 'agile' methodologies. A framework will be developed to compare and evaluate methodologies to help determine their applicability to particular development projects and environments. The way in which methodologies are used in practice will be considered.

To successfully deliver a computer-based information system to a customer, whether internal or external, requires proper planning: an analysis of the project, its potential as an investment, the benefits and risk. The manager should be convinced that the project will succeed, is controllable, that resources will be forthcoming and should carry out planning (as detailed as possible) before accepting the brief. The importance of being able to balance the key project requirements of timescale, budget, quality and delivered functionality makes the project manager's role challenging and satisfying.

The success of a project depends on more than just technical issues; commitment from the users, 'ownership' of the system, effective communications, clear identification of benefits and managing the delivery of these – these and other 'softer' issues are often the key factors in determining success.

Various project management approaches will be examined and critically evaluated in the context of the methodological approach (e.g. SSADM - Structured Systems Analysis and Design Methodology, PRINCE - PRojects IN Controlled Environments, agile development). Staffing issues (e.g. recruitment, training, motivation, team-building, leadership style) have major implications for project success and will be placed in the context of ISD.

### **LEARNING OUTCOMES:**

Upon successful completion of this module, the student will be able to:

- discuss the merits and drawbacks of a variety of Information systems development methodologies and the issues involved in their adoption;
- justify the selection of a methodology appropriate for a given information systems development project;
- identify the major planning and staffing issues involved in information systems project management and recommend appropriate techniques and methods for a given project;
- discuss the need for awareness and sensitivity in managing organisational relationships and the importance of effective reporting structures and communication;
- recommend appropriate ways in which the benefits of a system can be evaluated.

### **SYLLABUS CONTENT:**

- Information systems development (ISD): a review of major concepts, lifecycles, definition of a 'methodology', the factors influencing methodology use.
- Frameworks for methodology evaluation.
- Object-oriented methodologies, e.g. (Rational) Unified Process.
- Structured methodologies, e.g. SSADM.
- The development from 'heavyweight' to more 'agile' approaches, e.g. DSDM (Dynamic Systems Development Method), XP (eXtreme Programming).
- 'Soft' methodologies, e.g. soft systems methodology.
- Participative approaches, e.g. DSDM, ETHICS (Effective Technical and Human Implementation of Computer-based Systems).
- Integrated approaches, e.g. Multiview.
- Specialist applications and their methodology requirements, e.g. Web information systems.
- Issues concerning the introduction of and use of methodologies.
- Ethical aspects of ISD.

The emphasis throughout will be on the comparison and evaluation for specific contexts of the methodologies covered.

- The nature of the project, its components, risks, success factors and associated politics.
- Information Systems investment justifications: approaches to investment appraisal.
- Identification and management of benefits; assessing the intangibles.
- Organisation of systems development: reporting structures.
- Project planning and control: work breakdown structures; estimation, budgeting, planning methods (PRINCE 2).
- Project administration: tracking and reviewing; configuration management and change control.
- Staff management, motivation, leadership.
- Quality Management, standards and accreditation.
- Managing software project risks.
- Managing object-oriented projects (reuse): rapid application development (e.g., DSDM, XP)
- Managing large-scale projects: implementation and post-implementation review.

**PREREQUISITES:** None

**RECOMMENDED ASSESMENT:** Coursework and unseen paper