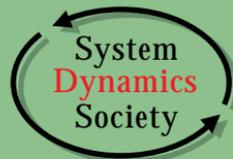


welcome

systems thinking for
the next millennium

17th International Conference
of the System Dynamics Society

5th Australian & New Zealand
Systems Conference



ANZSYS

ISBN 0 9672914 0 2

papers and sessions from the conference are accessible via **author**,
title or **session name** by searching in the contents list to your left

acknowledgments

organising committee

Conference Chair

Robert Y Cavana

Victoria University of Wellington
New Zealand

E-mail: Bob.Cavana@vuw.ac.nz

Programme Chair

Jac Vennix

University of Nijmegen
The Netherlands

E-mail: J.Vennix@maw.kun.nl

Conference Manager Australasia

Margaret Stevenson-Wright

Victoria University of Wellington
New Zealand

E-mail: Margaret.Stevenson-Wright@vuw.ac.nz

International Conference Manager

Roberta L Spencer

System Dynamics Society
USA

E-mail: System.Dynamics@albany.edu

Conference Assistant Australasia

Joy Candlish

Victoria University of Wellington
New Zealand

E-mail: Joy.Candlish@vuw.ac.nz

programme committee

Jac Vennix

Nijmegen University
Netherlands

John Barton

Monash University
Australia

Bill Hutchinson

Edith Cowan University
Australia

Purnedu Mandal

Deakin University
Australia

George Richardson

State University of New York
Albany
USA

Habib Sedehi

Auditing Informatico
Italy

Eric Wolstenholme

Cognitus Ltd
UK

Bob Cavana

Victoria University of Wellington
New Zealand

John Brocklesby

Victoria University of Wellington
New Zealand

Deborah Jones

Victoria University of Wellington
New Zealand

Ozge Pala

Brabant University
Netherlands

Etiënne Rouwette

Nijmegen University
Netherlands

John Sterman

Massachusetts Institute of Technology
USA

referees

Susan Byrne

University of Auckland
New Zealand

Geoff Coyle

Visiting Professor
University of South Bank
UK

James Doyle

Worcester Polytechnic
USA

Bob Flood

Visiting Professor, Monash University
Australia and Lincoln University
United Kingdom

Alan Graham

Pugh-Roberts Associates
USA

Jack Homer

USA

Paul Langley

UK

Yaman Barlas

Bogazici University
Turkey

Pål Davidsen

University of Bergen
Norway

Sharon Els

Pugh-Roberts Associates
USA

David Ford

University of Bergen
Norway

Andreas Groeßler

Universitaet Mannheim
Germany

David Lane

London School of Economics
UK

Michel Karski

France

Barry Richmond

High Performance Systems, Inc.
USA

Mark Williams

Edith Cowan University
Australia

Dianna Wuagneux

International Centre for the Advancement of
Adult Learning
Castleton
USA

Marcia Salner

University of Illinois at Springfield
USA

Graham Winch

Plymouth University
UK

Showing Young

National Sun Yat-sen University
Taiwan

sponsors & exhibitors

Arthur Andersen, LLP

225 Franklin Street
Boston, MA 02110
United States of America
Phone: +1 617 330-4186

[More information...](#)

School of Business & Public Management

Victoria University of Wellington
PO Box 600, Wellington, New Zealand
Phone: +64 4 463 5397
Fax: +64 4 463 5084

<http://www.vuw.ac.nz/sbpm>

[More information...](#)

A.T. Kearney, Inc.

3455 Peachtree Road, NE
Suite 1600
Atlanta, Georgia 30326
United States of America
Phone: +1 404 760-6600
Fax: +1 404 760-6601

Email: Nathan.Forrester@atkearney.com
<http://www.atkearney.com/>

[More information...](#)

Executive Programmes

Graduate School of Business & Government
Management

Victoria University of Wellington
PO Box 600, Wellington, New Zealand
Phone: +64 4 463 5452

Fax: +64 4 463 5459

<http://www.vuw.ac.nz/gsbgm/exec-dev>

Pugh-Roberts Associates

41 William Linksey Way
Cambridge, MA 02142, USA

Tel: +1 617 864 8880

Fax: +1 617 864 8884

<http://www.pa-consulting.com/>

[More information...](#)

Ministry of Health

133 Molesworth Street, Wellington, New
Zealand

Phone: +64 4 496-2000

Fax: +64 4 496-2340

<http://www.moh.govt.nz/moh.nsf>

[The Ministry's logo...](#)

High Performance Systems, Inc.

45 Lyme Road
Hanover, New Hampshire, USA
Phone: +1 603 643 9636
Fax: +1 603 643 9502
Email: support@hps-inc.com
[More information...](#)

Powersim

1175 Herndon Parkway, Suite 600
Herndon, Virginia 20170, USA
Phone: +1 703 481-1270
Fax: +1 703 481-1271
Email: powersim@powersim.com
<http://www.powersim.com/>
[More information...](#)

High Performance Learning Systems Limited

PO Box 31-503, Milford, Auckland, New Zealand
Phone: +64 9 486 5330
Fax: +64 9 486-5440
Email: dress@hpls.co.nz
<http://www.hpls.co.nz/>
[More information...](#)

HVR Consulting Services Limited

Selborne House
Alton, Hampshire, GU34 2QJ, UK
Phone: +44 1420 87977
Email: jonathan.coyle@hvr-scl.co.uk
[More information...](#)

Ventana Systems, Inc.

60 Jacob Gates Road
Harvard, MA 01451, USA
Phone: +1 617 489 5249
Fax: +1 617 489-5316
Email: vensim@vensim.com
<http://www.vensim.com/>
[More information...](#)

New Zealand Organisational Learning Centre Limited

PO Box 2855, Wellington, New Zealand
Phone: +64 4 499 8140
Fax: +64 4 499 8395
Email: wilsonk@actrix.gen.nz
Email: bob.cavana@vuw.ac.nz
[More information...](#)

The University of Auckland Business School

Private Bag 92019

Auckland, New Zealand

Phone: +64 9 373 7599

Email: k.maani@auckland.ac.nz

[More information...](#)

John Wiley & Sons Ltd

Baffins Lane, Chichester

West Sussex, PO19 1UD, England

Phone: +44 1243 770669

Fax: +44 1243 770677

Email: cs-journals@wiley.co.uk

<http://www.wiley.co.uk>

[More information...](#)

Pegasus Communication

One Moody Street

Waltham, Massachusetts 02453-5339

United States of America

Phone: +1 718 398-9700

Fax: +1 718 894-7175

Email: query@pegasuscom.com

<http://www.pegasuscom.com/>

[More information...](#)

additional copies

To obtain additional copies of these proceedings, or to learn more about the System Dynamics Society and the international research conferences, contact:

Roberta L Spencer

System Dynamics Society
Milne 300-Rockefeller College
University at Albany
State University of New York
Albany
New York 1222
United States of America

Phone: +1 518 442-3865

Fax: +1 518 442-3398

Email: system.dynamics@albany.edu

ISBN 0-9672914-0-2

© 1999, The System Dynamics Society

Editors

Robert Y. Cavana

Victoria University of Wellington
New Zealand

E-mail: Bob.Cavana@vuw.ac.nz

Jac A. M. Vennix

University of Nijmegen
The Netherlands

E-mail: J.Vennix@maw.kun.nl

Etiënne A. J. A. Rouwette

University of Nijmegen
The Netherlands

E-mail: E.Rouwette@maw.kun.nl

Margaret Stevenson-Wright

Victoria University of Wellington
New Zealand

E-mail: Margaret.Stevenson-Wright@vuw.ac.nz

Joy Candlish

Victoria University of Wellington
New Zealand

E-mail: Joy.Candlish@vuw.ac.nz

Webwrights

(CD design and creation)
New Zealand

Introductory Comments

welcome from the chairs

On behalf of the Organising and Programme Committees, we would like to warmly welcome you all to the 17th International Conference of the System Dynamics Society, which is being held in conjunction with the 5th Australia and New Zealand Systems Conference. We are very pleased that you are here in Wellington, New Zealand to share in Victoria University's Centennial Year celebrations. We would also like to celebrate that this is the first time that the System Dynamics Society has held its international conference in the Southern Hemisphere, and this is also the first time that the Australia and New Zealand Systems Conference has been held in New Zealand. We hope that these events will occur a little more frequently in the next millennium!

As you all know, we are here to discuss/debate the conference theme of **'systems thinking for the next millennium'**. Sub-themes will examine the applications, contributions of and linkages between systems thinking, scenario planning

and strategic simulation. These themes will be addressed through the perspectives of:

- System dynamics
- Hard, soft and critical systems
- Adaptive and strategic planning
- Organisational learning and research
- Chaos and complexity
- Philosophy of systems thinking
- Action learning and research
- Community and soft OR
- Management science methodologies
- Cognitive processes in systems thinking and learning
- Systems methodologies

In other areas of interest, parallel sessions and some plenary sessions will cover the range of work being done by systems thinking and system dynamics practitioners worldwide. There will be over 200 paper presentations, workshops and tutorial sessions over the 3 ½ day conference, and participants are from 40 different countries

from around the world. Among the keynote speakers we are pleased to welcome:

Professor Richard Bowden from Michigan State University, USA, a leading figure in systemic development, who will give the Fred Emery Memorial Address entitled “Systems Thinking (and Action) from the new Millenium: Learning from the Future”.

Professor Peter Checkland, Professor of Systems from Lancaster University, UK, who will give a keynote address on “Soft Systems Methodology: a 30-year Retrospective”.

Professor Geoff Coyle, currently a visiting Professor of Strategic Modelling at the University of South Bank, UK, who will give keynote address entitled “Qualitative Modelling in System Dynamics or What are the Wise Limits of Quantification”.

Professor Bob Flood, currently a visiting Professor at Monash University, Australia and Lincoln University Campus, UK, who will be giving a keynote address entitled “No More Problems, Solutions, or Normal Organisational Life”.

However, the success of a conference depends on the contributions of all the participants – the presenters, the session chair persons, the discussants, the delegates, and the administrators. We welcome you all here to Wellington and wish you a tremendous conference – an opportunity to learn and share your experiences, and hopefully enjoy the hospitality that we have organised for you and what ever else you may find that Wellington and New Zealand can offer you!

However, before we pass you over to Professor Eric Wolstenholme, the organiser of the 1994 International System Dynamics Conference in Stirling, Scotland, that also involved the wider systems community; and then to the current President of the System Dynamics Society, Dr Jack Pugh, one of the founding fathers of the field of System Dynamics and designer of the DYNAMO, the original dynamic simulation software for system dynamics models, we would just like to say a few words of thanks to our Conference Sponsors.

This conference would not have been possible without the generous support of our sponsors. In particular, we would like to thank our hosts the Graduate School of Business and Government Management at Victoria University (VUW) and in particular, we would like to thank John Greenwood for doing such a tremendous job with our conference web site, and our Australasian Conference Manager, Margaret Stevenson-Wright and Conference Assistant, Joy Candlish. Without their untiring work over the past couple of years, this conference would not have been organised as smoothly or as well, and we are very grateful for the sponsorship of the Executive Development Programme at VUW for sponsoring two of our keynote speakers, Professors Richard Bawden and Geoff Coyle. We would also like to thank Professor Pat Walsh and the School of Business and Public Management at Victoria University for their assistance with the preparation for this conference and for sponsoring another keynote speaker, Professor Peter Checkland.

We are also extremely indebted to all the international and other New Zealand sponsors. In particular we would like to thank Arthur Andersen for their extremely generous support in hosting our Welcome Reception to be held in our new national museum, Te Papa. We hope you will be able to take some time out from the busy conference schedule to spend some time browsing around our new museum (which is the envy of most Aucklanders!). We would also like to take this opportunity to thank HVR Consulting Services from the UK for sponsoring the special edition of the Journal of the Operational Research Society of UK on System Dynamics (that is provided in each of your conference satchels). We apologise that we have only provided you with a hard copy of the abstracts to read while you are here, although there are over 150 conference papers on the CD that you can browse through at leisure when you return to your home countries.

We would also like to thank our New Zealand sponsors for providing the New Zealand consultants' wine and cheese reception (ie The University of Auckland Business School; High Performance Learning Systems Ltd; and the New Zealand Organisational Learning Centre). And finally, but certainly not least, we would like to thank all the other sponsors who have generously supported this conference (ie Pugh-Roberts Associates, Inc.; A.T. Kearney, Inc.; High Performance Systems, Inc.; Powersim, Ventana Systems, Inc, Pegasus Communications, Inc, and John Wiley & Sons, Ltd, and the New Zealand Ministry of Health).

We would also like to express our warmest gratitude to the endless efforts of Roberta Spencer, and her colleagues, at the Executive Office of the System Dynamics Society in Albany, USA. Roberta has been extremely helpful in her role as International Conference Manager for this conference.

Finally we would like to thank the other members of the Organising and Programme Committees for their help and all the referees that refereed the Plenary Papers, to help maintain the high international standard for this conference.

We wish you all a very stimulating and interesting conference, and we hope you have a very enjoyable time while you are here in Wellington and New Zealand.

Best wishes from

Bob Cavana
Conference Chair



Jac Vennix
Programme Chair



linking systems conferences

Linking Systems Conferences: Feedback as Baggage

Eric Wolstenholme

An Opportunity

By combining the 1999 International System Dynamics Conference with the Australian and New Zealand Systems Conference, the organisers of the event have signalled a timely return to the theme of the relationship between two distinct strands of systems concepts. These are, US systems thinking, as defined by qualitative system dynamics, and UK systems thinking, as defined by soft operational research (soft OR). Exploration of this theme was begun by myself at the 1994 International System Dynamics conference in Stirling, Scotland and referred to as "System Dynamics – Exploring the Boundaries".

The conference organisers have kindly given me the platform here to present some thoughts to assist the conference in making

the most of this opportunity to further explore the linkages between these strands of systems thinking.

A Little History

Let me start by explaining why I think this exploration is important.

In 1979 when I had studied system dynamics for about three years, I was involved in teaching for the Open University in the UK using the first soft operational research approach, which was that of Peter Checkland's Soft Systems Methodology (SSM). My contribution to this teaching was, to the amazement of the Open University, to incorporate causal loop maps into the creation of rich pictures. Here was a significant UK systems faculty who limited their 'diagramming' to Venn diagrams and the nearest they got to dynamics was to create flow diagrams. They had never seen causal loop maps. In fact, the use of system dynamics within SSM was later suggested by

Peter (Checkland, 1981). In general there existed a distinct lack of appreciation of the power of system dynamics in the UK and likewise there was a similar ignorance of soft OR in the US.

This disparity between the UK and US versions of systems became a research strand of mine and I started to pose the question as to whether system dynamics was a technique of computer simulation or systems methodology in its own right like SSM (Wolstenholme, 1982). I later proposed qualitative system dynamics as a free standing concept (Wolstenholme and Coyle, 1983; Wolstenholme, 1985) on the grounds that, even in qualitative form, it advanced thinking further than some other systems methods. During the 1980s there was a surge of further thinking about systems in the UK and a number of other strands of soft OR emerged, including Strategic Choice, Critical Systems Heuristic, Strategic Options Development and Analysis, Strategic Assumption Surfacing and Testing and Total Systems Intervention. Also during this period, systems thinking was used by Senge in the

US to mean qualitative system dynamics (Senge, 1990) and qualitative system dynamics was proposed as a formal part of system dynamics (Wolstenholme, 1990).

The 1994 SD conference brought together proponents of many of the above strands of systems thinking and a broad range of views were aired. However, many misunderstandings still persist between the UK and US strands of systems ideas which should be debated whenever a mixed conference of systems practitioners, like the one here, meet.

A Personal View

My own conclusion about the links between system dynamics and soft OR is much clearer today than prior to the Stirling conference and is very similar to what Peter Checkland has always intimated. I will share these here to provide a baseline for your thinking during the conference.

This view is that Peter Checkland's original SSM was not only the first attempt, but the definitive 'shell' for true systems thinking. In

summary (and in my own words with apologies to Peter for any omissions or shortcuts) it simply says that:

- systems do not exist in the real world, there are only messes in the land of "what is".
- systems thinking takes place in the systems world, which is a place across a systems boundary where "what should/might be" is designed from entirely new premises.
- there is a need in a systemic design to be specific enough to be useful, whilst being vague enough to be relevant and unbiased.
- any attempt to take worldly concepts (such as a feedback paradigm) into the systems world can cause bias.
- if you take any baggage you should recognise that you have (warning to system dynamicists).
- having designed a new relevant system in the systems world, you then return to

the real world and, by comparison with the original mess, establish appropriate change.

BUT, there is nothing wrong with using **any** techniques (systems or otherwise), either within the real world to demonstrate 'what is' or within the systems world to design 'what might be', as long as you recognise their bias and limitations.

On this basis, I believe that the original SSM subsumes all other forms of system thinking, although this might not be true of the secondary literature in SSM, which tends to be much more prescriptive and to carry its own baggage.

Conference Thoughts and Baggage

So what are the thoughts to leave you with?

When you apply methods of systems thinking, be aware of your baggage. This is often deep seated. Your baggage can be ageism, religion, sexism, diversism...or feedback. The really big question for system

dynamicists to ask themselves, is still the question I posed in 1982. That is:

“is feedback a piece of baggage that you do not even realise you carry, or is it such an endemic and integral part of the life that it cannot be left behind?”

Hint. This question perhaps requires a breakdown of feedback into different types. For example, there is sub conscious feedback in our bodies that we can never leave behind and there is learned feedback that we could unlearn. But there is also ‘conscious choice’ feedback that can certainly be left behind, just like we could shake off all those ‘isms’ if we really wanted to.

Finally, a word to put the whole thing into ultimate perspective, which was beautifully summed up by the after dinner speaker we had at the Stirling conference:

“All systems methods are systemic and are a long way from piecemeal thinking. To an outsider

like me all these systems methods seem the same and does it matter if there are slight differences”.

You decide it really matters and if you can honestly answer my question. Good luck with the conference and may you have profound thoughts. Please also integrate by attending sessions in systems methods outside your own wherever possible – let’s not have two, parallel conferences.

