Crafting the Virtual Prototype: How Firms Integrate Knowledge and Capabilities Across Organisational Boundaries

Luciana D'Adderio

Research Centre for Social Sciences (RCSS) and the Division of Informatics

2 Buccleuch Place, The University of Edinburgh, EH8 9LW, UK

Luciana@dcs.ed.ac.uk

*

SPRU, Mantell Building, University of Sussex, Falmer, Brighton, BN1 9RF, UK.
l.d-adderio@sussex.ac.uk

Abstract

This paper examines the introduction of Integrated Software Technologies in Product Development focusing on their influence on organisational Experimentation and Prototyping practices. In particular, it explores the role of 'virtual prototyping' techniques, concepts and models in facilitating inter-functional processes co-ordination and multi-disciplinary knowledge integration. It argues that the ability of software to support inter-functional co-operation and the co-ordination of knowledge and activities depends on the organisation's ability to nurture integrating, 'translation' routines which support two-directional translation flows between 'local' (function-based) and 'global' (computer-embedded) knowledge and activity levels. These mechanisms also lie at the heart of dynamic capabilities creation and maintenance.

Keywords: Knowledge and Capabilities Integration, Integrated Software Systems, Product Design and Development, Virtual Prototypes, **Translation Routines**.