Web Development Issues - II

MODELS AND METHODOLOGY

objective

- Understand the role of ISD(information system development)methodologies and their roles

Information Systems Development - Timescales

- Before computers, Information Technology evolved slowly. Desk calculators were gradually adopted over a period of maybe 200 years. Later, computer-based systems typically evolved over periods of five to seven years. What about the timescales for internet and Web-based systems?
- Typically, a web-based system may have only a few months or even weeks to evolve. We saw in the previous lesson how this high pace of change, coupled with a demand for larger, more complicated systems, has led to a new profession dedicated to building web-based systems, and how this profession can learn much from previous information systems methodologies.
- We will study various methodologies in the rest of the module, and how they may or may not be suitable for web-based systems.

Method or Methodology?

Method or Methodology?

This module talks extensively about methods and methodologies. There are as many definitions of these words as there are methodologies, so before we go any further, we should think a little about these words.

- **Is there a difference between a method and a methodology?**

- According to the dictionary, a method is:

- "a way of doing things, especially a regular, orderly procedure" or "the techniques or arrangement of work for a particular field or subject“.

- In software design, a method is a formalized way in which something is done. It includes the explicit methods, procedures, and techniques used to plan, design, develop and manage an IT-based project.

- Jayaratna (1994) defines methodology as:

- "an explicit way of structuring one's thinking and actions. Methodologies contain model(s) and reflect particular perspectives of 'reality', based on a set of philosophical paradigms. A methodology should tell you 'what' steps to take and 'how' to perform those steps but most importantly the reasons 'why' those steps should be taken, in a particular order."
- A paradigm is a set of beliefs - assumptions, concepts, values and practices - that make up a way of viewing the world, and which are shared by a community.

There is obviously a big overlap in the definitions givenabove. Jayaratna goes on to say that different authors have defined method and methodology differently - and sometimes they directly contradict each other. It would appear that any attempt to define a difference between the terms is futile, and in the remainder of this module, we will use "method" and "methodology" interchangeably. Learners from a technical or computing background often tend to use "method", whereas those from an information systems background are often happier with "methodology", meaning the same thing. You should use whichever you feel most comfortable with.

Why are explicit design methods useful?

- You may have come up with these ideas:
- Methods provide the designer with a set of guidelines to use
- Knowledge about the method is useful as well as knowledge about the actual domain.
- Methods help the designer to produce a system that is structured in a consistent way.
- This helps set common standards, criteria and goals for the deSign team
- It allows transfer of staff or managers between projects.
- Methods provide a framework for consistently recording decisions and reasons.
- This helps with project management and maintenance.
- Methods help with identifying progress milestones.
- Methods help with structuring the design process as well as the design product.
- Methods help reduce the likelihood of errors, and ensure that all factors involved in a problem are properly considered.

LIMITATION OF METHODS AND METHODOLOGY

A method only provides:

- a framework to organize a process recommended forms of representation advice on the criteria to consider.

- Methods are not recipes. None of the guidance can be problem-specific - it is aimed at reasonably wide domains.

- Methods are usually described prescriptively as a sequence of actions, but experts tend to work on several different threads in parallel. Experts learn to adapt a method to their own needs.

- There is also a risk that a method may be based on inappropriate underlying theory - it may look like a perfectly usable system, but if the situation for which it was designed is not relevant to the one in which you want to use it, there is a chance that you will not achieve what you want to achieve.

- Information systems do not occur in a vacuum, and the problem situation may not even be tightly defined. Systems concern people - the designers, the users, all stakeholders - and people do not fit into neat categories; they do not have the same needs, opinions or outlooks

The Two Roles of ISD Methodologies Fitzgerald (1998

- Fitzgerald (1998) '*A tale of two roles: The use of systems development methodologies in practic*e'.

