Bricolage, Care and Information

### TECHNOLOGY, WORK AND GLOBALIZATION

The Technology, Work and Globalization series was developed to provide policy makers, workers, managers, academics and students with a deeper understanding of the complex interlinks and influences between technological developments, including information and communication technologies, work organizations and patterns of globalization. The mission of the series is to disseminate rich knowledge based on deep research about relevant issues surrounding the globalization of work that is spawned by technology.

#### Also in the series:

GLOBAL SOURCING OF BUSINESS AND IT SERVICES Leslie P. Willcocks and Mary C. Lacity

ICT AND INNOVATION IN THE PUBLIC SECTOR Francesco Contini and Giovan Francesco Lanzara

EXPLORING VIRTUALITY WITHIN AND BEYOND ORGANIZATIONS Niki Panteli and Mike Chaisson

KNOWLEDGE PROCESSES IN GLOBALLY DISTRIBUTED CONTEXTS Julia Kotlarsky, Ilan Oshri and Paul C. van Fenema

GLOBAL CHALLENGES FOR IDENTITY POLICIES Edgar Whitley and Ian Hosein

E-GOVERNANCE FOR DEVELOPMENT Shirin Madon

OFFSHORE OUTSOURCING OF IT WORK Mary C. Lacity and Joseph W. Rottman

OUTSOURCING GLOBAL SERVICES Ilan Oshri, Julia Kotlarsky and Leslie P. Willcocks

BRICOLAGE, CARE AND INFORMATION Chrisanthi Avgerou, Giovan Francesco Lanzara and Leslie P. Willcocks

# Bricolage, Care and Information

Claudio Ciborra's Legacy in Information Systems Research

Chrisanthi Avgerou, Giovan Francesco Lanzara and Leslie P. Willcocks





Selection and editorial content  $\ensuremath{\mathbb{Q}}$  Chrisanthi Avgerou, Giovan Francesco Lanzara and Leslie Willcocks 2009

Individual chapters © the contributors 2009

Softcover reprint of the hardcover 1st edition 2009 978-0-230-22073-7

All rights reserved. No reproduction, copy or transmission of this publication may be made without written permission.

No portion of this publication may be reproduced, copied or transmitted save with written permission or in accordance with the provisions of the Copyright, Designs and Patents Act 1988, or under the terms of any licence permitting limited copying issued by the Copyright Licensing Agency, Saffron House, 6-10 Kirby Street, London EC1N 8TS.

Any person who does any unauthorized act in relation to this publication may be liable to criminal prosecution and civil claims for damages.

The authors have asserted their rights to be identified as the authors of this work in accordance with the Copyright, Designs and Patents Act 1988.

First published 2009 by PALGRAVE MACMILLAN

Palgrave Macmillan in the UK is an imprint of Macmillan Publishers Limited, registered in England, company number 785998, of Houndmills, Basingstoke, Hampshire RG21 6XS.

Palgrave Macmillan in the US is a division of St Martin's Press LLC, 175 Fifth Avenue, New York, NY 10010.

Palgrave Macmillan is the global academic imprint of the above companies and has companies and representatives throughout the world.

Palgrave® and Macmillan® are registered trademarks in the United States, the United Kingdom, Europe and other countries.

ISBN 978-1-349-30620-6 ISBN 978-0-230-25061-1 (eBook) DOI 10.1057/9780230250611

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources. Logging, pulping and manufacturing processes are expected to conform to the environmental regulations of the country of origin.