References

P. B. Checkland (1981). *Systems Thinking, Systems Practice*, Wiley, Chichester.

P. Senge (1990). *The Fifth Discipline*, Doubleday.

E. F. Wolstenholme (1982). *System dynamics in perspective, JORS*, 33, 547-556.

E.F.Wolstenholme and R.G.Coyle (1983). The Development of System Dynamics as a Methodology for System Description and Qualitative Analysis. *Journal of the Operational Research Society*, Vol. 34, No. 7, pp. 569-81).

E. F. Wolstenholme (1985). A methodology for qualitative system dynamics,

Proc. International System Dynamics Society Conference, Denver, U.S.A.

E. F. Wolstenholme (1990). *System Enquiry - a System Dynamics Approach*, Wiley.

Authors Index



Agatstein, K. E.

[Strategic Value: Incorporating Real Options into System Dynamics Models](#) (abstract only)

G. E. Danner, K. E. Agatstein, D. E. Angelahis and O. Uhan

Akmaz, Mustafa

[Strategic Analysis of and Scenario Planning for the Turkish Public Social Security System](#)

Sibel Güven, Erol Sayin and Mustafa Akmaz

Alcalá, Ismael

[A Case of Interaction between Systems Dynamics and Linear Programming: The Rapim-Pirenaica Model](#)

Silvio Martínez, Francisco Gordillo, Elena López and Ismael Alcalá

Alkim, Tom P.

[Virtual Technology Assessment for Viable Policy Options: A System Dynamics Approach](#)

Jan Faber and Tom P. Alkim

Alm, Irma

[The Art of Developing Management Support: Demands on Theoretic and Technologic Synergy](#)

Irma Alm

Angelahis, D. E.

[Strategic Value: Incorporating Real Options into System Dynamics Models](#) (abstract only)

G. E. Danner, K. E. Agatstein, D. E. Angelahis and O. Uhan

Aracil, Ismael Alcalá y Javier

[Competition in the Spanish Telecommunications Market: A Co-evolutionary, Differential Game Approach](#)

Marta Gala, Silvio Martínez Vicente, Francisco Gordillo and Ismael Alcalá y Javier Aracil

Armstrong, Trevor

[The Practical Applications of System Dynamics to Identify System Specific Maintenance Strategies](#)
(abstract only)

John McLuckie, Mark Heffernan and Trevor Armstrong

Arquitts, Steve

[Environmental Performance for the Long Term Industrial Competitiveness: A System Dynamic Study of Chinese Cement Industry](#) (abstract only)

Xu Honggang and Steve Arquitts

Arthur, D. J. W.

[Extending Model Validity Concepts and Measurements in System Dynamics](#) (plenary)

D. J. W. Arthur and G. W. Winch

Arthur, Daniel J. W.

[Building and Conceptualising Generic Model Structures to address Fundamental Business Change](#)

Graham W. Winch, Daniel J. W. Arthur and Colin Grey

Atçi, B.

[Different Styles of Learning Organizations](#) (abstract only)

A. K. Varoglu, B. Atçi and Y. Ercil

Azevedo-Carns, Dianna

[Modelling the Effect of Cognitive Variables on Group Brainstorming Using System Dynamics](#)

(abstract only)

Dianna Azevedo-Carns



Bachels, Mark

[Using a Systems Approach to Unravel Feedback Mechanisms Affecting Urban Transport Choices](#)

Mark Bachels, John Peet and Peter Newman

Bailey, John

[The Improvisational Music Group — A Human System Simulation](#) (workshop)

Peter Forrester and John Bailey

Bala, B. K.

[Computer Modelling of Energy, Food and Environment: The Case of Bangladesh](#) (abstract only)

B. K. Bala

Balderstone, Steven J.

[Increasing User Confidence in System Dynamics Models Through Use of an Established Set of Logic Rules to Enhance Forrester and Senge's Validation Tests](#)

Steven J. Balderstone

Baoqun, Fan

System Dynamics Model on Harmonious Development of Chinese Science & Technology,
Education and Economy under High Technology

Xu Qingrui and Fan Baoqun

Barlas, Yaman

Structure-oriented Behavior Tests in Model Validation (plenary)

Yaman Barlas and Korhan Kanar

Barlas, Yaman

Dynamic Simulation for Strategic Insurance Management

Yaman Barlas, Korkut Çirak and Ekrem Duman

Barlas, Yaman

Modelling of a Wetland Through Sustainable Development

Burak Güneralp and Yaman Barlas

Barton, John

The Use of Group Modelling Techniques as a Teaching Tool (plenary)

Tim Haslett, John Barton and Rod Sarah

Barton, John

Pragmatism, Systems Thinking and System Dynamics (plenary)

John Barton

Bawden, Richard

Fred Emery Oration: Systems Thinking (and Action) FROM the New Millennium: Learning
from the Future (keynote)

Richard Bawden

Baxter, B.

[System Dynamics of Sustainable Port Management](#) (abstract only)

B. Baxter

Bell, G. A.

[Research Design for a Comparative Study of the COCOMO II Model and a Systems Cost Model](#)

G. A. Bell, M. A. Cooper, J. O. Jenkins and M. Kennedy

Bernik, Igor

[System Dynamics and Decision Support in Complex Systems](#)

Miroљub Kljajić, Andrej Škraba and Igor Bernik

Bianchi, Carmine

[Benefits of the Activity Based Costing \(ABC\) for SMEs: A System Dynamics Perspective](#) (abstract only)

Adolfo Crespo, José-María Sarriequi and Carmine Bianchi

Bianchi, Carmine

[Modelling Strategic Assets as a Dynamic System of 'Primary' and 'Derivative' Resources](#)

Carmine Bianchi

Bivona, E.

[Introducing System Dynamics in Small Entrepreneurial Firms — Some Critical Issues from a Field Analysis](#) (abstract only)

E. Bivona

Bivona, E.

The Rise and the Fall of the Subscribers in a Small Publishing Company — How can be Possible to Reach a Profitable and Sustainable pattern? (abstract only)

E. Bivona

Bivona, E.

The @Corp Case: Enhancing Co-operation Among Managers of Different Business Units

Vaidotas Sruogis, Pål I. Davidsen and Enzo Bivona

Blake, Mark

Optimising Workforce Structure the System Dynamics of Employment Planning

Keith T Linard, Mark Blake and David Paterson

Boscolo, Federica

S.D. Modelling in Support of Winery Management Accounting System

Habib Sedehi, Federica Boscolo and Nicola Vaccaro

Brady, Alison

Modelling Market Opportunities for Telecommunications in the 21st Century

Alison Brady, Ann Matthews and Frederic Lagacherie

Brocklesby, John

The Cognitive Limits on Organisational Reframing: A Systems Perspective Based on the Theory of Autopoiesis (plenary)

John Brocklesby and John Mingers

Brocklesby, John

[The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective](#) (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett

Brown, R. D.

[Dynamic Simulation of Smoking Control Environment in the USA 1990-2010](#) (abstract only)

R. D. Brown and F. J. Chaloupka

Brugnoli, Carlo

[System Thinking and Corporate Strategy](#)

Carlo Brugnoli

Buitrago, Carlos Alberto González

[System Dynamics applied to Modelling and Simulation of Foot-and-Mouth Disease Epidemiology](#)

Omaira Cecilia Lizarazo Herrera, Carlos Alberto González Buitrago, Hugo Hernando Andrade Sosa and Carlos Humberto García Castaño

Bunch, Paul R.

[An Aggregate Capacity Model of the Pharmaceutical Research and Development Process](#)

Paul R. Bunch and Denny Park

Byrne, S.

[Need an Environmental Interface in VSM? Ask Managers in Crises](#) (abstract only)

Q. Lu, S. Byrne and K. Maani

Byrne, Susan

[Emboldened to Continue: Further Explorations in Peer Partnership Learning: A Critical Systems Approach](#) (plenary)

Judith McMorland, Susan Byrne, Mark Feenstra and Tony Silvester-Clark

Byrne, Susan

[Tensions between Production and Engineering Units: A System Dynamics Model](#)

Qiang Lu, Kambiz Maani and Susan Byrne



Cakravastia, Andi

[Development of System Dynamic Model to Diagnose the Logistic Chain Performance of Shipbuilding Industry in Indonesia](#)

Andi Cakravastia and Lucia Diawati

Cameron, E. A.

[Towards a Model of Decision-Making of Flower Growing Systems](#)

J. L. Catley, E. M. Hurley, E. A. Cameron and A. J. Hall

Campbell, B. R.

[Getting to Implementation: Towards a System Dynamics Change Management Framework](#)

B. R. Campbell and G. M. McGrath

Campbell-Hunt, Colin

[The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective](#) (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett

Cao, G.

[Towards an Understanding of Systemicity: An Investigation into Systems Thinking](#) (abstract only)

G. Cao, S. Clarke and B. Lehaney

Capper, P.

[End Game: Dealing with Reality after the Simulation is Over](#) (abstract only)

P. Capper, B. Cavana, D. Packer and K. Wilson

Capper, P.

[Cultural Historical Activity Theory and Systems Thinking: A Marriage to be Arranged?](#) (abstract only)

P. Capper, B. Cavana, R. Hill and K. Wilson

Carranza, Octavio

[Merits of Different Formats for Learning and Implementing System Dynamics](#)

Octavio Carranza and Juan C. Rego

Cash, Michael

[The Cycle of Aroha: Modelling a Maori Inquiry System](#) (plenary)

Wayne Taurima and Michael Cash

Castaño, Carlos Humberto García

[System Dynamics applied to Modelling and Simulation of Foot-and-Mouth Disease Epidemiology](#)

Omaira Cecilia Lizarazo Herrera, Carlos Alberto González Buitrago, Hugo Hernando Andrade Sosa and Carlos Humberto García Castaño

Castaño, Yolanda Álvarez

[Medical Practice Variations. Reflections from the Complex Systems Perspective](#)

Rafael M^a. García Rodríguez, Begoña González-Busto Múgica and Yolanda Álvarez Castaño

Castaño, Yolanda Álvarez

[Dynamic Behavior of NPD](#)

Yolanda Álvarez Castaño

Catley, J. L.

[Towards a Model of Decision-Making of Flower Growing Systems](#)

J. L. Catley, E. M. Hurley, E. A. Cameron and A. J. Hall

Cavana, B.

[A Comprehensive Objective Performance Evaluation of the Accident Compensation Corporation of New Zealand's Main Branches](#) (abstract only)

M. Meimand, B. Cavana and R. Laking

Cavana, B.

[End Game: Dealing with Reality after the Simulation is Over](#) (abstract only)

P. Capper, B. Cavana, D. Packer and K. Wilson

Cavana, B.

[Cultural Historical Activity Theory and Systems Thinking: A Marriage to be Arranged?](#) (abstract only)

P. Capper, B. Cavana, R. Hill and K. Wilson

Cecchini, Arnaldo "Bibo"

[Cellular Automata: A Useful and Effective Tool for Reading, Interpreting, Describing, Forseeing the Behaviour of Urban Systems](#)

Arnaldo "Bibo" Cecchini and Enrico Rinaldi

Chaloupka, F. J.

[Dynamic Simulation of Smoking Control Environment in the USA 1990-2010](#) (abstract only)

R. D. Brown and F. J. Chaloupka

Chang, Wen-hsien

[Dynamic Modeling of Corporate Reputation Management Process](#)

Sy-Feng Wang, Wen-hsien Chang and Jen-shou Yang

Checkland, Peter

[Soft Systems Methodology: A 30-year Retrospective](#) (keynote)

Peter Checkland

Chen, Chia Ping

[A Method for Reconciling Dynamic Complex Conflicts among the Hierarchy of Objectives](#) (abstract only)

Showing H. Young and Chia Ping Chen

Chen, Chia Ping

[An Evolutionary Learning Method to Select Relevant Information through a System Dynamics Model](#) (abstract only)

Showing H. Young and Chia Ping Chen

Chen, Jin

[System Dynamic Modeling on the Capital Accumulation and Distribution in Enterprises](#)

Qingrui Xu, Yongyi Shou, Lifan Xu and Jin Chen

Choi, Nam Hee

[A System Dynamics Analysis of Electronic Commerce](#)

Jaeho Juhn, Won-Gyu Ha and Nam Hee Choi

Chong, Chee-Leong

[Applying Systems Thinking to a Strategic Simulation of Service Quality](#)

Chee-Leong Chong

Choudhari, Mark D.

[Addressing the Strategic Issues Around Training and Development Investments and Realized Benefits](#) (abstract only)

Mark D. Choudhari

Çirak, Korkut

[Dynamic Simulation for Strategic Insurance Management](#)

Yaman Barlas, Korkut Çirak and Ekrem Duman

Clare, Chris

[Some Issues in Building System Dynamics Models for improving the Resource Management Process in Higher Education](#)

Michael Kennedy and Chris Clare

Clarke, S.

[Towards an Understanding of Systemicity: An Investigation into Systems Thinking](#) (abstract only)

G. Cao, S. Clarke and B. Lehane

Cooper, M. A.

[Research Design for a Comparative Study of the COCOMO II Model and a Systems Cost Model](#)

G. A. Bell, M. A. Cooper, J. O. Jenkins and M. Kennedy

Cooper, Peter

[Beyond Reform to Performance Leadership in the Public Sector](#)

Russell Craig and Peter Cooper

Cooper, Peter

[Organising for Accountability in the New Zealand Department of Conservation](#)

Keith Johnston and Peter Cooper

Corbett, Laurie

[The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective](#) (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett

Coyle, Geoff

[The Validation of Commercial System Dynamics Models](#) (plenary)

Geoff Coyle and David Exelby

Coyle, Geoff

[Qualitative Modelling in System Dynamics or What are the Wise Limits of Quantification?](#) (keynote)

Geoff Coyle

Coyle, J. M.

[Development Of A Suite Of Operation and Support Cost Analysis Models \(OSCAM\) for the Defence Community](#) (abstract only)

J. M. Coyle, D. R. Exelby and M. Edge

Craig, Russell

[Beyond Reform to Performance Leadership in the Public Sector](#)

Russell Craig and Peter Cooper

Crespo, Adolfo

[Benefits of the Activity Based Costing \(ABC\) for SMEs: A System Dynamics Perspective](#) (abstract only)

Adolfo Crespo, José-María Sarriequi and Carmine Bianchi

Crespo-Márquez,

[Modelling and Simulation of a Production Line in an Automotive Company](#) (abstract only)

R. Riuz-Usano, J. M. Framiñán-Torres, M. A. Muñoz-Pérez, Crespo-Márquez and P. Moreu de León



Dangerfield, Brian C.

[Determination of the Treatment-free Aids Incubation Distribution Using a System Dynamics Optimisation Tool](#) (abstract only)

Brian C. Dangerfield

Danner, G. E.

[Strategic Value: Incorporating Real Options into System Dynamics Models](#) (abstract only)

G. E. Danner, K. E. Agatstein, D. E. Angelahis and O. Uhan

Daividsen, P. I.

[Dynamics of Electricity Supply and CO2 Emissions; A System Dynamics based Investigation of Pakistan's Case](#) (abstract only)

Qudrat-Ullah and P. I. Daividsen

Daividsen, Pål I.

[Learning in and About Simple Dynamic Systems](#) (plenary)

Pål I. Daividsen, J. Michael Spector and Marcelo Milrad

Daividsen, Pål I.

[The @Corp Case: Enhancing Co-operation Among Managers of Different Business Units](#)

Vaidotas Sruogis, Pål I. Daividsen and Enzo Bivona

Decena, Ma. Jilla Phoebe S.

[A System Dynamics Study on the Liberalization Plans of the Philippine Automotive Industry](#)

Ma. Jilla Phoebe S. Decena

DiStefano, J. M.

[An Abcedarian System Dynamics Handbook: Accessible, Brief, Clustered](#) (workshop)

J. M. DiStefano

Dias, J. Ferreira

[Limits on Sardine Catches and the Portuguese Processing Fish Industry. A System Dynamics Study](#)

J. Ferreira Dias, J. Cruz Filipe and J. Gonçalves Dias

Dias, J. Gonçalves

[Limits on Sardine Catches and the Portuguese Processing Fish Industry. A System Dynamics Study](#)

J. Ferreira Dias, J. Cruz Filipe and J. Gonçalves Dias

Diawati, L.

[The Impact of Delay Structure on System Performance](#) (abstract only)

L. Diawati and A. C. Raja

Diawati, Lucia

[Development of System Dynamic Model to Diagnose the Logistic Chain Performance of Shipbuilding Industry in Indonesia](#)

Andi Cakravastia and Lucia Diawati

Diker, Vedat G.

[David vs. Goliath: Responses to Domination Strategies in PC and Server OS Markets](#)

Vedat G. Diker and Jochen Scholl

Driver, John

[Towards a POSIT-ive Systemic Perspective of Strategic Management: A Natural Language Approach](#)

John Driver and Panos Louvieris

Duman, Ekrem

[Dynamic Simulation for Strategic Insurance Management](#)

Yaman Barlas, Korkut Çirak and Ekrem Duman

Dunford, Richard

[The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective](#) (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett



Edge, M.

[Development Of A Suite Of Operation and Support Cost Analysis Models \(OSCAM\) for the Defence Community](#) (abstract only)

J. M. Coyle, D. R. Exelby and M. Edge

Els, Sharon A.

[System Dynamics and Systems Thinking: It Takes All Kinds](#) (plenary)

Alan K. Graham and Sharon A. Els

Ercil, Y.

[Different Styles of Learning Organizations](#) (abstract only)

A. K. Varoglu, B. Atçi and Y. Ercil

Ewaldt, J. W.

[Trust and Distrust in Long-Term Business Relationships](#)

R. Schwarz and J. W. Ewaldt

Exelby, D. R.

[Development Of A Suite Of Operation and Support Cost Analysis Models \(OSCAM\) for the Defence Community](#) (abstract only)

J. M. Coyle, D. R. Exelby and M. Edge

Exelby, David

[The Validation of Commercial System Dynamics Models](#) (plenary)

Geoff Coyle and David Exelby



Faber, Jan

[Virtual Technology Assessment for Viable Policy Options: A System Dynamics Approach](#)

Jan Faber and Tom P. Alkim

Fang, Yulin

[Calm View On Knowledge Economy](#)

Qifan Wang and Yulin Fang

Feenstra, Mark

[Emboldened to Continue: Further Explorations in Peer Partnership Learning: A Critical Systems Approach](#) (plenary)

Judith McMorland, Susan Byrne, Mark Feenstra and Tony Silvester-Clark

Fett, Michael J

[Educating Senior Managers in Systems Concepts: Case Study of Public Health Policy Development](#)

Michael J Fett and Keith T Linard

Fett, Michael J

[Developing Simulation Dynamic Models of Breast Cancer Screening](#)

Michael J Fett

Filipe, J. Cruz

[Limits on Sardine Catches and the Portuguese Processing Fish Industry. A System Dynamics Study](#)

J. Ferreira Dias, J. Cruz Filipe and J. Gonçalves Dias

Fisher, D.

