

An Indian-Australian research partnership

Project Title:

**Conceptual and Data Modeling during Information Systems
Development: Theory Versus Practice**

Project Number

IMURA0211

Monash Supervisor(s)

Prof. Ron Weber

Monash Primary Contact:

+61-3-9903-2406; Ron.Weber@monash.edu

Email, phone

IITB Supervisor(s)

Prof. N L Sarda

Full names and titles

IITB Primary Contact:

+912225767710, nls@cse.iitb.ac.in

Email, phone

Research Academy Themes:

Highlight which of the Academy's Theme(s) this project will address?

(Feel free to nominate more than one. For more information, see www.iitbmonash.org)

1. **Advanced computational engineering, simulation and manufacture**
2. Infrastructure Engineering
3. Clean Energy
4. Water
5. Nanotechnology
6. Biotechnology and Stem Cell Research

The research problem

Basically, we have a substantial number of normative guidelines relating to how information systems developers should model real-world phenomena (e.g., business processes) during the development of a computer-based information system. We know little about how practicing systems developers actually do conceptual and data modelling work, however. The project would study how developers actually do conceptual modeling work, articulate commonalities and differences among developers, compare their practice with normative guidelines, and seek to understand why they either comply or differ with the guidelines. Ultimately the goal would be to improve both the normative guidelines and practice.

While the focus of prior work has been on business processes, it would be interesting to undertake the work in new areas such as life sciences.

Project aims

To undertake empirical work with conceptual modelling practitioners that will enable a descriptive theory of conceptual modelling practice to be created. To use this theory to enable improvements in conceptual modelling practice to be proposed.

Expected outcomes

Highlight the expected outcomes of the project
A descriptive theory of conceptual modelling practice. Normative recommendations to improve conceptual modelling practice.

Capabilities and Degrees Required

List the ideal set of background and capabilities (8 suggested) required in a student for this project noting that the more specific you make it, the less likely that you will get a candidate that matches the requirements exactly.

Knowledge of database design and implementation.

Knowledge of business processes.

Knowledge of qualitative research methods

Knowledge of quantitative research methods

Good interpersonal skills (to build trust and rapport with research participants)

Ability to work independently to conduct research in an organization