A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

10 9 8 7 6 5 4 3 2 1 18 17 16 15 14 13 12 11 10 09

## Contents

List of Illustrations				
Pro	eface	viii		
Ac	Acknowledgements of Permission to Reprint			
Nα	otes on Contributors	xii		
fo	troduction: Information Systems and the Quest r Meaning – An Account of Claudio Ciborra's Intellectual Journey ovan Francesco Lanzara	1		
	Part I Tracing Ciborra's Thought: From Institutional Economics to Phenomenology			
1	The Mind or the Heart? It Depends on the (Definition of) Situation <i>Claudio U. Ciborra</i>	31		
2	Improvisation as Mood Claudio U. Ciborra			
3	Imbrication of Representations: Risk and Digital Technologies Claudio U. Ciborra			
4	Interpreting E-government and Development: Efficiency, Transparency or Governance at a Distance? Claudio U. Ciborra			
5	From Tool to <i>Gestell</i> : Agendas for Managing the Information Infrastructure  Claudio U. Ciborra and Ole Hanseth			
6	The Platform Organization: Recombining Strategies, Structures, and Surprises  Claudio U. Ciborra			
7	Formative Contexts and Information Technology: Understanding the Dynamics of Innovation in Organizations  Claudio U. Ciborra and Giovan Francesco Lanzara			
8	Organizational Learning and Core Capabilities Development: The Role of IT Rafael Andrey and Claudio II. Ciborra	189		

9	Information Systems Claudio U. Ciborra			
10				
11	Markets, Bureaucracies and Groups in the Information Society: An Institutional Appraisal of the Impacts of Information Technology Claudio U. Ciborra	241		
	Part II Building on Ciborra's Legacy			
12	Knowledge: Climbing the Learning Ladder to a 'Phenomenological' View Andrea Resca	261		
13	Organizing Technology: Of Hospitality Martin Brigham and Lucas D. Introna	276		
14	The Hospitality Metaphor as a Theoretical Lens for Understanding the ICT Adoption Process Amarolinda Zanela Saccol and Nicolau Reinhard			
15	Rigid Technology and Improvised Implementation: The case of ERP Systems Amany R. Elbanna			
16	Object Lessons and Invisible Technologies  Edgar A. Whitley and Mary Darking			
17	Control Devolution as Information Infrastructure Design Strategy: A Case Study of a Content Service Platform for Mobile Phones in Norway Petter Nielsen and Margunn Aanestad	367		
18	Transaction Costs and Information Systems: Does IT Add Up? Antonio Cordella	386		
19	Dispositioning IT All: Towards a Theory for Thriving without Models  Ian O. Angell and Fernando M. Ilharco	401		
Ind	av	423		

## Illustrations

T	à	h	1	e	S

11.1	Qualitative changes in a sample of Italian organizations	250
11.2	Impacts of Information Technology on the	
	four main organizational forms	252
16.1	The first four stages presented by Law and Singleton (2005)	350
16.2	The next three stages presented by Law and Singleton	352
16.3	SME engagement interviews	355
16.4	Version information for DBE studio, taken from (DBE Studio, 2008)	358
19.1	Controlling vs. Dispositioning	419
Figu	res	
7.1	The process of innovation: The influence of the preexisting and	
	the emergent formative contexts	172
8.1	The Capability Development Process: from resources to	
	competitive advantage	192
8.2	Learning in the capabilities and core capabilities	
	development process	194
8.3	Basic learning processes in the core capabilities formation process	195
10.1	Types of decision making models	225
10.2	Organization of an administrative structure	234
10.3	The introduction of middlemen	235
17.1	Content service request on the CPA platform	374

## **Preface**

Claudio Ciborra was one of the most innovative thinkers in the field of information systems. He was one of the first scholars who introduced institutional economics in the study of IS; he elaborated new concepts, such as 'the platform organization'; and he contributed to the development of a new perspective altogether to the study of information systems through Heideggerian phenomenology. His untimely death left this work scattered in journals, edited books, conference proceedings, and some still unpublished.

This book contains some of the most seminal work of Claudio Ciborra and work of other authors who were inspired by this work and built on it. It is composed of three parts:

The introduction, by Giovan Frencesco Lanzara, takes the reader through the unfolding of Ciborra's thought and elaborates on the main themes of his work, namely socio-technical systems, institutional economics of information systems, IT and organizational learning, and finally his phenomenological analyses of information systems.

The first part of the book contains 11 of Claudio Ciborra's publications, selected by the editors to convey best the development of his work; it includes articles on all the thematic categories identified at the introduction, though the largest category is on his phenomenological work, which, we believe, was his most significant contribution.