[Tools and Techniques for Starting a System Dynamics Program in Your School for Students in Grades 7 through 12](#) (workshop)

D. Fisher, R. Zaraza, Scott Guthrie and Tim Joy

Flood, Robert Louis

[No More Problems, Solutions, or Normal Organisational Life](#) (keynote)

Robert Louis Flood

Fokkema, Eppie

[The Effects of Strategic Workshops with Housing Associations](#) (abstract only)

Etiënne A. J. A. Rouwette, Hans H. J. J. van Kuppevelt, Eppie Fokkema and Rob Nijkamp

Fonteix, C.

[Performance Determination of a Single Cell Oil Process](#)

L. Muniglia, S. Papanikolaou, C. Fonteix and I. Marc

Fonteix, C.

[Identification and Confidence Region of Parameters in non Linear and Dynamical Systems](#)

S. Massebeuf, C. Fonteix, I. Marc and F. Pla

Fonteix, C.

[Decision Engineering of an Decyl-lactose Generation Chemical Laboratory Process Assisted by a Diploid Genetic Algorithm and a Multicriterion Aggregation Method](#)

S. Massebeuf, C. Fonteix, L. N. Kiss and I. Marc

Foote, Jeffrey L.

[Towards a Systemic Understanding of a Hospital Waiting List](#)

Jeffrey L. Foote, Don. J. Houston and Nicola H. North

Forrester, Nathan B.

[A Geographically Disaggregated Model of Urban Settlement Patterns](#) (abstract only)

Nathan B. Forrester

Forrester, Peter

[The Improvisational Music Group — A Human System Simulation](#) (workshop)

Peter Forrester and John Bailey

Framiñán-Torres, J. M.

[Modelling and Simulation of a Production Line in an Automotive Company](#) (abstract only)

R. Riuz-Usano, J. M. Framiñán-Torres, M. A. Muñoz-Pérez, Crespo-Márquez and P. Moreu de León

Frost-Kumpf, Lee

[Risk Assessment and Multiple Frames: A System Dynamics Policy Integration of the 1998 Springfield, Illinois Leptospirosis Outbreak](#) (abstract only)

Kevin O'Neill and Lee Frost-Kumpf

Fukunaga, Yoshi

[System Dynamics Analysis of Network Externality in Complex Market Structures, Part II: Basic Strategy for Re-entry and New Product Distribution](#) (abstract only)

Yoshi Fukunaga, Y. Takahashi, N. Tanaka, A. Uchino and M. Morita



Gala, Marta

[Competition in the Spanish Telecommunications Market: A Co-evolutionary, Differential Game Approach](#)

Marta Gala, Silvio Martínez Vicente, Francisco Gordillo and Ismael Alcalá y Javier Aracil

Galbraith, Peter L

[Universities as Learning Organisations — Or Not!](#)

Peter L Galbraith

Gandar, Philip

[Developing a Success Model for Income Support](#)

Philip Gandar and Miles Shephard

Georgantzas, Nicholas C.

[Designing High-leverage Strategies and Tactics](#)

Nicholas C. Georgantzas and James L. Ritchie-Dunham

Getmansky, M.

[The Impact of International Instabilities on USA Financial System](#) (abstract only)

M. Getmansky

Gill, R.

[Group Decision Making for Environmental Problems: The Virtual Learning Organisation](#) (abstract only)

J. Wolfenden and R. Gill

Gill, R. A.

[A System Dynamics Decision Support System for Holistically Orientated Government Policy Making in the Natural Resources Development Area](#) (abstract only)

R. A. Gill

Glass-Husain, W.

[Evaluating Oil & Gas Assets Through Simulation and Scenario Planning](#) (abstract only)

M. Vannan and W. Glass-Husain

Gopalan, K.

[Mental Model — Eastern Perspective](#)

K. Gopalan

Gordillo, Francisco

[Competition in the Spanish Telecommunications Market: A Co-evolutionary, Differential Game Approach](#)

Marta Gala, Silvio Martínez Vicente, Francisco Gordillo and Ismael Alcalá y Javier Aracil

Gordillo, Francisco

[A Case of Interaction between Systems Dynamics and Linear Programming: The Rapim-Pirenaica Model](#)

Silvio Martínez, Francisco Gordillo, Elena López and Ismael Alcalá

Graham, Alan

[Reorganization and Divestiture: Using System Dynamics to Navigate Perilous Waters](#) (abstract only)

Donna Mayo, Jonathan Pott and Alan Graham

Graham, Alan K.

[System Dynamics and Systems Thinking: It Takes All Kinds](#) (plenary)

Alan K. Graham and Sharon A. Els

Greiner, R.

[Systems Thinking in Tourism: Out-learning the Competitors](#) (abstract only)

P. Walker and R. Greiner

Grey, Colin

[Building and Conceptualising Generic Model Structures to address Fundamental Business Change](#)

Graham W. Winch, Daniel J. W. Arthur and Colin Grey

Gröbner, Andreas

[Constructing an Interactive Learning Environment \(ILE\) to Conduct Evaluation Experiments](#) (plenary)

Andreas Gröbner, Ingo Notzon and Aamir Shehzad

Gröbner, Andreas

[The Influence of Decision Time on Performance in Use of a Business Simulator](#)

Andreas Gröbner

Gröbler, Andreas

[Understanding Business Cycles in the Airline Market](#)

Martin Liehr, Andreas Gröbler and Martin Klein

Gunatunge, Sunil

[Composite Case Study Demonstrating the use of Soft Systems Methodology for Analysing Information Management](#)

Mark Campbell Williams and Sunil Gunatunge

Güneralp, B.

[Forming a Student Chapter of the System Dynamics Society](#) (plenary, abstract only)

O. Pala, B. Güneralp and E. Rouwette

Güneralp, Burak

[Modelling of a Wetland Through Sustainable Development](#)

Burak Güneralp and Yaman Barlas

Guthrie, S.

[Mini-Model Presentations: A Tool For Teaching Dynamics Systems Thinking](#) (abstract only)

S. Guthrie

Guthrie, Scott

[Episodic and Sustained Use of Systems in k-12 Classrooms — The Approach Fits the Goal](#) (abstract only)

Ron Zaraza, Timothy Joy and Scott Guthrie

Guthrie, Scott

Tools and Techniques for Starting a System Dynamics Program in Your School for Students in Grades 7 through 12 (workshop)

D. Fisher, R. Zaraza, Scott Guthrie and Tim Joy

Güven, Sibel

Strategic Analysis of and Scenario Planning for the Turkish Public Social Security System

Sibel Güven, Erol Sayin and Mustafa Akmaz

Gven, Çağlar

Operational Research from a Critical Viewpoint

Çağlar Gven



Ha, Won-Gyu

A System Dynamics Analysis of Electronic Commerce

Jaeho Juhn, Won-Gyu Ha and Nam Hee Choi

Hall, A. J.

Towards a Model of Decision-Making of Flower Growing Systems

J. L. Catley, E. M. Hurley, E. A. Cameron and A. J. Hall

Haslett, Tim

The Use of Group Modelling Techniques as a Teaching Tool (plenary)

Tim Haslett, John Barton and Rod Sarah

Haslett, Tim

[System Dynamics and Action Research in Aged Care](#)

Beverly Walker and Tim Haslett

Heeb, Johannes

[Planning Sustainable Mobility with the Stakeholders — A System Dynamics Approach](#)

Johannes Heeb, Corine Mauch, Mario Keller and Felix Huber

Heffernan, Mark

[The Practical Applications of System Dynamics to Identify System Specific Maintenance Strategies](#)

(abstract only)

John McLuckie, Mark Heffernan and Trevor Armstrong

Helme, Marion

[Organisational Participation and Being a Participant: Ships, Pirates and Crocodiles](#)

Marion Helme

Herrera, Omaira Cecilia Lizarazo

[System Dynamics applied to Modelling and Simulation of Foot-and-Mouth Disease Epidemiology](#)

Omaira Cecilia Lizarazo Herrera, Carlos Alberto González Buitrago, Hugo Hernando Andrade Sosa and Carlos Humberto García Castaño

Hidaka, Shoji

[System Dynamics: A New Tool for TQM](#)

Shoji Hidaka

Hill, R.

[Cultural Historical Activity Theory and Systems Thinking: A Marriage to be Arranged?](#) (abstract only)

P. Capper, B. Cavana, R. Hill and K. Wilson

Hill, Robyn

[Unlocking People Potential as the Key to a Dynamic Organisation](#)

Robyn Hill and Anne Younger

Honggang, Xu

[Environmental Performance for the Long Term Industrial Competitiveness: A System Dynamic Study of Chinese Cement Industry](#) (abstract only)

Xu Honggang and Steve Arquitts

Houston, Don. J.

[Towards a Systemic Understanding of a Hospital Waiting List](#)

Jeffrey L. Foote, Don. J. Houston and Nicola H. North

Howell, Bronwyn

[An Application of System Dynamics and Risk Management Techniques to School Bus Safety Policy](#)

Bronwyn Howell and Mark Obren

Hsiao, Naiyi

[In Search of Theories of Dynamic Decision Making: A Literature Review](#) (plenary)

Naiyi Hsiao and George P. Richardson

Hsiao, Naiyi

[Exploration of Outcome Feedback for Dynamic Decision Making](#)

Naiyi Hsiao

Hsiao, Rueylin

[Beyond Hard and Soft Modelling. An Social-scientific Application of System Dynamics](#) (abstract only)

Rueylin Hsiao

Hu, Gary

Steps in Conceptualizing a System for System Dynamics Model-Building: A Case Study of an Oil Refinery of a Petroleum Corporation

Lihlian Hwang and Gary Hu

Huber, Felix

Planning Sustainable Mobility with the Stakeholders — A System Dynamics Approach

Johannes Heeb, Corine Mauch, Mario Keller and Felix Huber

Hurley, E. M.

Towards a Model of Decision-Making of Flower Growing Systems

J. L. Catley, E. M. Hurley, E. A. Cameron and A. J. Hall

Hurley, Evelyn

Action Research as a Means of Enhancing Dairy Farmer Learning for Management

Claire Massey and Evelyn Hurley

Hutchinson, Bill

Information Warfare: Using the Viable System Model as a Framework to Attack Organisations

(plenary)

Bill Hutchinson and Mat Warren

Hwang, Lihlian

A Microworld Customized for an Oil Refinery of a Petroleum Corporation

Showing H. Young and Lihlian Hwang

Hwang, Lihlian

[Steps in Conceptualizing a System for System Dynamics Model-Building: A Case Study of an Oil Refinery of a Petroleum Corporation](#)

Lihlian Hwang and Gary Hu



Intrapairot, Arunee

[A System Dynamics Approach to the Diffusion of Intranet Banking: A Case Study From Thailand](#)

Arunee Intrapairot and Mohammed Quaddus



Jackson, B.

[A Soft Approach to Survey Design](#)

L. Weston, R. Whiddett and B. Jackson

Jackson, Finn

[Systems Thinking for the Next Millennium: The Future of the IT Services Industry](#)

Finn Jackson

James, Simon

[A Systems Rationale for an Evolutionary Epistemological Approach](#) (abstract only)

Simon James

Jenkins, J. O.

[Research Design for a Comparative Study of the COCOMO II Model and a Systems Cost Model](#)

G. A. Bell, M. A. Cooper, J. O. Jenkins and M. Kennedy

Johnston, Keith

[Organising for Accountability in the New Zealand Department of Conservation](#)

Keith Johnston and Peter Cooper

Johnstone, David

[Simulating Complex Non-linear Dynamic Systems in Marketing](#)

Peter November and David Johnstone

Jones, Deborah

[The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective](#) (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett

Joy, Tim

[Tools and Techniques for Starting a System Dynamics Program in Your School for Students in Grades 7 through 12](#) (workshop)

D. Fisher, R. Zaraza, Scott Guthrie and Tim Joy

Joy, Timothy

[Episodic and Sustained Use of Systems in k-12 Classrooms — The Approach Fits the Goal](#) (abstract only)

Ron Zaraza, Timothy Joy and Scott Guthrie

Joy, Timothy

[Teaching our Children Well: What Oregon Teachers Have Learned After Six Years of System Dynamics Instruction at the K-12 Level](#) (abstract only)

Timothy Joy

Juhn, Jaeho

[A System Dynamics Analysis of Electronic Commerce](#)

Jaeho Juhn, Won-Gyu Ha and Nam Hee Choi



Kameyama, Saburo

[Government Reform in Japan — An Application of SD National Model based on SNA](#)

Saburo Kameyama, Hidenori Kobayshi and Toru Suetake

Kanar, Korhan

[Structure-oriented Behavior Tests in Model Validation](#) (plenary)

Yaman Barlas and Korhan Kanar

Kanshik, A.

[A Systems View of the Drivers of IT Investment for a Firm](#) (abstract only)

A. Kanshik, A. Swaroop and R. Roy

Keller, Mario

[Planning Sustainable Mobility with the Stakeholders — A System Dynamics Approach](#)

Johannes Heeb, Corine Mauch, Mario Keller and Felix Huber

Kennedy, M.

[Research Design for a Comparative Study of the COCOMO II Model and a Systems Cost Model](#)

G. A. Bell, M. A. Cooper, J. O. Jenkins and M. Kennedy

Kennedy, Michael

[Some Issues in Building System Dynamics Models designed to Improve the Information Systems Investment Appraisal Process](#)

Michael Kennedy

Kennedy, Michael

[Some Issues in Building System Dynamics Models for improving the Resource Management Process in Higher Education](#)

Michael Kennedy and Chris Clare

Kennedy, Michael

[Component-Based Modelling and Simulation: A Case for Simulation Software Architecture](#)

Ddembe Williams and Michael Kennedy

Kim, Doa Hoon

[Effect of Time Delay on Model Behavior and its Implication for Electronic Transactions in Cyber Space](#)

Taehoon Moon, Dong Hwan Kim and Doa Hoon Kim

Kim, Dong Hwan

[Effect of Time Delay on Model Behavior and its Implication for Electronic Transactions in Cyber Space](#)

Taehoon Moon, Dong Hwan Kim and Doa Hoon Kim

Kim, Dong-Hwan

[Systems Thinking in the Management of Korean Economic Crisis](#)

Dong-Hwan Kim

Kiss, L. N.

[Decision Engineering of an Decyl-lactose Generation Chemical Laboratory Process Assisted by a Diploid Genetic Algorithm and a Multicriterion Aggregation Method](#)

S. Massebeuf, C. Fonteix, L. N. Kiss and I. Marc

Kiss, Laszlo Nandor

[Multicriterion Analysis Aided Project Rankings under Payoutflows Homogenization Constraint in Transport Infrastructural Investment](#)

Laszlo Nandor Kiss

Kleijnen, Jack P. C.

[Validation in Soft OR, Hard OR and System Dynamics: A Critical Comparison and Contribution to the Debate](#)

Özge Pala, Jac A. M. Vennix and Jack P. C. Kleijnen

Klein, Martin

[Understanding Business Cycles in the Airline Market](#)

Martin Liehr, Andreas Größler and Martin Klein

Kljajić, Mirosljub

[System Dynamics and Decision Support in Complex Systems](#)

Mirosljub Kljajić, Andrej Škraba and Igor Bernik

Kobayshi, Hidenori

[Government Reform in Japan — An Application of SD National Model based on SNA](#)

Saburo Kameyama, Hidenori Kobayshi and Toru Suetake

Kubanek, Gordon

[Systems Thinking in High Schools for 2100](#) (workshop)

Gordon Kubanek

Kummerow, Max

[Designing and Testing Policies to Prevent Office Building Oversupply Cycles](#)

Max Kummerow

Kuppevelt, Hans H. J. J. van

[The Effects of Strategic Workshops with Housing Associations](#) (abstract only)

Etiënne A. J. A. Rouwette, Hans H. J. J. van Kuppevelt, Eppie Fokkema and Rob Nijkamp



Lagacherie, Frederic

[Modelling Customer Behaviour in a Competitive Environment](#)

Ahmed Mohamed and Frederic Lagacherie

Lagacherie, Frederic

[Modelling Market Opportunities for Telecommunications in the 21st Century](#)

Alison Brady, Ann Matthews and Frederic Lagacherie

Lagacherie, Frederic

[Internet Futures: Growing Market Intelligence to Allow Telecoms Operators to Seize the Opportunities of the Information Age](#)

Frederic Lagacherie

Laking, R.

[A Comprehensive Objective Performance Evaluation of the Accident Compensation Corporation of New Zealand's Main Branches](#) (abstract only)

M. Meimand, B. Cavana and R. Laking

Lang, Karl R.

[A Taoist Foundation of Systems Modeling and Thinking](#)

Karl R. Lang and Jing Lydia Zhang

Lawler, K.

[Modelling Free Trade Zones and Strategic Trade Policy](#)

A. O. Moscardini, K. Lawler and M. Loutfi

Lawler, K.

[Using System Dynamic's Methodology to Teach Macroeconomics](#)

A. O. Moscardini, K. Lawler and M. Loutfi

Laws, Kevin

[Schools, Organisational Learning and the Use of 'Scenario Analysis': Some Research Results](#) (plenary)

Kevin Laws and Robert McLeod

León, P. Moreu de

[Modelling and Simulation of a Production Line in an Automotive Company](#) (abstract only)

R. Riuz-Usano, J. M. Framiñán-Torres, M. A. Muñoz-Pérez, Crespo-Márquez and P. Moreu de León

Lehaney, B.