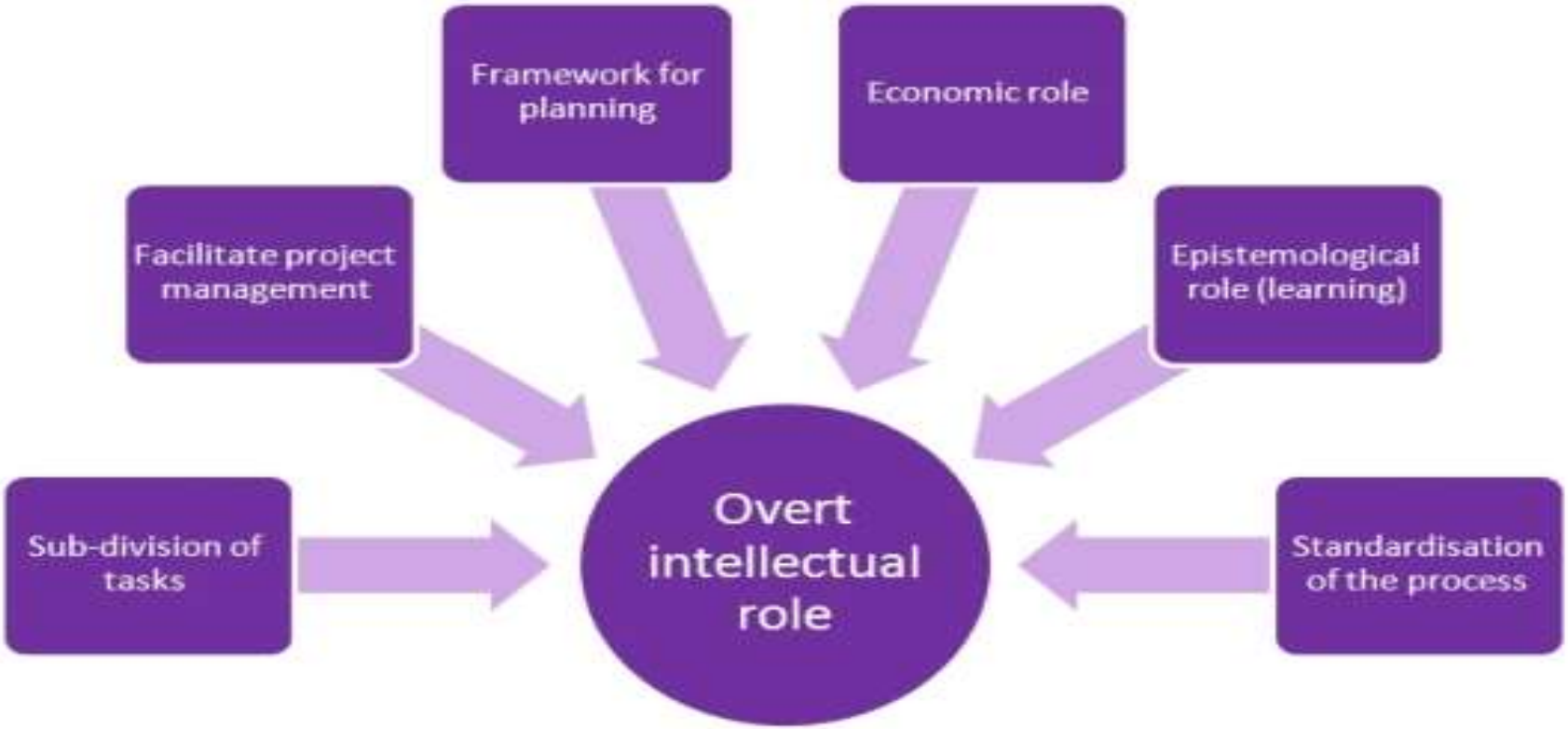
- In this paper, Fitzgerald examines the role of formal methodologies.

Overt(Clear) and Covert(hidden) roles

The paper discusses two different sets of roles for formal methodologies.

- Overt: The traditional view is that methodologies aim to improve both the process of ISD and the end result. These are the reasons that people give for developing and employing formal methodologies.
- These reasons are overt - they are clearly visible and are openly given as reasons

OVERT ROLES OF METHODS



The covert Role of Methodologies

- Covert: Fitzgerald finds, through his research, that methodologies also serve another purpose - a covert, political role - which is hidden under the surface, but is nevertheless very significant

COVERT ROLES OF METHODS

Covert Roles – good or bad?

ASPECT	POSITIVE	NEGATIVE
Professionalise ISD	Developers are better placed to resist unreasonable deadlines and demands Instils pride in work	Developers could follow the methodology in name only
Involvement in strategy formulation	Realistic approach to developments New opportunities identified	Case could be overstated
Confidence /comfort factor	Reassurance that 'proper' practices are being followed Confidence in development decisions Justify investments	May focus too much on methodology and not whether the product is any good
Audit trail	Help protect the individuals and the organisation.	Documentation for its own sake could become meaningless and time-consuming
Legitimacy factor	Increase customer confidence Satisfy government agency requirements Gain ISO certification Useful marketing tool.	Does not in itself guarantee quality
Basis for expert power	Allows a technical career progression route for people who may not wish to take the management route	"Expert" may hold up developments or overstate the case

Conclusion

Many organizations are now adopting formal ISD methodologies, for many of the overt reasons discussed. However, the covert reasons have an important part to play, and should not be ignored. This is an example of the 'organisational iceberg' effect - much of what is really going on is happening below the surface, and the hidden aspects are often the most important.

It is important to be aware of the unstated reasons why people may wish to adopt a formal methodology. Fitzgerald (1998) concludes that covert reasons "do not appear to provide a suitable basis on which to build committed use of methodologies."