The second part contains eight articles by other authors whose research was founded on Ciborra's ideas¹:

In *Knowledge: Climbing the Learning Ladder TO A 'Phenomenological' View* Andrea Resca points out that questions of epistemology have been a constant preoccupation in Ciborra's work, from his writings on transaction costs to his phenomenological analyses. He thus traces the thread that connects his analyses of knowledge and rationality in economic and administrative behaviour, of knowledge, learning and organizational strategy, and of improvisation and situated action.

In Hospitality, Improvisation and Gestell: A Phenomenology of Mobile Information, Martin Brigham and Lucas Introna provide a clear presentation of these three concepts and demonstrate the way they can enhance our understanding of IS and organizational change by using them to examine changes that occurred in the practice of a fire brigade in the UK when they started using mobile data systems.

In *The Hospitality Metaphor AS A Theoretical Lens to Understand the Process of ICT Adoption* Saccol and Reinhard discuss 'hospitality' as a new approach for ICT adoption that departs from positivist models. They trace the philosophical origins of this metaphor and its emergence in the IS field mainly through Ciborra's work and they apply it to gain insights on a case study of a Brazilian Bank that equipped its employees with mobile technology.

Amany Elbanna's paper *The Validity of the Improvisation Argument in the Implementation of Rigid Technology: The Case of ERP Systems* draws on Ciborra's work on improvisation and drift. She examines whether these concepts are relevant and valid for ERP projects, which are generally understood as rigid and therefore in need of careful planning. She combines Ciborra's ideas with an Actor Network Theory (ANT) analysis to argue that improvisation, bricolage and drift are constituent processes of highly structured projects of rigid technology.

Edgar Whitley and Mary Darking, in *Object Lessons and Invisible Technologies* examine the nature of technology artefacts – a longstanding theme in IS research – by contrasting ideas stemming from recent research in the ANT perspective and Ciborra's phenomenology. They use a European Union project that aims at developing a new technological infrastructure to demonstrate the explanatory capacity of these perspectives and emphasize the significance of the concept of *Gestell* that Ciborra drew from Heidegger.

Petter Nielsen and Margunn Aanestad in Control Devolution as Information Infrastructure Design Strategy: A Case Study of a Content Service Platform for Mobile Phones in Norway draw on Ciborra's critical writings on control in IS development and the development of ICT infrastructures. They focus on the control versus autonomy choices made in the process of the development of an infrastructure for mobile content by two Norwegian operators. They argue for 'control devolution' as a successful strategy that should be followed by the industry in order to address risks in infrastructure projects and maintain innovative capacity.

Antonio Cordella's article *Transaction Costs and Information Systems: Does it Add Up?* builds on Ciborra's work on transaction costs economics, which was among the earliest efforts to sensitize the IS field on the way ICT affects information aspects of economic exchange. Following this path of thought Cordella discusses the effects of ICT in terms of the interdependences of the factors contributing to transaction costs.

Finally, Ian Angell and Fernando Ilharco, in Chapter 19, *Dispositioning it All: Towards a Theory for Thriving without Models*, builds on Heidegger's ideas in Being and Time and Clausewitz's On War, and introduces the notion of disposition as an appropriate notion for understanding and coping in a world entangled in information and communication technologies.

#### Note

1. Chapters 12–18, as well as their description in this Preface, were first published in the *Journal of Information Technology*, 21(3), 2006, in a special issue: 'Claudio Ciborra and the IS field: legacy and development', edited by Chrisanthi Avgerou, Ole Hanseth and Leslie Willcocks. We are grateful to Palgrave Macmillan for giving us permission to reproduce these articles, some with minor modifications, in this book.

# Acknowledgements of Permission to Reprint

Grateful acknowledgement is made to the following sources for permission to reprint material in this book:

The Mind Or The Heart? It Depends on (The Definition of) the Situation – Claudio Ciborra (2006) *Journal of Information Technology* **21**(3): 129–139.

Reprinted with permission from Palgrave Macmillan.

Imbrication of Representations: Risk and Digital Technologies – Claudio Ciborra (2006) *Journal of Management Studies* **43**(6): 1339–1356.

Reprinted with permission from Wiley-Blackwell.