[Towards an Understanding of Systemicity: An Investigation into Systems Thinking](#) (abstract only)

G. Cao, S. Clarke and B. Lehaney

Liehr, Martin

[Understanding Business Cycles in the Airline Market](#)

Martin Liehr, Andreas Größler and Martin Klein

Linard, Keith T

[Towards a Dynamic Feedback Framework for Public Sector Performance Management](#)

Phil Sloper, Keith T Linard and David Paterson

Linard, Keith T

[Educating Senior Managers in Systems Concepts: Case Study of Public Health Policy Development](#)

Michael J Fett and Keith T Linard

Linard, Keith T

[Optimising Workforce Structure the System Dynamics of Employment Planning](#)

Keith T Linard, Mark Blake and David Paterson

Lo, Shih Hui

[A System Dynamics Model of Technological Innovation with Integration of Adoption Dynamics, Strategic Interaction and Network Externality](#) (abstract only)

Showing H. Young and Shih Hui Lo

Loutfi, M.

[Modelling Free Trade Zones and Strategic Trade Policy](#)

A. O. Moscardini, K. Lawler and M. Loutfi

Loutfi, M.

[Using System Dynamic's Methodology to Teach Macroeconomics](#)

A. O. Moscardini, K. Lawler and M. Loutfi

Louvieris, Panos

[Towards a POSIT-ive Systemic Perspective of Strategic Management: A Natural Language Approach](#)

John Driver and Panos Louvieris

Love, Peter

[Development of a Model for Quality to Enhance Organisational Learning](#)

Kamlesh Shah, Purnendu Mandal and Peter Love

Lu, Q.

[Need an Environmental Interface in VSM? Ask Managers in Crises](#) (abstract only)

Q. Lu, S. Byrne and K. Maani

Lu, Qiang

[Tensions between Production and Engineering Units: A System Dynamics Model](#)

Qiang Lu, Kambiz Maani and Susan Byrne

López, Elena

[A Case of Interaction between Systems Dynamics and Linear Programming: The Rapim-Pirenaica Model](#)

Silvio Martínez, Francisco Gordillo, Elena López and Ismael Alcalá



Maani, K.

[Need an Environmental Interface in VSM? Ask Managers in Crises](#) (abstract only)

Q. Lu, S. Byrne and K. Maani

Maani, Kambiz

[Tensions between Production and Engineering Units: A System Dynamics Model](#)

Qiang Lu, Kambiz Maani and Susan Byrne

Mabin, V.

[Use of Electronic Meeting Support Systems](#) (workshop, abstract only)

M. Menzies and V. Mabin

Mabin, Victoria

[Goldratt's "Theory of Constraints" Thinking Processes: A Systems Methodology linking Soft with Hard](#)

Victoria Mabin

Madrid, Conrado Garcia

[Applying System-Wide Discovery Analysis to the Market Growth Model](#)

Annabel Membrillo, James L. Ritchie-Dunham and Conrado Garcia Madrid

Madsen, Henning

Sustainable Development and Sustainable Growth: Conceptual Plain or Points on a Conceptual Plain?

John P. Ulhoi and Henning Madsen

Malpass, Paul

System Dynamics Modelling and its Role in Policy Development and Implementation Within the New Zealand Health Sector

David Rees and Paul Malpass

Mandal, Purnendu

Education Technologies in System Dynamics Teaching (plenary)

Purnendu Mandal and K. K. Wong

Mandal, Purnendu

Development of a Model for Quality to Enhance Organisational Learning

Kamlesh Shah, Purnendu Mandal and Peter Love

Mann, Martin

The Relationship of Human Performance to Business Performance in a Call Center Environment (abstract only)

Martin Mann

Marc, I.

Performance Determination of a Single Cell Oil Process

L. Muniglia, S. Papanikolaou, C. Fonteix and I. Marc

Marc, I.

Identification and Confidence Region of Parameters in non Linear and Dynamical Systems

S. Massebeuf, C. Fonteix, I. Marc and F. Pla

Marc, I.

Decision Engineering of an Decyl-lactose Generation Chemical Laboratory Process Assisted by a Diploid Genetic Algorithm and a Multicriterion Aggregation Method

S. Massebeuf, C. Fonteix, L. N. Kiss and I. Marc

Marg, K. S. Krishnan

Causality and Validation of System Dynamics Models incorporating Soft Variables: Establishing an Interface with Structural Equation Modelling (abstract only)

Santanu Roy, K. S. Krishnan Marg and Pratap K. J. Mohapatra

Marrone, Gianliborio

The Green World Management Flight Simulator

Gianliborio Marrone, Vaidotas Sruogis and Miao Zhiqi

Martin, Andrew

Validation of a Simulation of Information Systems Development Project Management

Andrew Martin

Martínez, Silvio

A Case of Interaction between Systems Dynamics and Linear Programming: The Rapim-Pirenaica Model

Silvio Martínez, Francisco Gordillo, Elena López and Ismael Alcalá

Martino, Angelo

[ASTRA: Assessment of Transport Strategies](#)

Wolfgang Schade, Angelo Martino and Michele Roda

Maru, Yiheyis Taddele

[Enhancing Emancipatory Systems Methodologies within a Pluralistic Critical Systems Framework for Sustainable Development](#)

Yiheyis Taddele Maru and Keith Woodford

Massebeuf, S.

[Identification and Confidence Region of Parameters in non Linear and Dynamical Systems](#)

S. Massebeuf, C. Fonteix, I. Marc and F. Pla

Massebeuf, S.

[Decision Engineering of an Decyl-lactose Generation Chemical Laboratory Process Assisted by a Diploid Genetic Algorithm and a Multicriterion Aggregation Method](#)

S. Massebeuf, C. Fonteix, L. N. Kiss and I. Marc

Massey, Claire

[Action Research as a Means of Enhancing Dairy Farmer Learning for Management](#)

Claire Massey and Evelyn Hurley

Matthews, Ann

[Development of a Management Flight Simulator to Enable the Strategic Planning and Targeting of Telecommunications Networks Resources and Services to the Most Profitable Customers](#)

Ann Matthews and Jo Osborne

Matthews, Ann

[Modelling Market Opportunities for Telecommunications in the 21st Century](#)

Alison Brady, Ann Matthews and Frederic Lagacherie

Mauch, Corine

[Planning Sustainable Mobility with the Stakeholders — A System Dynamics Approach](#)

Johannes Heeb, Corine Mauch, Mario Keller and Felix Huber

Mayo, Donna

[Reorganization and Divestiture: Using System Dynamics to Navigate Perilous Waters](#) (abstract only)

Donna Mayo, Jonathan Pott and Alan Graham

McGrath, G. M.

[Getting to Implementation: Towards a System Dynamics Change Management Framework](#)

B. R. Campbell and G. M. McGrath

McLeod, Robert

[Schools, Organisational Learning and the Use of 'Scenario Analysis': Some Research Results](#)

(plenary)

Kevin Laws and Robert McLeod

McLuckie, John

[The Practical Applications of System Dynamics to Identify System Specific Maintenance Strategies](#)

(abstract only)

John McLuckie, Mark Heffernan and Trevor Armstrong

McMorland, Judith

[Emboldened to Continue: Further Explorations in Peer Partnership Learning: A Critical Systems Approach](#) (plenary)

Judith McMorland, Susan Byrne, Mark Feenstra and Tony Silvester-Clark

Meimand, M.

[A Comprehensive Objective Performance Evaluation of the Accident Compensation Corporation of New Zealand's Main Branches](#) (abstract only)

M. Meimand, B. Cavana and R. Laking

Melhuish, J.

[Dynamics of the Human Body Clock](#) (abstract only)

D. W. Peterson and J. Melhuish

Membrillo, Annabel

[Applying System-Wide Discovery Analysis to the Market Growth Model](#)

Annabel Membrillo, James L. Ritchie-Dunham and Conrado Garcia Madrid

Menzies, M.

[Use of Electronic Meeting Support Systems](#) (workshop, abstract only)

M. Menzies and V. Mabin

Milling, P. M.

[Simulating Different Decision Rules and Market Demands: New Insights into the Beer Game](#) (abstract only)

P. M. Milling

Milrad, Marcelo

[Learning in and About Simple Dynamic Systems](#) (plenary)

Pål I. Davidsen, J. Michael Spector and Marcelo Milrad

Mingers, John

[The Cognitive Limits on Organisational Reframing: A Systems Perspective Based on the Theory of Autopoiesis](#) (plenary)

John Brocklesby and John Mingers

Mohamed, Ahmed

[Modelling Customer Behaviour in a Competitive Environment](#)

Ahmed Mohamed and Frederic Lagacherie

Mohapatra, P. K. J.

[A Method for Estimating Order of System Dynamics Delays](#) (abstract only)

Rahul Roy and P. K. J. Mohapatra

Mohapatra, Pratap K. J.

[Causality and Validation of System Dynamics Models incorporating Soft Variables: Establishing an Interface with Structural Equation Modelling](#) (abstract only)

Santanu Roy, K. S. Krishnan Marg and Pratap K. J. Mohapatra

Mojtahedzadeh, M.

[A Causal-Behavioral Map of the Predator-prey Oscillatory System using Pathway Participation Metrics](#) (abstract only)

M. Mojtahedzadeh

Mollona, Edoardo

[A System Dynamics Approach to the Analysis of the Intra-organisational Ecology Theory](#)

Edoardo Mollona

Moon, Taehoon

[Effect of Time Delay on Model Behavior and its Implication for Electronic Transactions in Cyber Space](#)

Taehoon Moon, Dong Hwan Kim and Doa Hoon Kim

Morita, M.

[System Dynamics Analysis of Network Externality in Complex Market Structures, Part II: Basic Strategy for Re-entry and New Product Distribution](#) (abstract only)

Yoshi Fukunaga, Y. Takahashi, N. Tanaka, A. Uchino and M. Morita

Moscardini, A. O.

[Modelling Free Trade Zones and Strategic Trade Policy](#)

A. O. Moscardini, K. Lawler and M. Loutfi

Moscardini, A. O.

[Using System Dynamic's Methodology to Teach Macroeconomics](#)

A. O. Moscardini, K. Lawler and M. Loutfi

Música, Begoña González-Busto

[Medical Practice Variations. Reflections from the Complex Systems Perspective](#)

Rafael M^a. García Rodríguez, Begoña González-Busto Música and Yolanda Álvarez Castaño

Muñoz-Pérez, M. A.

[Modelling and Simulation of a Production Line in an Automotive Company](#) (abstract only)

R. Riuz-Usano, J. M. Framiñán-Torres, M. A. Muñoz-Pérez, Crespo-Márquez and P. Moreu de León

Mullekom, Theo van

[Group Model Building: A Review of Assessment Studies](#) (plenary)

Etiënne A. J. A. Rouwette, Jac A. M. Vennix and Theo van Mullekom

Muniglia, L.

[Performance Determination of a Single Cell Oil Process](#)

L. Muniglia, S. Papanikolaou, C. Fonteix and I. Marc

Myrtveit, Magne

[Designing a Rational Process for Risk-taking](#)

Mohamed Saleh and Magne Myrtveit



Nasir, Jamal

[A Generic Model of Infrastructure Maintenance Management](#) (abstract only)

Jamal Nasir

Newman, Peter

[Using a Systems Approach to Unravel Feedback Mechanisms Affecting Urban Transport Choices](#)

Mark Bachelts, John Peet and Peter Newman

Nijkamp, Rob

[The Effects of Strategic Workshops with Housing Associations](#) (abstract only)

Etiënne A. J. A. Rouwette, Hans H. J. J. van Kuppevelt, Eppie Fokkema and Rob Nijkamp

North, Nicola H.

[Towards a Systemic Understanding of a Hospital Waiting List](#)

Jeffrey L. Foote, Don. J. Houston and Nicola H. North

Norvaisas, S.

[The Future of System Dynamics in Post Soviet Countries: Lithuanian Case](#) (abstract only)

S. Norvaisas

Notzon, Ingo

[Constructing an Interactive Learning Environment \(ILE\) to Conduct Evaluation Experiments](#)

(plenary)

Andreas Größler, Ingo Notzon and Aamir Shehzad

November, Peter

[Simulating Complex Non-linear Dynamic Systems in Marketing](#)

Peter November and David Johnstone



Obren, Mark

[An Application of System Dynamics and Risk Management Techniques to School Bus Safety Policy](#)

Bronwyn Howell and Mark Obren

O'Neill, Kevin

[Risk Assessment and Multiple Frames: A System Dynamics Policy Integration of the 1998
Springfield, Illinois Leptospirosis Outbreak](#) (abstract only)

Kevin O'Neill and Lee Frost-Kumpf

Osborne, Jo

[Development of a Management Flight Simulator to Enable the Strategic Planning and Targeting of
Telecommunications Networks Resources and Services to the Most Profitable Customers](#)

Ann Matthews and Jo Osborne

Osborne, Jo

[Dynamic Modelling to Assist in the Understanding of Consumer Take-up and the Diffusion of New
Telecommunications Services](#)

Jo Osborne

Osborne, Jo

[A Dynamic Model for Understanding Individual's Interactive and Communications Requirements in a
Telecoms Environment](#)

Jo Osborne



Packer, D.

[End Game: Dealing with Reality after the Simulation is Over](#) (abstract only)

P. Capper, B. Cavana, D. Packer and K. Wilson

Pala, O.

[Forming a Student Chapter of the System Dynamics Society](#) (plenary, abstract only)

O. Pala, B. Guneralp and E. Rouwette

Pala, Özge

[Validation in Soft OR, Hard OR and System Dynamics: A Critical Comparison and Contribution to the Debate](#)

Özge Pala, Jac A. M. Vennix and Jack P. C. Kleijnen

Papanikolaou, S.

[Performance Determination of a Single Cell Oil Process](#)

L. Muniglia, S. Papanikolaou, C. Fonteix and I. Marc

Park, Denny

[An Aggregate Capacity Model of the Pharmaceutical Research and Development Process](#)

Paul R. Bunch and Denny Park

Paterson, David

[Towards a Dynamic Feedback Framework for Public Sector Performance Management](#)

Phil Sloper, Keith T Linard and David Paterson

Paterson, David

[Optimising Workforce Structure the System Dynamics of Employment Planning](#)

Keith T Linard, Mark Blake and David Paterson

Peet, John

[Using a Systems Approach to Unravel Feedback Mechanisms Affecting Urban Transport Choices](#)

Mark Bachelis, John Peet and Peter Newman

Peet, John

[Systems and Ethics: Thinking about Human Needs and Sustainability for the Next Millennium](#)

John Peet

Pereira, Javier

[Flexibility in Manufacturing Processes: A Relational, Dynamic and Multidimensional Approach](#)

Javier Pereira

Petersen, Lars Odd

[A Change in General Practitioners' Daily Behaviour Finances Healthcare Development](#)

Lars Odd Petersen

Peterson, D. W.

[Dynamics of the Human Body Clock](#) (abstract only)

D. W. Peterson and J. Melhuish

Pla, F.

[Identification and Confidence Region of Parameters in non Linear and Dynamical Systems](#)

S. Massebeuf, C. Fonteix, I. Marc and F. Pla

Pott, Jonathan

[Reorganization and Divestiture: Using System Dynamics to Navigate Perilous Waters](#) (abstract only)

Donna Mayo, Jonathan Pott and Alan Graham



Qingrui, Xu

[System Dynamics Model on Harmonious Development of Chinese Science & Technology, Education and Economy under High Technology](#)

Xu Qingrui and Fan Baoqun

Quaddus, Mohammed

[A System Dynamics Approach to the Diffusion of Intranet Banking: A Case Study From Thailand](#)

Arunee Intrapairot and Mohammed Quaddus

Qudrat-Ullah,

[Dynamics of Electricity Supply and CO2 Emissions; A System Dynamics based Investigation of Pakistan's Case](#) (abstract only)

Qudrat-Ullah and P. I. Davidsen



Rahman, Shams-ur

[Linking 'Soft' With 'Hard': A Case of Health System Planning in a Developing Country](#)

Shams-ur Rahman and David K Smith

Raja, A. C.

[The Impact of Delay Structure on System Performance](#) (abstract only)

L. Diawati and A. C. Raja

Ramsey, Philip L.

[Countering Cultural Polarities](#) (workshop)

Philip L. Ramsey

Rees, David

[System Dynamics Modelling and its Role in Policy Development and Implementation Within the New Zealand Health Sector](#)

David Rees and Paul Malpass

Rego, Juan C.

[Merits of Different Formats for Learning and Implementing System Dynamics](#)

Octavio Carranza and Juan C. Rego

Rego, Juan C.

[After 40 Years, has System Dynamics Changed?](#)

Juan C. Rego

Richardson, George P.

[In Search of Theories of Dynamic Decision Making: A Literature Review](#) (plenary)

Naiyi Hsiao and George P. Richardson

Rinaldi, Enrico

[Cellular Automata: A Useful and Effective Tool for Reading, Interpreting, Describing, Forseeing the Behaviour of Urban Systems](#)

Arnaldo "Bibo" Cecchini and Enrico Rinaldi

Ritchie-Dunham, James L.

[Applying System-Wide Discovery Analysis to the Market Growth Model](#)

Annabel Membrillo, James L. Ritchie-Dunham and Conrado Garcia Madrid

Ritchie-Dunham, James L.

[Designing High-leverage Strategies and Tactics](#)

Nicholas C. Georgantzas and James L. Ritchie-Dunham

Riuz-Usano, R.

[Modelling and Simulation of a Production Line in an Automotive Company](#) (abstract only)

R. Riuz-Usano, J. M. Framiñán-Torres, M. A. Muñoz-Pérez, Crespo-Márquez and P. Moreu de León

Roda, Michele

[ASTRA: Assessment of Transport Strategies](#)

Wolfgang Schade, Angelo Martino and Michele Roda

Rodrigues, Alexandre G.

[SYDPIM Integration of SD and PERT/CPM Tools: Assessing Fagan Analysis in a Large-scale Software Project](#)

Alexandre G. Rodrigues

Rodríguez, Rafael M^a. García

[Medical Practice Variations. Reflections from the Complex Systems Perspective](#)

Rafael M^a. García Rodríguez, Begoña González-Busto Múgica and Yolanda Álvarez Castaño

Rosensteel, Douglas R.

[Harnessing the Natural Energy of Organizational Discontent](#) (abstract only)

Douglas R. Rosensteel

Rouvette, E.

[Forming a Student Chapter of the System Dynamics Society](#) (plenary, abstract only)

O. Pala, B. Guneralp and E. Rouvette

Rouvette, Étienne A. J. A.

[Group Model Building: A Review of Assessment Studies](#) (plenary)

Étienne A. J. A. Rouvette, Jac A. M. Vennix and Theo van Mullekom

Rouvette, Étienne A. J. A.

