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A Grounded Theory of International Information Systems

Hans Lehmann

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy, The University of Auckland, 2001
Abstract

This research project establishes theoretical foundations for a better understanding of the factors that influence the design, creation and implementation of international information systems (IIS). Three cases of multinational companies - in 9 locations on 3 continents - were investigated to that end, using a grounded theory methodology.

Grounded theory was chosen because the paucity of research into international information systems means that there is an insufficient base for verification-type research approaches. The traditional grounded theory approach was extended to work with cases, whilst fully preserving the principles of joint coding and collection, constant comparison and theoretical sampling.

After every case, the relationships between categories were formally subsumed into theoretical frameworks. As a final step, a substantive theory of the factors influencing IIS was formulated. It explains the specific nature and architecture of international information systems, what affects the way in which they are built and why their users will accept or reject them.

The theory defines a generic architecture, specific for international information systems, consisting of a ‘Central’ part, containing shared systems, and ‘Local’ systems that are unique for each site. Synchronicity, the degree to which systems require same-time use of identical data and information, determines the central and local applications. It further governs the configuration and technical architecture of the IIS.

The ‘Central’/‘Local’ debate can become embroiled in antagonistic politics, acted out in an ever-present ‘Force Field’. Two variables influence the intensity of the Force Field interactions:

- Utility of the system’s functionality lowers the conflict potential all around;
- using the IIS to increase central Control intensifies local management’s resistance against invasion of their ‘turf’.

Acceptance or Rejection of an international information system depends on the net-balance of these opposing forces.

At a more sophisticated level, User/IT Consensus Processes are effective instruments for neutering faction politics and maximising the Utility of the resulting system, substituting ‘Control’ conflict with rational dialogue or amicable persuasion.

Most of the theory can be directly translated into a practical methodology for designing, building and implementing international information systems. Many parts of the theory, however, are still in an ‘approximate’ state and point to several future research projects. They will be concerned with refining concepts, constructs and their relationships as well as further adapting and improving the extended grounded theory methodology used in this study.
Acknowledgements

Many people, in many ways, have helped me to carry out this research and write this thesis.

Brent Gallupe, my supervisor, deserves the first vote of thanks. He encouraged me to begin all this - and has helped me to continue with it and not give in to easy compromise when the project became difficult and momentum and enthusiasm waned. I am very grateful, too, Brent, for the positive, focused and wise advice on the research process and the content of the findings and conclusions. Also, and not least, a sincere ‘thank you’ for inviting me to Queen’s University where I could start writing this thesis in earnest.

This by no means detracts from all the pastoral care and practical help I enjoyed from Justo Diaz, my local supervisor and boss. His allowing me to structure my teaching and administrative work such that I could set aside good chunks of time for the research was an invaluable contribution. I doubt whether I could have finished without it. Thanks you very much, Justo.

Neither of these professional acknowledgements, however, compare with the gratitude that I have for my wife Mary, for whom this is the second of her husband’s theses (not to mention a year of MBA work…). I am very grateful for the patience and stoicism with which she endured my mood swings, put up with ridiculously early mornings, late nights and sat alone through long series of working weekends. Thank you, Mary, for carrying me through all this time.

‘Dad’s thesis’ had become an object of wry resignation for my children, who for the last few years have often lived on the border of serious paternal neglect. I will make it up to you, Peter and Anna, I promise.

In a roundabout way I also owe thanks to my mother, who still remembers our deep disappointment in 1967 when I had ‘lost’ my first Ph.D. in Vienna. My supervisor died and his successors refused to take me on – my research was not in their fields. But I only realised how much it had meant for my mother when I told her in 1995 that I will – finally! - do a Ph.D. and saw her quite overwhelmed with joy. This forged an obligation that greatly helped keeping me going.

The whole research, of course, would not be there save for the 33 men and women in 11 places around the globe who let me into their business and technology, explained it to me and made it easy for me to understand ‘what’s really going on’ in their complex enterprises. I have thanked them personally and individually over the past weeks.

Hans Lehmann
Auckland, February 2001
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