Interpreting e-government and Development: Efficiency, Transparency or Governance at a Distance? – Claudio Ciborra (2005) *Information Technology and People* **18**(3): 260–279.

Reprinted with permission from Emerald Group Publishing Limited.

From Tool to Gestell: Agendas for Managing the Information Infrastructure – Claudio Ciborra and Ole Hanseth (1998) *Information Technology and People* 11(4): 305–327.

Reprinted with permission from Emerald Group Publishing Limited.

The Platform Organization: Recombining Strategies, Structures, and Surprises – Claudio Ciborra (1996) *Organization Science* **7**(2): 103–118.

Reprinted with permission from the Institute for Operations Research and the Management Sciences (INFORMS).

Formative Contexts and Information Technology: Understanding the Dynamics of Innovation in Organizations – Claudio Ciborra and Giovan Francesco Lanzara (1994) *Accounting, Management & Information Technology* **4**(2): 61–86.

Reprinted with permission from Elsevier.

Organizational Learning and Core Capabilities Development: The Role of IT – Raphael Andreu and Claudio Ciborra (1996) *Journal of Strategic Information Systems* 5: 111–127.

Reprinted with permission from Elsevier.

From Thinking to Tinkering: The Grassroots of Strategic Information Systems – Claudio Ciborra (1992) *The Information Society* 8: 297–309.

Reprinted by permission of Taylor and Francis Ltd.

Reframing the Role of Computers in Organizations: The Transactions Costs Approach – Claudio Ciborra (1987) *Office, Technology and People* **3**: 17–38.

Reprinted with permission from Emerald Group Publishing Limited.

Markets, Bureaucracies and Groups in the Information Society: An Institutional Appraisal of the Impacts of Information technology – Claudio Ciborra (1983) Information Economics and Policy 1(2): 145-160.

Reprinted with permission from Elsevier.

Knowledge: Climbing the Learning Ladder to a 'Phenomenological' View - Andrea Resca (2006) Journal of Information Technology 21(3): 203–210.

Reprinted with permission from Palgrave Macmillan.

Hospitality, Improvisation and Gestell: A Phenomenology of Mobile Information – Martin Brigham and Lucas D. Introna (2006) Journal of Information Technology 21(3): 140-153.

Reprinted with permission from Palgrave Macmillan.

The Hospitality Metaphor as a Theoretical Lens to Understand the Process of ICT Adoption - Amarolinda Zanela Saccol (2006) Journal of Information Technology 21(3): 154-164.

Reprinted with permission from Palgrave Macmillan.

The Validity of the Improvisation Argument in the Implementation of Rigid Technology: The Case of ERP Systems - Amany Elbanna (2006) Journal of *Information Technology* **21**(3): 165–175.

Reprinted with permission from Palgrave Macmillan.

Object Lessons and Invisible Technologies - Edgar A. Whitley and Mary Darking (2006) Journal of Information Technology 21(3): 176–184.

Reprinted with permission from Palgrave Macmillan.

Control Devolution as Information Infrastructure Design Strategy: A Case Study of a Content Service Platform for Mobile Phones in Norway – Petter Nielsen, Margunn Aanestad (2006) Journal of Information Technology 21(3): 15–194.

Reprinted with permission from Palgrave Macmillan.

Transaction Costs and Information Systems: Does IT Add Up? – Antonio Cordella (2006) Journal of Information Technology 21(3): 195–202.

Reprinted with permission from Palgrave Macmillan.

### Notes on Contributors

Margunn Aanestad, Ph.D., is an Associate Professor in the Department of Informatics, University of Oslo. She has worked within health care and telecommunications before commencing her Ph.D. study of surgical telemedicine. Her research has been published in Journal of Computer Supported Collaborative Work, Methods of Information in Medicine, Journal of Telemedicine and Telecare, Electronic Journal of Information Systems in Developing Countries, European Journal of Innovation Management, Journal of IT for Development, and MIS Quarterly. Her research interests are broadly related to information infrastructures, particularly within the public sector, in both developed and developing countries.