[The Effects of Strategic Workshops with Housing Associations](#) (abstract only)

Étienne A. J. A. Rouvette, Hans H. J. J. van Kuppevelt, Eppie Fokkema and Rob Nijkamp

Rowland, Chris J.

[The Role of Change Agents in an IT Services Corporation: A Systems Approach to Developing a Strategy for Improvement](#)

Chris J. Rowland

Roy, R.

[A Systems View of the Drivers of IT Investment for a Firm](#) (abstract only)

A. Kanshik, A. Swaroop and R. Roy

Roy, Rahul

[A Method for Estimating Order of System Dynamics Delays](#) (abstract only)

Rahul Roy and P. K. J. Mohapatra

Roy, Santanu

[Causality and Validation of System Dynamics Models incorporating Soft Variables: Establishing an Interface with Structural Equation Modelling](#) (abstract only)

Santanu Roy, K. S. Krishnan Marg and Pratap K. J. Mohapatra

Ryzhenkov, Alexander V.

[A Period — Stability Trade-off in a Model of the Kondratiev Cycle](#)

Alexander V. Ryzhenkov



Sacco, Francesco

[Dynamics of Knowledge Accumulations the Example of the Management Consulting Industry](#)

(abstract only)

Francesco Sacco

Sahai, Anil Kumar

[Learning From Evolution: A Study of Acer's Corporate Strategy](#)

Anil Kumar Sahai

Saleh, Mohamed

[Designing a Rational Process for Risk-taking](#)

Mohamed Saleh and Magne Myrtveit

Salner, Marcia

[Beyond Checkland & Scholes: Improving SSM \(plenary\)](#)

Marcia Salner

Sankarakrishnan, R.

[To Privatize or Not to Privatize, That is the Question — Should Outsourcing be a Guiding Idea for Your Organization — The New Zealand Story \(abstract only\)](#)

R. Sankarakrishnan

Sarah, Rod

[The Use of Group Modelling Techniques as a Teaching Tool](#) (plenary)

Tim Haslett, John Barton and Rod Sarah

Sarriequi, José-María

[Benefits of the Activity Based Costing \(ABC\) for SMEs: A System Dynamics Perspective](#) (abstract only)

Adolfo Crespo, José-María Sarriequi and Carmine Bianchi

Sayin, Erol

[Strategic Analysis of and Scenario Planning for the Turkish Public Social Security System](#)

Sibel Güven, Erol Sayin and Mustafa Akmaz

Schade, Wolfgang

[ASTRA: Assessment of Transport Strategies](#)

Wolfgang Schade, Angelo Martino and Michele Roda

Schaffernicht, Martin

[Managing Improvement Amongst Autonomous Actors with OMCA: The Case of the Chilean Educational Reform](#)

Martin Schaffernicht

Schaffernicht, Martin

[Facilitating Students' Perception of Systemic Concepts through "Systemic Exploratories"](#)

Martin Schaffernicht

Schoeneborn, Frank

[How Managerial Incentive Systems Influence the Company's Business Performance — A System Dynamics Model and its Results](#)

Frank Schoeneborn

Scholl, Jochen

[David vs. Goliath: Responses to Domination Strategies in PC and Server OS Markets](#)

Vedat G. Diker and Jochen Scholl

Schwarz, R.

[Trust and Distrust in Long-Term Business Relationships](#)

R. Schwarz and J. W. Ewaldt

Sedehi, Habib

[S.D. Modelling in Support of Winery Management Accounting System](#)

Habib Sedehi, Federica Boscolo and Nicola Vaccaro

Sedehi, Habib

[An Attempt to Define an Evaluation Methodology and a Quantitative Metric System Aiming to Evaluate the Corporate Shareholder "True Value" Using SD Modelling](#)

Habib Sedehi and Nicola Vaccaro

Sepulveda-Haugen, Jorge

[JuliusProcess, Towards an Alternative for Systemic Integration for the Strategic Consultancy Process](#)

Jorge Sepulveda-Haugen and Eduardo Testart-Tobar

Shah, Kamlesh

[Development of a Model for Quality to Enhance Organisational Learning](#)

Kamlesh Shah, Purnendu Mandal and Peter Love

Shehzad, Aamir

[Constructing an Interactive Learning Environment \(ILE\) to Conduct Evaluation Experiments](#)

(plenary)

Andreas Größler, Ingo Notzon and Aamir Shehzad

Shepherd, Miles

[Developing a Success Model for Income Support](#)

Philip Gandar and Miles Shepherd

Shi, Ling

[Integration of SD and GIS for Land Use Planning: A Case Study of an Urbanizing Area in China](#)

(abstract only)

Ling Shi

Shields, Michelle

[Comparing the Effects of Conceptualization, Simulation and Facilitation on Mental Model Development in a Group Setting: An Experimental Investigation Utilizing Case Study and Management Flight Simulator Approaches](#)

Michelle Shields

Shimazaki, M.

[A Concept for Organizational Decision Support Using Structure Matrix](#) (abstract only)

T. Sumita, M. Shimazaki and T. Toyama

Shou, Yongyi

[System Dynamic Modeling on the Capital Accumulation and Distribution in Enterprises](#)

Qingrui Xu, Yongyi Shou, Lifen Xu and Jin Chen

Showing, Young

[Organizational Learning as a Feedback System](#)

Young Showing, Tu Yi-Ming and Ya-Tsai Tseng

Silvester-Clark, Tony

[Emboldened to Continue: Further Explorations in Peer Partnership Learning: A Critical Systems Approach](#) (plenary)

Judith McMorland, Susan Byrne, Mark Feenstra and Tony Silvester-Clark

Škraba, Andrej

[System Dynamics and Decision Support in Complex Systems](#)

Miroљjub Kljajić, Andrej Škraba and Igor Bernik

Sloper, Phil

[Towards a Dynamic Feedback Framework for Public Sector Performance Management](#)

Phil Sloper, Keith T Linard and David Paterson

Smith, David K

[Linking 'Soft' With 'Hard': A Case of Health System Planning in a Developing Country](#)

Shams-ur Rahman and David K Smith

Smits, Cyprian A.

[Strategic Planning in the Dutch Telecommunications Industry](#)

Cyprian A. Smits

Sosa, Hugo Hernando Andrade

[System Dynamics applied to Modelling and Simulation of Foot-and-Mouth Disease Epidemiology](#)

Omaira Cecilia Lizarazo Herrera, Carlos Alberto González Buitrago, Hugo Hernando Andrade Sosa and Carlos Humberto García Castaño

Spector, J. Michael

[Learning in and About Simple Dynamic Systems](#) (plenary)

Pål I. Davidsen, J. Michael Spector and Marcelo Milrad

Sruogis, Vaidotas

[The Green World Management Flight Simulator](#)

Gianliborio Marrone, Vaidotas Sruogis and Miao Zhiqi

Sruogis, Vaidotas

[The @Corp Case: Enhancing Co-operation Among Managers of Different Business Units](#)

Vaidotas Sruogis, Pål I. Davidsen and Enzo Bivona

Stevenson, Richard W

[Value Chain Dynamics: Applying System Dynamics to Support Value Thinking](#) (plenary)

Richard W Stevenson and Eric F Wolstenholme

Suetake, Toru

[Government Reform in Japan — An Application of SD National Model based on SNA](#)

Saburo Kameyama, Hidenori Kobayshi and Toru Suetake

Sumita, T.

[A Concept for Organizational Decision Support Using Structure Matrix](#) (abstract only)

T. Sumita, M. Shimazaki and T. Toyama

Swaroop, A.

[A Systems View of the Drivers of IT Investment for a Firm](#) (abstract only)

A. Kanshik, A. Swaroop and R. Roy

Sweetser, Al

[A Comparison of System Dynamics \(SD\) and Discrete Event Simulation \(DES\)](#)

Al Sweetser

Szulanski, Fabián H.

[SD and Prospective: A Marriage of Convenience](#)

Fabián H. Szulanski



Takahashi, Y.

[System Dynamics Analysis of Network Externality in Complex Market Structures, Part II: Basic Strategy for Re-entry and New Product Distribution](#) (abstract only)

Yoshi Fukunaga, Y. Takahashi, N. Tanaka, A. Uchino and M. Morita

Tanaka, N.

[System Dynamics Analysis of Network Externality in Complex Market Structures, Part II: Basic Strategy for Re-entry and New Product Distribution](#) (abstract only)

Yoshi Fukunaga, Y. Takahashi, N. Tanaka, A. Uchino and M. Morita

Taurima, Wayne

[The Cycle of Aroha: Modelling a Maori Inquiry System](#) (plenary)

Wayne Taurima and Michael Cash

Testart-Tobar, Eduardo

[JuliusProcess, Towards an Alternative for Systemic Integration for the Strategic Consultancy Process](#)

Jorge Sepulveda-Haugen and Eduardo Testart-Tobar

Tignor, Warren W.

[System Dynamics Models and the Object-Oriented Paradigm](#)

Warren W. Tignor

Topp, Warren

[A Systems Approach to Knowledge Creation](#)

Warren Topp

Toyama, T.

[A Concept for Organizational Decision Support Using Structure Matrix](#) (abstract only)

T. Sumita, M. Shimazaki and T. Toyama

Tseng, Ya-Tsai

[Organizational Learning as a Feedback System](#)

Young Showing, Tu Yi-Ming and Ya-Tsai Tseng

Tsuchiya, Shigehisa

[A Search for New Methodology to Create a Learning Organization](#)

Shigehisa Tsuchiya

Tu, Chiang-Kuo

[The Meaning for 3-6 Grade Students Learning Systems Thinking](#)

Chiang-Kuo Tu



Uchino, A.

[System Dynamics Analysis of Network Externalities in Complex Market Structures, Part II: Basic Strategy for Re-entry and New Product Distribution](#) (abstract only)

Yoshi Fukunaga, Y. Takahashi, N. Tanaka, A. Uchino and M. Morita

Uhan, O.

[Strategic Value: Incorporating Real Options into System Dynamics Models](#) (abstract only)

G. E. Danner, K. E. Agatstein, D. E. Angelakis and O. Uhan

Ulhoi, John P.

[Sustainable Development and Sustainable Growth: Conceptual Plain or Points on a Conceptual Plain?](#)

John P. Ulhoi and Henning Madsen

Umar, Imrana A.

[A System Dynamics Approach to Feasibility Studies: An Assessment of the Learning Curve effects and Associated Risk in a Biomass Gasification Project](#) (abstract only)

Imrana A. Umar



Vaccaro, Nicola

[S.D. Modelling in Support of Winery Management Accounting System](#)

Habib Sedehi, Federica Boscolo and Nicola Vaccaro

Vaccaro, Nicola

[An Attempt to Define an Evaluation Methodology and a Quantitative Metric System Aiming to Evaluate the Corporate Shareholder "True Value" Using SD Modelling](#)

Habib Sedehi and Nicola Vaccaro

Vannan, M.

[Evaluating Oil & Gas Assets Through Simulation and Scenario Planning](#) (abstract only)

M. Vannan and W. Glass-Husain

Varoglu, A. K.

[Different Styles of Learning Organizations](#) (abstract only)

A. K. Varoglu, B. Atçi and Y. Ercil

Vennix, Jac A. M.

[Group Model Building: A Review of Assessment Studies](#) (plenary)

Etiënne A. J. A. Rouwette, Jac A. M. Vennix and Theo van Mullekom

Vennix, Jac A. M.

[Validation in Soft OR, Hard OR and System Dynamics: A Critical Comparison and Contribution to the Debate](#)

Özge Pala, Jac A. M. Vennix and Jack P. C. Kleijnen

Vicente, Silvio Martínez

[Competition in the Spanish Telecommunications Market: A Co-evolutionary, Differential Game Approach](#)

Marta Gala, Silvio Martínez Vicente, Francisco Gordillo and Ismael Alcalá y Javier Aracil

Vizayakumar, K.

[Modeling and Analysis of Population Dynamics in India](#) (abstract only)

K. Vizayakumar



Walker, Beverly

[System Dynamics and Action Research in Aged Care](#)

Beverly Walker and Tim Haslett

Walker, P.

[Systems Thinking in Tourism: Out-learning the Competitors](#) (abstract only)

P. Walker and R. Greiner

Walsh, Pat

[The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective](#) (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett

Wang, Qifan

[On The Principles To Stipulate The Long Term Development Strategy For China](#)

Qifan Wang

Wang, Qifan

[Considering The Long Term Economic Fluctuation In China](#)

Qifan Wang

Wang, Qifan

[Thinking on Building New Managerial Theory](#)

Qifan Wang and Lijuan Yu

Wang, Qifan

[Calm View On Knowledge Economy](#)

Qifan Wang and Yulin Fang

Wang, Sy-Feng

[Dynamic Modeling of Corporate Reputation Management Process](#)

Sy-Feng Wang, Wen-hsien Chang and Jen-shou Yang

Wang, Sy-Feng

[Modeling as Thinking Process: The Leverage is Thinking Role, not Thinking Skill](#)

Sy-Feng Wang

Warren, Mat

[Information Warfare: Using the Viable System Model as a Framework to Attack Organisations](#)

(plenary)

Bill Hutchinson and Mat Warren

Wei, LiZhou

[Study on the Measuring Method of Intensification of Economic Growth](#) (abstract only)

LiZhou Wei

Wei-Young, Wang

[The Prime Dynamics of System Computation](#)

Tu Yi-Ming and Wang Wei-Young

Weston, L.

[A Soft Approach to Survey Design](#)

L. Weston, R. Whiddett and B. Jackson

Whalley, Ian

[Beyond Pitch/Duration Scoring: Towards a System Dynamics Model Of Electroacoustic Music](#)

Ian Whalley

Whiddett, R.

[A Soft Approach to Survey Design](#)

L. Weston, R. Whiddett and B. Jackson

Williams, Ddembe

[Component-Based Modelling and Simulation: A Case for Simulation Software Architecture](#)

Ddembe Williams and Michael Kennedy

Williams, Mark Campbell

[Composite Case Study Demonstrating the use of Soft Systems Methodology for Analysing Information Management](#)

Mark Campbell Williams and Sunil Gunatunge

Wilson, K.

[End Game: Dealing with Reality after the Simulation is Over](#) (abstract only)

P. Capper, B. Cavana, D. Packer and K. Wilson

Wilson, K.

[Cultural Historical Activity Theory and Systems Thinking: A Marriage to be Arranged?](#) (abstract only)

P. Capper, B. Cavana, R. Hill and K. Wilson

Winch, G. W.

[Extending Model Validity Concepts and Measurements in System Dynamics](#) (plenary)

D. J. W. Arthur and G. W. Winch

Winch, Graham W.

[Building and Conceptualising Generic Model Structures to address Fundamental Business Change](#)

Graham W. Winch, Daniel J. W. Arthur and Colin Grey

Wolfenden, J.

[Group Decision Making for Environmental Problems: The Virtual Learning Organisation](#) (abstract only)

J. Wolfenden and R. Gill

Wolstenholme, E.

[The Use of Systems Thinking and System Dynamics as Tools for Business Excellence and Knowledge Management](#) (abstract only)

E. Wolstenholme

Wolstenholme, Eric F

[Value Chain Dynamics: Applying System Dynamics to Support Value Thinking](#) (plenary)

Richard W Stevenson and Eric F Wolstenholme

Wong, K. K.

[Education Technologies in System Dynamics Teaching](#) (plenary)

Purnendu Mandal and K. K. Wong

Woodford, Keith

[Enhancing Emancipatory Systems Methodologies within a Pluralistic Critical Systems Framework for Sustainable Development](#)

Yiheyis Taddele Maru and Keith Woodford

Woodford, Keith B

[Modelling Systems Dynamics for New Pastoral Industries](#)

Keith B Woodford

Wreme, Elisabet

[How to use Dialogue as a Practical Way to Start Applying the Principles of Complexity Theory to a Traditional Organisation](#)

Elisabet Wreme

Wuagneux, Dianna

[Information Physics: Identifiable Patterns and Instrumental Processes](#) (plenary)

Dianna Wuagneux

Wuagneux, Dianna

[Harnessing the Power of Living Systems' Cycles](#)

Dianna Wuagneux



Xu, Lifan

[System Dynamic Modeling on the Capital Accumulation and Distribution in Enterprises](#)

Qingrui Xu, Yongyi Shou, Lifan Xu and Jin Chen

Xu, Qingrui

[System Dynamic Modeling on the Capital Accumulation and Distribution in Enterprises](#)

Qingrui Xu, Yongyi Shou, Lifan Xu and Jin Chen



Yamaguchi, Kaoru

[Stock-Flow Fundamentals, DT and Feedback Loop — From Dynamics to System Dynamics](#)

(abstract only)

Kaoru Yamaguchi

Yang, Jen-shou

[Dynamic Modeling of Corporate Reputation Management Process](#)

Sy-Feng Wang, Wen-hsien Chang and Jen-shou Yang

Yi-Ming, Tu

[The Prime Dynamics of System Computation](#)

Tu Yi-Ming and Wang Wei-Young

Yi-Ming, Tu

[Organizational Learning as a Feedback System](#)

Young Showing, Tu Yi-Ming and Ya-Tsai Tseng

Young, Showing H.

[A Method for Reconciling Dynamic Complex Conflicts among the Hierarchy of Objectives](#) (abstract only)

Showing H. Young and Chia Ping Chen

Young, Showing H.

[An Evolutionary Learning Method to Select Relevant Information through a System Dynamics Model](#) (abstract only)

Showing H. Young and Chia Ping Chen

Young, Showing H.

[A System Dynamics Model of Technological Innovation with Integration of Adoption Dynamics, Strategic Interaction and Network Externality](#) (abstract only)

Showing H. Young and Shih Hui Lo

Young, Showing H.

[A Microworld Customized for an Oil Refinery of a Petroleum Corporation](#)

Showing H. Young and Lihlian Hwang

Younger, Anne

[Unlocking People Potential as the Key to a Dynamic Organisation](#)

Robyn Hill and Anne Younger

Yu, Lijuan

[Thinking on Building New Managerial Theory](#)

Qifan Wang and Lijuan Yu



Zahn, Erich

[Strategizing needs Systems Thinking](#) (plenary)

Erich Zahn

Zamudio-Ramirez, Pavel

[The Automobile Recycling Industry in North America](#)

Pavel Zamudio-Ramirez

Zaraza, R.