Ian O. Angell has been a Professor of Information Systems at the London School of Economics since 1986, having also previously taught Computer Science at Royal Holloway College and University College London. He holds a Ph.D. in Algebraic Number Theory from the University of London (1971). His research work concentrates on the global consequences of Information and Communication Technology (ICT); strategic information systems; computers and risk (opportunities and hazards); the limits of computation; the future of work; and on organizational and national policies for ICT. He is well-known on the international lecture circuit as a 'futurologist.'

**Rafael Andreu** (Ph.D., MIT 1978), is a Professor of Strategic Management and Information Systems at IESE Business School. His main areas of interest are in organizational learning for capability development, and a learning-based view of the management profession.

Chrisanthi Avgerou is a Professor of Information Systems at the London School of Economics and Political Science. Her main interests concern the relationship of ICT to organizational change and the role of ICT in socio-economic development. She is chairperson of the IFIP Technical Committee 9 on Social Implications of Information Technology and she chaired the IFIP WG 9.4 group on computers in developing countries from 1996 till 2003. Among her recent publications are Information Systems and Global Diversity, and The Social Study of Information and Communication Technology: Innovation, Actors, and Contexts, both published by Oxford University Press.

Martin Brigham is a Lecturer in the Department of Organisation, Work and Technology, Lancaster University Management School, Lancaster University, UK. His research draws on organization and management studies, modern European philosophy and science and technology studies. His research interests focus on the relationship between information technology and organizational change, the discourse of environmentalism and sustainability, and the globalization of

management practice. He is a member of the Centre for the Study of Technology and Organisation at Lancaster University. He was previously at the University of Warwick. UK.

Claudio U. Ciborra graduated in Electronic Engineering from the Politecnico di Milano, Italy, before pursuing studies in management, economics and organization theory at the University of California, Los Angeles and Harvard University. He held teaching positions at a number of Italian universities and was Visiting Professor in many European and American universities. He was Professor of Information Systems, Convenor of the Department of Information Systems, and PwC Risk Management Professor at the Centre for Analysis of Risk and Regulation at the London School of Economics and Political Science. He carried out extensive research in the fields of new technologies, organizational design, learning, knowledge and change.

Antonio Cordella is a Lecturer in Information Systems at the London School of Economics and Political Science. His research interests cover the areas of e-government, economic theories of information systems, and the social studies of information systems.

Mary Darking is a Lecturer in Social Policy in the School of Applied Social Science at the University of Brighton. She has an MSc and PhD from the LSE both in Information Systems. Whilst at the LSE Mary was a teaching assistant to Claudio Ciborra for three years on a Masters level course entitled Interpretations of Information Systems. Mary's PhD research looked at the organizational and pedagogical implications of integrating e-learning technologies into higher education. Her current research interests include the governance of large-scale infrastructures and the policy implications of cross sector partnerships. Her recent publications consider the role of FLOSS communities and technologies in initiatives designed to promote sustainable economic development through supporting small and medium-sized enterprise.

Amany R. Elbanna is a Lecturer in Information Systems at the Loughborough University's Business School. She holds Ph.D in Information Systems from The London School of Economics. Her research interests include IS innovation and the interaction between technology and organizations, IS project management, and Agile software development.

Ole Hanseth, PhD, is Professor in the Department of Informatics, University of Oslo. His research focuses mainly on the interplay between social and technical issues in the development and use of large-scale networking applications. He is also Visiting Professor at London School of Economics, Department of Information Systems.

Fernando Ilharco is Assistant Professor of the Catholic University of Portugal, Lisbon, where he is Director of the PhD in Communication Sciences Programme. He holds a PhD by the London School of Economics and Political Science, Department of Information Systems, 2002, and an MBA by the Business School of the Catholic University of Portugal (1993). Since his PhD, Ilharco has been

publishing regularly in academic journals and books. He worked with a team of consultants oriented by Professor Michael Porter, in Lisbon, between 1993 and 1996. For ten years he kept a regular column on societal issues on *Público*, a leading Portuguese reference newspaper. His areas of interest are (i) ICT and Society and (ii) Leadership and Organisational Theory – both informed by phenomenological lenses.

Lucas D. Introna is Professor of Organisation, Technology and Ethics at Lancaster University Management School, Lancaster University, UK. His research focuses on power, virtual organizing, privacy and embodiment, and draws on recent advances in continental philosophy and ethics, phenomenology and the social construction of information technology. He is co-editor of Ethics and Information Technology and an associate editor of Management Information Systems Quarterly. He is also a founding member of the International Society for Ethics and Information Technology. He was previously at the London School of Economics and Political Science, UK.

Giovan Francesco Lanzara is Professor of Organization Theory at the University of Bologna, Italy and Visiting Professor at the London School of Economics and Political Science (Information Systems and Innovation Group, Department of Management). His main research interests are in the areas of organizational learning and design, ICT-based innovation, and in the evolutionary dynamics of social and political institutions. More recently he did research on the relationships between knowing and organizing. He is the author of several articles published in major international journals and currently co-authoring and co-editing a book on "ICT and Innovation in the Public Sector" for Palgrave MacMillan.

**Petter Nielsen**, Ph.D., is a Researcher at Telenor Research & Innovation and associated professor at Dept. of Informatics, University of Oslo, Norway. His research circles around the construction, evolution and adoption of large scale and heterogeneous information infrastructures. Empirically he focuses on mobile services and the development of the Mobile Internet in developed as well as emerging markets. His research has been published in the Scandinavian Journal of Information Systems, Journal of Information Technology, Journal of Information Systems in Developing Countries, and Journal of IT for Development.

Nicolau Reinhard is Professor of Management at the School of Economics, Administration and Accounting of the University of São Paulo, Brazil. His research interests and publications are related to the management of the IT function, IT in developing countries, the use of IT in Public Administration and Information Systems Implementation. Prof. Reinhard has a degree in Engineering, a PhD in Management, and, besides his academic career, has held executive and consulting positions in IT management in private and public organizations.

Andrea Resca is Doctoral Candidate at the Luiss "Guido Carli" University, Rome, Centre of Research on Information Systems (Ce.R.S.I). After his undergraduate studies at the University of Bologna (School of Political Science) under the supervision of Claudio Ciborra, moved to South Korea where he obtained a Master of Arts in Korean Studies (Area Studies). Once in Italy again, he joined Claudio

Ciborra at the "Libera Università di Lingue e Comunicazione – IULM", Milan, as Senior Research Fellow researching e-government until 2005. His publications range from the Organisation Theory discipline to Information Systems discipline including e-government and e-participation as his current research domains.

Amarolinda Zanela Saccol is a Lecturer and Researcher of Management and Information Systems at the University of Vale do Rio dos Sinos (UNISINOS) -Brazil. She has a Ph.D. in Business Administration from the University of São Paulo School of Economics, Business Administration and Accounting (FEA/USP). Her research interests include the development, adoption and management of ICT and implications for work and organizations.

Edgar A. Whitley is a Reader in Information Systems in the Information Systems and Innovation Group of the Department of Management at the London School of Economics and Political Science. He has a BSc (Econ) and a PhD in Information Systems both from the LSE. Edgar is the co-editor for the journal Information Technology & People and an associate editor for the journal MIS Quarterly. Together with Antonio Cordella and Jannis Kallinikos, Edgar organized the special issue of the European Journal of Information Systems (EJIS) celebrating Claudio's life and work (volume 14(5), 2005). Edgar is the research coordinator of the LSE Identity Project and represented the project at the Science and Technology Select Committee review of the Scheme. Edgar has written extensively about the Identity Cards Programme for both academic and trade audiences and is a frequent media commentator on the Scheme.

Leslie P. Willcocks is a professor at the London School of Economics and Political Sciences and is recognized internationally for his work in the Information Systems field. He is co-author of 29 books and over 150 refereed publications and is a visiting professor at three other universities as well as editor of the Journal of Information Technology. His major research interests include outsourcing, IT management, large scale complex projects, e.g. CRM, ERP, organizational change and IT measurement. He is also engaged in looking at technology in globalization and the strategic use of IT, IT leadership, IT enabled organizational change as well as business process outsourcing and offshoring, organizational behaviour, social theory and philosophy for information systems, and public sector IT policy.