[Tools and Techniques for Starting a System Dynamics Program in Your School for Students in Grades 7 through 12](#) (workshop)

D. Fisher, R. Zaraza, Scott Guthrie and Tim Joy

Zaraza, Ron

[Episodic and Sustained Use of Systems in k-12 Classrooms — The Approach Fits the Goal](#)
(abstract only)

Ron Zaraza, Timothy Joy and Scott Guthrie

Zhang, Jing Lydia

[A Taoist Foundation of Systems Modeling and Thinking](#)

Karl R. Lang and Jing Lydia Zhang

Zhiqi, Miao

[The Green World Management Flight Simulator](#)

Gianliborio Marrone, Vaidotas Sruogis and Miao Zhiqi

Titles Index



The @Corp Case: Enhancing Co-operation Among Managers of Different Business Units

Vaidotas Sruogis, Pål I. Davidsen and Enzo Bivona

An Abcedarian System Dynamics Handbook: Accessible, Brief, Clustered (workshop)

J. M. DiStefano

Action Research as a Means of Enhancing Dairy Farmer Learning for Management

Claire Massey and Evelyn Hurley

Addressing the Strategic Issues Around Training and Development Investments and Realized Benefits (abstract only)

Mark D. Choudhari

After 40 Years, has System Dynamics Changed?

Juan C. Rego

An Aggregate Capacity Model of the Pharmaceutical Research and Development Process

Paul R. Bunch and Denny Park

An Application of System Dynamics and Risk Management Techniques to School Bus Safety Policy

Bronwyn Howell and Mark Obren

Applying System-Wide Discovery Analysis to the Market Growth Model

Annabel Membrillo, James L. Ritchie-Dunham and Conrado Garcia Madrid

Applying Systems Thinking to a Strategic Simulation of Service Quality

Chee-Leong Chong

The Art of Developing Management Support: Demands on Theoretic and Technologic Synergy

Irma Alm

ASTRA: Assessment of Transport Strategies

Wolfgang Schade, Angelo Martino and Michele Roda

An Attempt to Define an Evaluation Methodology and a Quantitative Metric System Aiming to Evaluate the Corporate Shareholder "True Value" Using SD Modelling

Habib Sedehi and Nicola Vaccaro

The Automobile Recycling Industry in North America

Pavel Zamudio-Ramirez



Benefits of the Activity Based Costing (ABC) for SMEs: A System Dynamics Perspective (abstract only)

Adolfo Crespo, José-María Sarriequi and Carmine Bianchi

Beyond Checkland & Scholes: Improving SSM (plenary)

Marcia Salner

**Beyond Hard and Soft Modelling. An Social-scientific Application of System Dynamics
(abstract only)**

Rueylin Hsiao

**Beyond Pitch/Duration Scoring: Towards a System Dynamics Model Of Electroacoustic
Music**

Ian Whalley

Beyond Reform to Performance Leadership in the Public Sector

Russell Craig and Peter Cooper

**Building and Conceptualising Generic Model Structures to address Fundamental Business
Change**

Graham W. Winch, Daniel J. W. Arthur and Colin Grey



Calm View On Knowledge Economy

Qifan Wang and Yulin Fang

**A Case of Interaction between Systems Dynamics and Linear Programming: The Rapim-
Pirenaica Model**

Silvio Martínez, Francisco Gordillo, Elena López and Ismael Alcalá

**A Causal-Behavioral Map of the Predator-prey Oscillatory System using Pathway
Participation Metrics (abstract only)**

M. Mojtahedzadeh

Causality and Validation of System Dynamics Models incorporating Soft Variables: Establishing an Interface with Structural Equation Modelling (abstract only)

Santanu Roy, K. S. Krishnan Marg and Pratap K. J. Mohapatra

Cellular Automata: A Useful and Effective Tool for Reading, Interpreting, Describing, Forseeing the Behaviour of Urban Systems

Arnaldo "Bibo" Cecchini and Enrico Rinaldi

A Change in General Practitioners' Daily Behaviour Finances Healthcare Development

Lars Odd Petersen

The Cognitive Limits on Organisational Reframing: A Systems Perspective Based on the Theory of Autopoiesis (plenary)

John Brocklesby and John Mingers

Comparing the Effects of Conceptualization, Simulation and Facilitation on Mental Model Development in a Group Setting: An Experimental Investigation Utilizing Case Study and Management Flight Simulator Approaches

Michelle Shields

A Comparison of System Dynamics (SD) and Discrete Event Simulation (DES)

Al Sweetser

Competition in the Spanish Telecommunications Market: A Co-evolutionary, Differential Game Approach

Marta Gala, Silvio Martínez Vicente, Francisco Gordillo and Ismael Alcalá y Javier Aracil

Component-Based Modelling and Simulation: A Case for Simulation Software Architecture

Ddembe Williams and Michael Kennedy

Composite Case Study Demonstrating the use of Soft Systems Methodology for Analysing Information Management

Mark Campbell Williams and Sunil Gunatunge

A Comprehensive Objective Performance Evaluation of the Accident Compensation Corporation of New Zealand's Main Branches (abstract only)

M. Meimand, B. Cavana and R. Laking

Computer Modelling of Energy, Food and Environment: The Case of Bangladesh (abstract only)

B. K. Bala

A Concept for Organizational Decision Support Using Structure Matrix (abstract only)

T. Sumita, M. Shimazaki and T. Toyama

Considering The Long Term Economic Fluctuation In China

Qifan Wang

Constructing an Interactive Learning Environment (ILE) to Conduct Evaluation Experiments (plenary)

Andreas Größler, Ingo Notzon and Aamir Shehzad

Countering Cultural Polarities (workshop)

Philip L. Ramsey

Cultural Historical Activity Theory and Systems Thinking: A Marriage to be Arranged? (abstract only)

P. Capper, B. Cavana, R. Hill and K. Wilson

The Cycle of Aroha: Modelling a Maori Inquiry System (plenary)

Wayne Taurima and Michael Cash



David vs. Goliath: Responses to Domination Strategies in PC and Server OS Markets

Vedat G. Diker and Jochen Scholl

Decision Engineering of an Decyl-lactose Generation Chemical Laboratory Process Assisted by a Diploid Genetic Algorithm and a Multicriterion Aggregation Method

S. Massebeuf, C. Fonteix, L. N. Kiss and I. Marc

Designing a Rational Process for Risk-taking

Mohamed Saleh and Magne Myrvtveit

Designing and Testing Policies to Prevent Office Building Oversupply Cycles

Max Kummerow

Designing High-leverage Strategies and Tactics

Nicholas C. Georgantzas and James L. Ritchie-Dunham

Determination of the Treatment-free Aids Incubation Distribution Using a System Dynamics Optimisation Tool (abstract only)

Brian C. Dangerfield

Developing a Success Model for Income Support

Philip Gandar and Miles Shepheard

Developing Simulation Dynamic Models of Breast Cancer Screening

Michael J Fett

Development of a Management Flight Simulator to Enable the Strategic Planning and Targeting of Telecommunications Networks Resources and Services to the Most Profitable Customers

Ann Matthews and Jo Osborne

Development of a Model for Quality to Enhance Organisational Learning

Kamlesh Shah, Purnendu Mandal and Peter Love

Development Of A Suite Of Operation and Support Cost Analysis Models (OSCAM) for the Defence Community (abstract only)

J. M. Coyle, D. R. Exelby and M. Edge

Development of System Dynamic Model to Diagnose the Logistic Chain Performance of Shipbuilding Industry in Indonesia

Andi Cakravastia and Lucia Diawati

Different Styles of Learning Organizations (abstract only)

A. K. Varoglu, B. Atçi and Y. Ercil

Dynamic Behavior of NPD

Yolanda Álvarez Castaño

A Dynamic Model for Understanding Individual's Interactive and Communications Requirements in a Telecoms Environment

Jo Osborne

Dynamic Modeling of Corporate Reputation Management Process

Sy-Feng Wang, Wen-hsien Chang and Jen-shou Yang

Dynamic Modelling to Assist in the Understanding of Consumer Take-up and the Diffusion of New Telecommunications Services

Jo Osborne

Dynamic Simulation for Strategic Insurance Management

Yaman Barlas, Korkut Çirak and Ekrem Duman

Dynamic Simulation of Smoking Control Environment in the USA 1990-2010 (abstract only)

R. D. Brown and F. J. Chaloupka

Dynamics of Electricity Supply and CO2 Emissions; A System Dynamics based Investigation of Pakistan's Case (abstract only)

Qudrat-Ullah and P. I. Davidsen

Dynamics of Knowledge Accumulations the Example of the Management Consulting Industry (abstract only)

Francesco Sacco

Dynamics of the Human Body Clock (abstract only)

D. W. Peterson and J. Melhuish



Educating Senior Managers in Systems Concepts: Case Study of Public Health Policy Development

Michael J Fett and Keith T Linard

Education Technologies in System Dynamics Teaching (plenary)

Purnendu Mandal and K. K. Wong

Effect of Time Delay on Model Behavior and its Implication for Electronic Transactions in Cyber Space

Taehoon Moon, Dong Hwan Kim and Doa Hoon Kim

The Effects of Strategic Workshops with Housing Associations (abstract only)

Etiënne A. J. A. Rouwette, Hans H. J. J. van Kuppevelt, Eppie Fokkema and Rob Nijkamp

Emboldened to Continue: Further Explorations in Peer Partnership Learning: A Critical Systems Approach (plenary)

Judith McMorland, Susan Byrne, Mark Feenstra and Tony Silvester-Clark

End Game: Dealing with Reality after the Simulation is Over (abstract only)

P. Capper, B. Cavana, D. Packer and K. Wilson

Enhancing Emancipatory Systems Methodologies within a Pluralistic Critical Systems Framework for Sustainable Development

Yiheyis Taddele Maru and Keith Woodford

Environmental Performance for the Long Term Industrial Competitiveness: A System Dynamic Study of Chinese Cement Industry (abstract only)

Xu Honggang and Steve Arquitts

Episodic and Sustained Use of Systems in k-12 Classrooms — The Approach Fits the Goal (abstract only)

Ron Zaraza, Timothy Joy and Scott Guthrie

Evaluating Oil & Gas Assets Through Simulation and Scenario Planning (abstract only)

M. Vannan and W. Glass-Husain

The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett

An Evolutionary Learning Method to Select Relevant Information through a System Dynamics Model (abstract only)

Showing H. Young and Chia Ping Chen

Exploration of Outcome Feedback for Dynamic Decision Making

Naiyi Hsiao

Extending Model Validity Concepts and Measurements in System Dynamics (plenary)

D. J. W. Arthur and G. W. Winch



Facilitating Students' Perception of Systemic Concepts through "Systemic Exploratories"

Martin Schaffernicht

Flexibility in Manufacturing Processes: A Relational, Dynamic and Multidimensional Approach

Javier Pereira

Forming a Student Chapter of the System Dynamics Society (plenary, abstract only)

O. Pala, B. Guneralp and E. Rouwette

Fred Emery Oration: Systems Thinking (and Action) FROM the New Millennium: Learning from the Future (keynote)

Richard Bawden

The Future of System Dynamics in Post Soviet Countries: Lithuanian Case (abstract only)

S. Norvaisas



A Generic Model of Infrastructure Maintenance Management (abstract only)

Jamal Nasir

A Geographically Disaggregated Model of Urban Settlement Patterns (abstract only)

Nathan B. Forrester

Getting to Implementation: Towards a System Dynamics Change Management Framework

B. R. Campbell and G. M. McGrath

Goldratt's "Theory of Constraints" Thinking Processes: A Systems Methodology linking Soft with Hard

Victoria Mabin

Government Reform in Japan — An Application of SD National Model based on SNA

Saburo Kameyama, Hidenori Kobayshi and Toru Suetake

The Green World Management Flight Simulator

Gianliborio Marrone, Vaidotas Sruogis and Miao Zhiqi

Group Decision Making for Environmental Problems: The Virtual Learning Organisation

(abstract only)

J. Wolfenden and R. Gill

Group Model Building: A Review of Assessment Studies (plenary)

Etiënne A. J. A. Rouwette, Jac A. M. Vennix and Theo van Mullekom



Harnessing the Natural Energy of Organizational Discontent (abstract only)

Douglas R. Rosensteel

Harnessing the Power of Living Systems' Cycles

Dianna Wuagneux

How Managerial Incentive Systems Influence the Company's Business Performance — A System Dynamics Model and its Results

Frank Schoeneborn

How to use Dialogue as a Practical Way to Start Applying the Principles of Complexity Theory to a Traditional Organisation

Elisabet Wreme



Identification and Confidence Region of Parameters in non Linear and Dynamical Systems

S. Massebeuf, C. Fonteix, I. Marc and F. Pla

The Impact of Delay Structure on System Performance (abstract only)

L. Diawati and A. C. Raja

The Impact of International Instabilities on USA Financial System (abstract only)

M. Getmansky

The Improvisational Music Group — A Human System Simulation (workshop)

Peter Forrester and John Bailey

In Search of Theories of Dynamic Decision Making: A Literature Review (plenary)

Naiyi Hsiao and George P. Richardson

Increasing User Confidence in System Dynamics Models Through Use of an Established Set of Logic Rules to Enhance Forrester and Senge's Validation Tests

Steven J. Balderstone

The Influence of Decision Time on Performance in Use of a Business Simulator

Andreas Größler

Information Physics: Identifiable Patterns and Instrumental Processes (plenary)

Dianna Wuagneux

Information Warfare: Using the Viable System Model as a Framework to Attack Organisations (plenary)

Bill Hutchinson and Mat Warren

Integration of SD and GIS for Land Use Planning: A Case Study of an Urbanizing Area in China (abstract only)

Ling Shi

Internet Futures: Growing Market Intelligence to Allow Telecoms Operators to Seize the Opportunities of the Information Age

Frederic Lagacherie

Introducing System Dynamics in Small Entrepreneurial Firms — Some Critical Issues from a Field Analysis (abstract only)

E. Bivona



JuliusProcess, Towards an Alternative for Systemic Integration for the Strategic Consultancy Process

Jorge Sepulveda-Haugen and Eduardo Testart-Tobar



Learning From Evolution: A Study of Acer's Corporate Strategy

Anil Kumar Sahai

Learning in and About Simple Dynamic Systems (plenary)

Pål I. Davidsen, J. Michael Spector and Marcelo Milrad

Limits on Sardine Catches and the Portuguese Processing Fish Industry. A System Dynamics Study

J. Ferreira Dias, J. Cruz Filipe and J. Gonçalves Dias

Linking 'Soft' With 'Hard': A Case of Health System Planning in a Developing Country

Shams-ur Rahman and David K Smith



Managing Improvement Amongst Autonomous Actors with OMCA: The Case of the Chilean Educational Reform

Martin Schaffernicht

The Meaning for 3-6 Grade Students Learning Systems Thinking

Chiang-Kuo Tu

Medical Practice Variations. Reflections from the Complex Systems Perspective

Rafael M^a. García Rodríguez, Begoña González-Busto Múgica and Yolanda Álvarez Castaño

Mental Model — Eastern Perspective

K. Gopalan

Merits of Different Formats for Learning and Implementing System Dynamics

Octavio Carranza and Juan C. Rego

A Method for Estimating Order of System Dynamics Delays (abstract only)

Rahul Roy and P. K. J. Mohapatra

A Method for Reconciling Dynamic Complex Conflicts among the Hierarchy of Objectives (abstract only)

Showing H. Young and Chia Ping Chen

A Microworld Customized for an Oil Refinery of a Petroleum Corporation

Showing H. Young and Lihlian Hwang

Mini-Model Presentations: A Tool For Teaching Dynamics Systems Thinking (abstract only)

S. Guthrie

Modeling and Analysis of Population Dynamics in India (abstract only)

K. Vizayakumar

Modeling as Thinking Process: The Leverage is Thinking Role, not Thinking Skill

Sy-Feng Wang

Modelling and Simulation of a Production Line in an Automotive Company (abstract only)

R. Riuz-Usano, J. M. Framiñán-Torres, M. A. Muñoz-Pérez, Crespo-Márquez and P. Moreu de León

Modelling Customer Behaviour in a Competitive Environment

Ahmed Mohamed and Frederic Lagacherie

Modelling Free Trade Zones and Strategic Trade Policy

A. O. Moscardini, K. Lawler and M. Loutfi

Modelling Market Opportunities for Telecommunications in the 21st Century

Alison Brady, Ann Matthews and Frederic Lagacherie

Modelling of a Wetland Through Sustainable Development

Burak Güneralp and Yaman Barlas

Modelling Strategic Assets as a Dynamic System of 'Primary' and 'Derivative' Resources

Carmine Bianchi

Modelling Systems Dynamics for New Pastoral Industries

Keith B Woodford

Modelling the Effect of Cognitive Variables on Group Brainstorming Using System Dynamics (abstract only)

Dianna Azevedo-Carns

Multicriterion Analysis Aided Project Rankings under Payoutflows Homogenization Constraint in Transport Infrastructural Investment

Laszlo Nandor Kiss



Need an Environmental Interface in VSM? Ask Managers in Crises (abstract only)

Q. Lu, S. Byrne and K. Maani

No More Problems, Solutions, or Normal Organisational Life (keynote)

Robert Louis Flood



On the Principles to Stipulate the Long Term Development Strategy for China

Qifan Wang

Operational Research from a Critical Viewpoint

Çaglar Gven

Optimising Workforce Structure the System Dynamics of Employment Planning

Keith T Linard, Mark Blake and David Paterson

Organisational Participation and Being a Participant: Ships, Pirates and Crocodiles

Marion Helme

Organising for Accountability in the New Zealand Department of Conservation

Keith Johnston and Peter Cooper

Organizational Learning as a Feedback System

Young Showing, Tu Yi-Ming and Ya-Tsai Tseng



Performance Determination of a Single Cell Oil Process

L. Muniglia, S. Papanikolaou, C. Fonteix and I. Marc

A Period — Stability Trade-off in a Model of the Kondratiev Cycle

Alexander V. Ryzhenkov

Planning Sustainable Mobility with the Stakeholders — A System Dynamics Approach

Johannes Heeb, Corine Mauch, Mario Keller and Felix Huber

The Practical Applications of System Dynamics to Identify System Specific Maintenance Strategies (abstract only)

John McLuckie, Mark Heffernan and Trevor Armstrong

Pragmatism, Systems Thinking and System Dynamics (plenary)

John Barton

The Prime Dynamics of System Computation

Tu Yi-Ming and Wang Wei-Young



Q

Qualitative Modelling in System Dynamics or What are the Wise Limits of Quantification?

(keynote)

Geoff Coyle



R

The Relationship of Human Performance to Business Performance in a Call Center Environment (abstract only)

Martin Mann

Reorganization and Divestiture: Using System Dynamics to Navigate Perilous Waters (abstract only)

Donna Mayo, Jonathan Pott and Alan Graham

Research Design for a Comparative Study of the COCOMO II Model and a Systems Cost Model

G. A. Bell, M. A. Cooper, J. O. Jenkins and M. Kennedy

The Rise and the Fall of the Subscribers in a Small Publishing Company — How can be Possible to Reach a Profitable and Sustainable pattern? (abstract only)

E. Bivona

Risk Assessment and Multiple Frames: A System Dynamics Policy Integration of the 1998 Springfield, Illinois Leptospirosis Outbreak (abstract only)

Kevin O'Neill and Lee Frost-Kumpf

The Role of Change Agents in an IT Services Corporation: A Systems Approach to Developing a Strategy for Improvement

Chris J. Rowland



S.D. Modelling in Support of Winery Management Accounting System

Habib Sedehi, Federica Boscolo and Nicola Vaccaro

Schools, Organisational Learning and the Use of 'Scenario Analysis': Some Research Results (plenary)

Kevin Laws and Robert McLeod

SD and Prospective: A Marriage of Convenience

Fabián H. Szulanski

A Search for New Methodology to Create a Learning Organization

Shigehisa Tsuchiya

Simulating Complex Non-linear Dynamic Systems in Marketing

Peter November and David Johnstone

**Simulating Different Decision Rules and Market Demands: New Insights into the Beer Game
(abstract only)**

P. M. Milling

A Soft Approach to Survey Design

L. Weston, R. Whiddett and B. Jackson

Soft Systems Methodology: A 30-year Retrospective (keynote)

Peter Checkland

**Some Issues in Building System Dynamics Models designed to Improve the Information
Systems Investment Appraisal Process**

Michael Kennedy

**Some Issues in Building System Dynamics Models for improving the Resource Management
Process in Higher Education**

Michael Kennedy and Chris Clare

**Steps in Conceptualizing a System for System Dynamics Model-Building: A Case Study of an
Oil Refinery of a Petroleum Corporation**

Lihlian Hwang and Gary Hu

**Stock-Flow Fundamentals, DT and Feedback Loop — From Dynamics to System Dynamics
(abstract only)**

Kaoru Yamaguchi

Strategic Analysis of and Scenario Planning for the Turkish Public Social Security System

Sibel Güven, Erol Sayin and Mustafa Akmaz

Strategic Planning in the Dutch Telecommunications Industry

Cyprian A. Smits

Strategic Value: Incorporating Real Options into System Dynamics Models (abstract only)

G. E. Danner, K. E. Agatstein, D. E. Angelahis and O. Uhan

Strategizing needs Systems Thinking (plenary)

Erich Zahn

Structure-oriented Behavior Tests in Model Validation (plenary)

Yaman Barlas and Korhan Kanar

Study on the Measuring Method of Intensification of Economic Growth (abstract only)

LiZhou Wei

Sustainable Development and Sustainable Growth: Conceptual Plain or Points on a Conceptual Plain?

John P. Ulhoi and Henning Madsen

SYDPIM Integration of SD and PERT/CPM Tools: Assessing Fagan Analysis in a Large-scale Software Project

Alexandre G. Rodrigues

System Dynamic Modeling on the Capital Accumulation and Distribution in Enterprises

Qingrui Xu, Yongyi Shou, Lifan Xu and Jin Chen

A System Dynamics Analysis of Electronic Commerce

Jaeho Juhn, Won-Gyu Ha and Nam Hee Choi

System Dynamics Analysis of Network Externality in Complex Market Structures, Part II: Basic Strategy for Re-entry and New Product Distribution (abstract only)

Yoshi Fukunaga, Y. Takahashi, N. Tanaka, A. Uchino and M. Morita

System Dynamics and Action Research in Aged Care

Beverly Walker and Tim Haslett

System Dynamics and Decision Support in Complex Systems

Mirosljub Kljajic, Andrej Škraba and Igor Bernik

System Dynamics and Systems Thinking: It Takes All Kinds (plenary)

Alan K. Graham and Sharon A. Els

System Dynamics applied to Modelling and Simulation of Foot-and-Mouth Disease Epidemiology

Omaira Cecilia Lizarazo Herrera, Carlos Alberto González Buitrago, Hugo Hernando Andrade Sosa and Carlos Humberto García Castaño

A System Dynamics Approach to Feasibility Studies: An Assessment of the Learning Curve effects and Associated Risk in a Biomass Gasification Project (abstract only)

Imrana A. Umar

A System Dynamics Approach to the Analysis of the Intra-organisational Ecology Theory

Edoardo Mollona

A System Dynamics Approach to the Diffusion of Intranet Banking: A Case Study From Thailand

Arunee Intrapairot and Mohammed Quaddus

A System Dynamics Decision Support System for Holistically Orientated Government Policy Making in the Natural Resources Development Area (abstract only)

R. A. Gill

A System Dynamics Model of Technological Innovation with Integration of Adoption Dynamics, Strategic Interaction and Network Externality (abstract only)

Showing H. Young and Shih Hui Lo

System Dynamics Model on Harmonious Development of Chinese Science & Technology, Education and Economy under High Technology

Xu Qingrui and Fan Baoqun

System Dynamics Modelling and its Role in Policy Development and Implementation Within the New Zealand Health Sector

David Rees and Paul Malpass

System Dynamics Models and the Object-Oriented Paradigm

Warren W. Tignor

System Dynamics of Sustainable Port Management (abstract only)

B. Baxter

A System Dynamics Study on the Liberalization Plans of the Philippine Automotive Industry

Ma. Jilla Phoebe S. Decena

System Dynamics: A New Tool for TQM

Shoji Hidaka

System Thinking and Corporate Strategy

Carlo Brugnoli

Systems and Ethics: Thinking about Human Needs and Sustainability for the Next Millennium

John Peet

A Systems Approach to Knowledge Creation

Warren Topp

A Systems Rationale for an Evolutionary Epistemological Approach (abstract only)

Simon James

Systems Thinking for the Next Millennium: The Future of the IT Services Industry

Finn Jackson

Systems Thinking in High Schools for 2100 (workshop)

Gordon Kubanek

Systems Thinking in the Management of Korean Economic Crisis

Dong-Hwan Kim

Systems Thinking in Tourism: Out-learning the Competitors (abstract only)

P. Walker and R. Greiner

A Systems View of the Drivers of IT Investment for a Firm (abstract only)

A. Kanshik, A. Swaroop and R. Roy



A Taoist Foundation of Systems Modeling and Thinking

Karl R. Lang and Jing Lydia Zhang

Teaching our Children Well: What Oregon Teachers Have Learned After Six Years of System Dynamics Instruction at the K-12 Level (abstract only)

Timothy Joy

Tensions between Production and Engineering Units: A System Dynamics Model

Qiang Lu, Kambiz Maani and Susan Byrne

Thinking on Building New Managerial Theory

Qifan Wang and Lijuan Yu

To Privatize or Not to Privatize, That is the Question — Should Outsourcing be a Guiding Idea for Your Organization — The New Zealand Story (abstract only)

R. Sankarakrishnan

Tools and Techniques for Starting a System Dynamics Program in Your School for Students in Grades 7 through 12 (workshop)

D. Fisher, R. Zaraza, Scott Guthrie and Tim Joy

Towards a Dynamic Feedback Framework for Public Sector Performance Management

Phil Sloper, Keith T Linard and David Paterson

Towards a Model of Decision-Making of Flower Growing Systems

J. L. Catley, E. M. Hurley, E. A. Cameron and A. J. Hall

Towards a POSIT-ive Systemic Perspective of Strategic Management: A Natural Language Approach

John Driver and Panos Louvieris

Towards a Systemic Understanding of a Hospital Waiting List

Jeffrey L. Foote, Don. J. Houston and Nicola H. North

Towards an Understanding of Systemicity: An Investigation into Systems Thinking (abstract only)

G. Cao, S. Clarke and B. Lehane

Trust and Distrust in Long-Term Business Relationships

R. Schwarz and J. W. Ewaldt



Understanding Business Cycles in the Airline Market

Martin Liehr, Andreas Größler and Martin Klein

Universities as Learning Organisations — Or Not!

Peter L Galbraith

Unlocking People Potential as the Key to a Dynamic Organisation

Robyn Hill and Anne Younger

Use of Electronic Meeting Support Systems (workshop, abstract only)

M. Menzies and V. Mabin

The Use of Group Modelling Techniques as a Teaching Tool (plenary)

Tim Haslett, John Barton and Rod Sarah

The Use of Systems Thinking and System Dynamics as Tools for Business Excellence and Knowledge Management (abstract only)

E. Wolstenholme

Using a Systems Approach to Unravel Feedback Mechanisms Affecting Urban Transport Choices

Mark Bachels, John Peet and Peter Newman

Using System Dynamic's Methodology to Teach Macroeconomics

A. O. Moscardini, K. Lawler and M. Loutfi



Validation in Soft OR, Hard OR and System Dynamics: A Critical Comparison and Contribution to the Debate

Özge Pala, Jac A. M. Vennix and Jack P. C. Kleijnen

Validation of a Simulation of Information Systems Development Project Management

Andrew Martin

The Validation of Commercial System Dynamics Models (plenary)

Geoff Coyle and David Exelby

Value Chain Dynamics: Applying System Dynamics to Support Value Thinking (plenary)

Richard W Stevenson and Eric F Wolstenholme

Virtual Technology Assessment for Viable Policy Options: A System Dynamics Approach

Jan Faber and Tom P. Alkim

W

X

Y

Z

Keynote Addresses

Soft Systems Methodology: A 30-year Retrospective

Peter Checkland

No More Problems, Solutions, or Normal Organisational Life

Robert Louis Flood

Qualitative Modelling in System Dynamics or What are the Wise Limits of Quantification?

Geoff Coyle

Fred Emery Oration: Systems Thinking (and Action) FROM the New Millennium: Learning from the Future

Richard Bawden

Plenary Presentations

Extending Model Validity Concepts and Measurements in System Dynamics

D. J. W. Arthur and G. W. Winch

Structure-oriented Behavior Tests in Model Validation

Yaman Barlas and Korhan Kanar

Information Physics: Identifiable Patterns and Instrumental Processes

Dianna Wuagneux

Emboldened to Continue: Further Explorations in Peer Partnership Learning: A Critical Systems Approach

Judith McMorland, Susan Byrne, Mark Feenstra and Tony Silvester-Clark

Schools, Organisational Learning and the Use of 'Scenario Analysis': Some Research Results

Kevin Laws and Robert McLeod

The Cognitive Limits on Organisational Reframing: A Systems Perspective Based on the Theory of Autopoiesis

John Brocklesby and John Mingers

Beyond Checkland & Scholes: Improving SSM

Marcia Salner

The Cycle of Aroha: Modelling a Maori Inquiry System

Wayne Taurima and Michael Cash

Forming a Student Chapter of the System Dynamics Society (abstract only)

O. Pala, B. Guneralp and E. Rouwette

The Use of Group Modelling Techniques as a Teaching Tool

Tim Haslett, John Barton and Rod Sarah

Pragmatism, Systems Thinking and System Dynamics

John Barton

Education Technologies in System Dynamics Teaching

Purnendu Mandal and K. K. Wong

Constructing an Interactive Learning Environment (ILE) to Conduct Evaluation Experiments

Andreas Größler, Ingo Notzon and Aamir Shehzad

In Search of Theories of Dynamic Decision Making: A Literature Review

Naiyi Hsiao and George P. Richardson

Learning in and About Simple Dynamic Systems

Pål I. Davidsen, J. Michael Spector and Marcelo Milrad

Group Model Building: A Review of Assessment Studies

Etiënne A. J. A. Rouwette, Jac A. M. Vennix and Theo van Mullekom

Value Chain Dynamics: Applying System Dynamics to Support Value Thinking

Richard W Stevenson and Eric F Wolstenholme

System Dynamics and Systems Thinking: It Takes All Kinds

Alan K. Graham and Sharon A. Els

Strategizing needs Systems Thinking

Erich Zahn

The Validation of Commercial System Dynamics Models

Geoff Coyle and David Exelby

Information Warfare: Using the Viable System Model as a Framework to Attack Organisations

Bill Hutchinson and Mat Warren

Workshops

Use of Electronic Meeting Support Systems (abstract only)

M. Menzies and V. Mabin

Countering Cultural Polarities

Philip L. Ramsey

Systems Thinking in High Schools for 2100

Gordon Kubanek

Tools and Techniques for Starting a System Dynamics Program in Your School for Students in Grades 7 through 12

D. Fisher, R. Zaraza, Scott Guthrie and Tim Joy

The Improvisational Music Group — A Human System Simulation

Peter Forrester and John Bailey

An Abcedarian System Dynamics Handbook: Accessible, Brief, Clustered

J. M. DiStefano

Session Index

Agriculture/fishing

Modelling Systems Dynamics for New Pastoral Industries

Keith B Woodford

Limits on Sardine Catches and the Portuguese Processing Fish Industry. A System Dynamics Study

J. Ferreira Dias, J. Cruz Filipe and J. Gonçalves Dias

Towards a Model of Decision-Making of Flower Growing Systems

J. L. Catley, E. M. Hurley, E. A. Cameron and A. J. Hall

Balanced scorecard & optimal performance

An Aggregate Capacity Model of the Pharmaceutical Research and Development Process

Paul R. Bunch and Denny Park

Towards a Dynamic Feedback Framework for Public Sector Performance Management

Phil Sloper, Keith T Linard and David Paterson

Applying Systems Thinking to a Strategic Simulation of Service Quality

Chee-Leong Chong

Competition and business cycles

Understanding Business Cycles in the Airline Market

Martin Liehr, Andreas Größler and Martin Klein

Simulating Different Decision Rules and Market Demands: New Insights into the Beer Game (abstract only)

P. M. Milling

David vs. Goliath: Responses to Domination Strategies in PC and Server OS Markets

Vedat G. Diker and Jochen Scholl

System Dynamics Analysis of Network Externality in Complex Market Structures, Part II: Basic Strategy for Re-entry and New Product Distribution (abstract only)

Yoshi Fukunaga, Y. Takahashi, N. Tanaka, A. Uchino and M. Morita

Delays and parameter estimation

Identification and Confidence Region of Parameters in non Linear and Dynamical Systems

S. Massebeuf, C. Fonteix, I. Marc and F. Pla

The Impact of Delay Structure on System Performance (abstract only)

L. Diawati and A. C. Raja

Effect of Time Delay on Model Behavior and its Implication for Electronic Transactions in Cyber Space

Taehoon Moon, Dong Hwan Kim and Doa Hoon Kim

A Method for Estimating Order of System Dynamics Delays (abstract only)

Rahul Roy and P. K. J. Mohapatra

Determination of the Treatment-free Aids Incubation Distribution Using a System Dynamics Optimisation Tool (abstract only)

Brian C. Dangerfield

Environmental issues

The Green World Management Flight Simulator

Gianliborio Marrone, Vaidotas Sruogis and Miao Zhiqi

Modelling of a Wetland Through Sustainable Development

Burak Güneralp and Yaman Barlas

Computer Modelling of Energy, Food and Environment: The Case of Bangladesh (abstract only)

B. K. Bala

Finance

The Impact of International Instabilities on USA Financial System (abstract only)

M. Getmansky

An Attempt to Define an Evaluation Methodology and a Quantitative Metric System Aiming to Evaluate the Corporate Shareholder "True Value" Using SD Modelling

Habib Sedehi and Nicola Vaccaro

A System Dynamics Approach to the Diffusion of Intranet Banking: A Case Study From Thailand

Arunee Intrapairot and Mohammed Quaddus

Strategic Value: Incorporating Real Options into System Dynamics Models (abstract only)

G. E. Danner, K. E. Agatstein, D. E. Angelahis and O. Uhan

Group Model Building Process

JuliusProcess, Towards an Alternative for Systemic Integration for the Strategic Consultancy Process

Jorge Sepulveda-Haugen and Eduardo Testart-Tobar

The Effects of Strategic Workshops with Housing Associations (abstract only)

Etiënne A. J. A. Rouwette, Hans H. J. J. van Kuppevelt, Eppie Fokkema and Rob Nijkamp

The Relationship of Human Performance to Business Performance in a Call Center Environment (abstract only)

Martin Mann

Steps in Conceptualizing a System for System Dynamics Model-Building: A Case Study of an Oil Refinery of a Petroleum Corporation

Lihlian Hwang and Gary Hu

Planning Sustainable Mobility with the Stakeholders — A System Dynamics Approach

Johannes Heeb, Corine Mauch, Mario Keller and Felix Huber

System Dynamics and Action Research in Aged Care

Beverly Walker and Tim Haslett

A System Dynamics Decision Support System for Holistically Orientated Government Policy Making in the Natural Resources Development Area (abstract only)

R. A. Gill

Health Care

Dynamics of the Human Body Clock (abstract only)

D. W. Peterson and J. Melhuish

Dynamic Simulation of Smoking Control Environment in the USA 1990-2010 (abstract only)

R. D. Brown and F. J. Chaloupka

Developing Simulation Dynamic Models of Breast Cancer Screening

Michael J Fett

System Dynamics applied to Modelling and Simulation of Foot-and-Mouth Disease Epidemiology

Omaira Cecilia Lizarazo Herrera, Carlos Alberto González Buitrago, Hugo Hernando Andrade Sosa
and Carlos Humberto García Castaño

System Dynamics Modelling and its Role in Policy Development and Implementation Within the New Zealand Health Sector

David Rees and Paul Malpass

A Change in General Practitioners' Daily Behaviour Finances Healthcare Development

Lars Odd Petersen

Medical Practice Variations. Reflections from the Complex Systems Perspective

Rafael M^a. García Rodríguez, Begoña González-Busto Múgica and Yolanda Álvarez Castaño

Towards a Systemic Understanding of a Hospital Waiting List

Jeffrey L. Foote, Don. J. Houston and Nicola H. North

Information Systems

S.D. Modelling in Support of Winery Management Accounting System

Habib Sedehi, Federica Boscolo and Nicola Vaccaro

The Art of Developing Management Support: Demands on Theoretic and Technologic Synergy

Irma Alm

An Evolutionary Learning Method to Select Relevant Information through a System Dynamics Model (abstract only)

Showing H. Young and Chia Ping Chen

Some Issues in Building System Dynamics Models designed to Improve the Information Systems Investment Appraisal Process

Michael Kennedy

Development Of A Suite Of Operation and Support Cost Analysis Models (OSCAM) for the Defence Community (abstract only)

J. M. Coyle, D. R. Exelby and M. Edge

Research Design for a Comparative Study of the COCOMO II Model and a Systems Cost Model

G. A. Bell, M. A. Cooper, J. O. Jenkins and M. Kennedy

Innovation

A System Dynamics Model of Technological Innovation with Integration of Adoption Dynamics, Strategic Interaction and Network Externality (abstract only)

Showing H. Young and Shih Hui Lo

System Dynamics Model on Harmonious Development of Chinese Science & Technology, Education and Economy under High Technology

Xu Qingrui and Fan Baoqun

Dynamic Behavior of NPD

Yolanda Álvarez Castaño

Macro Economics

Government Reform in Japan — An Application of SD National Model based on SNA

Saburo Kameyama, Hidenori Kobayshi and Toru Suetake

Study on the Measuring Method of Intensification of Economic Growth (abstract only)

LiZhou Wei

On the Principles to Stipulate the Long Term Development Strategy for China

Qifan Wang

Considering the Long Term Economic Fluctuation in China

Qifan Wang

A Period — Stability Trade-off in a Model of the Kondratiev Cycle

Alexander V. Ryzhenkov

Modelling Free Trade Zones and Strategic Trade Policy

A. O. Moscardini, K. Lawler and M. Loutfi

System Dynamic Modeling on the Capital Accumulation and Distribution in Enterprises

Qingrui Xu, Yongyi Shou, Lifan Xu and Jin Chen

Using System Dynamic's Methodology to Teach Macroeconomics

A. O. Moscardini, K. Lawler and M. Loutfi

Management Flight Simulators: Assessment Studies

The Influence of Decision Time on Performance in Use of a Business Simulator

Andreas Gröbler

Exploration of Outcome Feedback for Dynamic Decision Making

Naiyi Hsiao

End Game: Dealing with Reality after the Simulation is Over (abstract only)

P. Capper, B. Cavana, D. Packer and K. Wilson

Dynamic Simulation for Strategic Insurance Management

Yaman Barlas, Korkut Çirak and Ekrem Duman

Comparing the Effects of Conceptualization, Simulation and Facilitation on Mental Model Development in a Group Setting: An Experimental Investigation Utilizing Case Study and Management Flight Simulator Approaches

Michelle Shields

Management Flight Simulators: Business Applications

Development of a Management Flight Simulator to Enable the Strategic Planning and Targeting of Telecommunications Networks Resources and Services to the Most Profitable Customers

Ann Matthews and Jo Osborne

A Microworld Customized for an Oil Refinery of a Petroleum Corporation

Showing H. Young and Lihlian Hwang

The @Corp Case: Enhancing Co-operation Among Managers of Different Business Units

Vaidotas Sruogis, Pål I. Davidsen and Enzo Bivona

Manufacturing

Modelling and Simulation of a Production Line in an Automotive Company (abstract only)

R. Riuz-Usano, J. M. Framiñán-Torres, M. A. Muñoz-Pérez, Crespo-Márquez and P. Moreu de León

Development of System Dynamic Model to Diagnose the Logistic Chain Performance of Shipbuilding Industry in Indonesia

Andi Cakravastia and Lucia Diawati

Flexibility in Manufacturing Processes: A Relational, Dynamic and Multidimensional Approach

Javier Pereira

Tensions between Production and Engineering Units: A System Dynamics Model

Qiang Lu, Kambiz Maani and Susan Byrne

Methodology Comparison and Mixes

SD and Prospective: A Marriage of Convenience

Fabián H. Szulanski

Evaluating Oil & Gas Assets Through Simulation and Scenario Planning (abstract only)

M. Vannan and W. Glass-Husain

A Comparison of System Dynamics (SD) and Discrete Event Simulation (DES)

Al Sweetser

System Dynamics: A New Tool for TQM

Shoji Hidaka

Goldratt's "Theory of Constraints" Thinking Processes: A Systems Methodology linking Soft with Hard

Victoria Mabin

Integration of SD and GIS for Land Use Planning: A Case Study of an Urbanizing Area in China (abstract only)

Ling Shi

Linking 'Soft' With 'Hard': A Case of Health System Planning in a Developing Country

Shams-ur Rahman and David K Smith

Model Impact-Implementation

Introducing System Dynamics in Small Entrepreneurial Firms — Some Critical Issues from a Field Analysis (abstract only)

E. Bivona

System Dynamics Models and the Object-Oriented Paradigm

Warren W. Tignor

Getting to Implementation: Towards a System Dynamics Change Management Framework

B. R. Campbell and G. M. McGrath

Optimisation

Beyond Pitch/Duration Scoring: Towards a System Dynamics Model Of Electroacoustic Music

Ian Whalley

SYDPIM Integration of SD and PERT/CPM Tools: Assessing Fagan Analysis in a Large-scale Software Project

Alexandre G. Rodrigues

Decision Engineering of an Decyl-lactose Generation Chemical Laboratory Process Assisted by a Diploid Genetic Algorithm and a Multicriterion Aggregation Method

S. Massebeuf, C. Fonteix, L. N. Kiss and I. Marc

A Case of Interaction between Systems Dynamics and Linear Programming: The Rapim-Pirenaica Model

Silvio Martínez, Francisco Gordillo, Elena López and Ismael Alcalá

Optimising Workforce Structure the System Dynamics of Employment Planning

Keith T Linard, Mark Blake and David Paterson

Designing a Rational Process for Risk-taking

Mohamed Saleh and Magne Myrtveit

Performance Determination of a Single Cell Oil Process

L. Muniglia, S. Papanikolaou, C. Fonteix and I. Marc

A Method for Reconciling Dynamic Complex Conflicts among the Hierarchy of Objectives

(abstract only)

Showing H. Young and Chia Ping Chen

Organisational Learning/Knowledge Management

A Search for New Methodology to Create a Learning Organization

Shigehisa Tsuchiya

Universities as Learning Organisations — Or Not!

Peter L Galbraith

Cultural Historical Activity Theory and Systems Thinking: A Marriage to be Arranged?

(abstract only)

P. Capper, B. Cavana, R. Hill and K. Wilson

Organizational Learning as a Feedback System

Young Showing, Tu Yi-Ming and Ya-Tsai Tseng

Group Decision Making for Environmental Problems: The Virtual Learning Organisation

(abstract only)

J. Wolfenden and R. Gill

Calm View On Knowledge Economy

Qifan Wang and Yulin Fang

A Systems Approach to Knowledge Creation

Warren Topp

Different Styles of Learning Organizations (abstract only)

A. K. Varoglu, B. Atçi and Y. Ercil

Organisational Performance

Dynamics of Knowledge Accumulations the Example of the Management Consulting Industry (abstract only)

Francesco Sacco

Development of a Model for Quality to Enhance Organisational Learning

Kamlesh Shah, Purnendu Mandal and Peter Love

The Practical Applications of System Dynamics to Identify System Specific Maintenance Strategies (abstract only)

John McLuckie, Mark Heffernan and Trevor Armstrong

Beyond Reform to Performance Leadership in the Public Sector

Russell Craig and Peter Cooper

Addressing the Strategic Issues Around Training and Development Investments and Realized Benefits (abstract only)

Mark D. Choudhari

How Managerial Incentive Systems Influence the Company's Business Performance — A System Dynamics Model and its Results

Frank Schoeneborn

A Comprehensive Objective Performance Evaluation of the Accident Compensation Corporation of New Zealand's Main Branches (abstract only)

M. Meimand, B. Cavana and R. Laking

Organising for Accountability in the New Zealand Department of Conservation

Keith Johnston and Peter Cooper

The Use of Systems Thinking and System Dynamics as Tools for Business Excellence and Knowledge Management (abstract only)

E. Wolstenholme

Organisational/Strategic Change

Building and Conceptualising Generic Model Structures to address Fundamental Business Change

Graham W. Winch, Daniel J. W. Arthur and Colin Grey

The Role of Change Agents in an IT Services Corporation: A Systems Approach to Developing a Strategy for Improvement

Chris J. Rowland

Learning From Evolution: A Study of Acer's Corporate Strategy

Anil Kumar Sahai

Reorganization and Divestiture: Using System Dynamics to Navigate Perilous Waters (abstract only)

Donna Mayo, Jonathan Pott and Alan Graham

Harnessing the Natural Energy of Organizational Discontent (abstract only)

Douglas R. Rosensteel

Facilitating Students' Perception of Systemic Concepts through "Systemic Exploratories"

Martin Schaffernicht

Unlocking People Potential as the Key to a Dynamic Organisation

Robyn Hill and Anne Younger

Developing a Success Model for Income Support

Philip Gandar and Miles Shepheard

Need an Environmental Interface in VSM? Ask Managers in Crises (abstract only)

Q. Lu, S. Byrne and K. Maani

Philosophical Issues

Mental Model — Eastern Perspective

K. Gopalan

Merits of Different Formats for Learning and Implementing System Dynamics

Octavio Carranza and Juan C. Rego

After 40 Years, has System Dynamics Changed?

Juan C. Rego

The Future of System Dynamics in Post Soviet Countries: Lithuanian Case (abstract only)

S. Norvaisas

Cellular Automata: A Useful and Effective Tool for Reading, Interpreting, Describing, Forseeing the Behaviour of Urban Systems

Arnaldo "Bibo" Cecchini and Enrico Rinaldi

Towards an Understanding of Systemicity: An Investigation into Systems Thinking (abstract only)

G. Cao, S. Clarke and B. Lehaney

A Taoist Foundation of Systems Modeling and Thinking

Karl R. Lang and Jing Lydia Zhang

A Systems Rationale for an Evolutionary Epistemological Approach (abstract only)

Simon James

Public Policy

Modeling and Analysis of Population Dynamics in India (abstract only)

K. Vizayakumar

Systems Thinking in the Management of Korean Economic Crisis

Dong-Hwan Kim

Designing and Testing Policies to Prevent Office Building Oversupply Cycles

Max Kummerow

Strategic Analysis of and Scenario Planning for the Turkish Public Social Security System

Sibel Güven, Erol Sayin and Mustafa Akmaz

Risk Assessment and Multiple Frames: A System Dynamics Policy Integration of the 1998 Springfield, Illinois Leptospirosis Outbreak (abstract only)

Kevin O'Neill and Lee Frost-Kumpf

Dynamics of Electricity Supply and CO2 Emissions; A System Dynamics based Investigation of Pakistan's Case (abstract only)

Qudrat-Ullah and P. I. Davidsen

Resource Management

Dynamic Modeling of Corporate Reputation Management Process

Sy-Feng Wang, Wen-hsien Chang and Jen-shou Yang

Some Issues in Building System Dynamics Models for improving the Resource Management Process in Higher Education

Michael Kennedy and Chris Clare

Modelling Strategic Assets as a Dynamic System of 'Primary' and 'Derivative' Resources

Carmine Bianchi

Benefits of the Activity Based Costing (ABC) for SMEs: A System Dynamics Perspective (abstract only)

Adolfo Crespo, José-María Sarriequi and Carmine Bianchi

Role of Modelling/Operations Research (OR)

System Dynamics and Decision Support in Complex Systems

Miroļjub Kljajić, Andrej Škraba and Igor Bernik

Modeling as Thinking Process: The Leverage is Thinking Role, not Thinking Skill

Sy-Feng Wang

Beyond Hard and Soft Modelling. An Social-scientific Application of System Dynamics

(abstract only)

Rueylin Hsiao

Operational Research from a Critical Viewpoint

Çaglar Gven

A Concept for Organizational Decision Support Using Structure Matrix (abstract only)

T. Sumita, M. Shimazaki and T. Toyama

Soft Systems Methodology (SSM) Applications/Systemic Action Research

Systems Thinking in Tourism: Out-learning the Competitors (abstract only)

P. Walker and R. Greiner

A Soft Approach to Survey Design

L. Weston, R. Whiddett and B. Jackson

Composite Case Study Demonstrating the use of Soft Systems Methodology for Analysing Information Management

Mark Campbell Williams and Sunil Gunatunge

The Evolution of Competitive Capability in New Zealand — A Systems-Based Perspective (abstract only)

John Brocklesby, Colin Campbell-Hunt, Richard Dunford, Deborah Jones, Pat Walsh and Laurie Corbett

Harnessing the Power of Living Systems' Cycles

Dianna Wuagneux

Action Research as a Means of Enhancing Dairy Farmer Learning for Management

Claire Massey and Evelyn Hurley

Managing Improvement Amongst Autonomous Actors with OMCA: The Case of the Chilean Educational Reform

Martin Schaffernicht

Organisational Participation and Being a Participant: Ships, Pirates and Crocodiles

Marion Helme

Strategy and Systems Thinking/System Dynamics

A System Dynamics Approach to Feasibility Studies: An Assessment of the Learning Curve effects and Associated Risk in a Biomass Gasification Project (abstract only)

Imrana A. Umar

System Thinking and Corporate Strategy

Carlo Brugnoli

Towards a POSIT-ive Systemic Perspective of Strategic Management: A Natural Language Approach

John Driver and Panos Louvieris

Designing High-leverage Strategies and Tactics

Nicholas C. Georgantzas and James L. Ritchie-Dunham

A System Dynamics Approach to the Analysis of the Intra-organisational Ecology Theory

Edoardo Mollona

To Privatize or Not to Privatize, That is the Question — Should Outsourcing be a Guiding Idea for Your Organization — The New Zealand Story (abstract only)

R. Sankarakrishnan

The Rise and the Fall of the Subscribers in a Small Publishing Company — How can be Possible to Reach a Profitable and Sustainable pattern? (abstract only)

E. Bivona

Structure-Behavior Issues

Applying System-Wide Discovery Analysis to the Market Growth Model

Annabel Membrillo, James L. Ritchie-Dunham and Conrado Garcia Madrid

Simulating Complex Non-linear Dynamic Systems in Marketing

Peter November and David Johnstone

A Causal-Behavioral Map of the Predator-prey Oscillatory System using Pathway Participation Metrics (abstract only)

M. Mojtahedzadeh

Sustainable Development

Environmental Performance for the Long Term Industrial Competitiveness: A System Dynamic Study of Chinese Cement Industry (abstract only)

Xu Honggang and Steve Arquitts

Enhancing Emancipatory Systems Methodologies within a Pluralistic Critical Systems Framework for Sustainable Development

Yiheyis Taddele Maru and Keith Woodford

Thinking on Building New Managerial Theory

Qifan Wang and Lijuan Yu

Sustainable Development and Sustainable Growth: Conceptual Plain or Points on a Conceptual Plain?

John P. Ulhoi and Henning Madsen

The Automobile Recycling Industry in North America

Pavel Zamudio-Ramirez

Systems and Ethics: Thinking about Human Needs and Sustainability for the Next Millennium

John Peet

Teaching

Educating Senior Managers in Systems Concepts: Case Study of Public Health Policy Development

Michael J Fett and Keith T Linard

Episodic and Sustained Use of Systems in k-12 Classrooms — The Approach Fits the Goal (abstract only)

Ron Zaraza, Timothy Joy and Scott Guthrie

**Stock-Flow Fundamentals, DT and Feedback Loop — From Dynamics to System Dynamics
(abstract only)**

Kaoru Yamaguchi

Mini-Model Presentations: A Tool For Teaching Dynamics Systems Thinking (abstract only)

S. Guthrie

The Meaning for 3-6 Grade Students Learning Systems Thinking

Chiang-Kuo Tu

Teaching our Children Well: What Oregon Teachers Have Learned After Six Years of System Dynamics Instruction at the K-12 Level (abstract only)

Timothy Joy

Team Learning and Performance

How to use Dialogue as a Practical Way to Start Applying the Principles of Complexity Theory to a Traditional Organisation

Elisabet Wreme

Trust and Distrust in Long-Term Business Relationships

R. Schwarz and J. W. Ewaldt

**Modelling the Effect of Cognitive Variables on Group Brainstorming Using System Dynamics
(abstract only)**

Dianna Azevedo-Carns

The Prime Dynamics of System Computation

Tu Yi-Ming and Wang Wei-Young

Telecommunication/IT

Modelling Customer Behaviour in a Competitive Environment

Ahmed Mohamed and Frederic Lagacherie

A System Dynamics Analysis of Electronic Commerce

Jaeho Juhn, Won-Gyu Ha and Nam Hee Choi

Systems Thinking for the Next Millennium: The Future of the IT Services Industry

Finn Jackson

Modelling Market Opportunities for Telecommunications in the 21st Century

Alison Brady, Ann Matthews and Frederic Lagacherie

Dynamic Modelling to Assist in the Understanding of Consumer Take-up and the Diffusion of New Telecommunications Services

Jo Osborne

Strategic Planning in the Dutch Telecommunications Industry

Cyprian A. Smits

Internet Futures: Growing Market Intelligence to Allow Telecoms Operators to Seize the Opportunities of the Information Age

Frederic Lagacherie

Competition in the Spanish Telecommunications Market: A Co-evolutionary, Differential Game Approach

Marta Gala, Silvio Martínez Vicente, Francisco Gordillo and Ismael Alcalá y Javier Aracil

A Systems View of the Drivers of IT Investment for a Firm (abstract only)

A. Kanshik, A. Swaroop and R. Roy

A Dynamic Model for Understanding Individual's Interactive and Communications Requirements in a Telecoms Environment

Jo Osborne

Transportation and Infrastructure

Virtual Technology Assessment for Viable Policy Options: A System Dynamics Approach

Jan Faber and Tom P. Alkim

System Dynamics of Sustainable Port Management (abstract only)

B. Baxter

Multicriterion Analysis Aided Project Rankings under Payoutflows Homogenization Constraint in Transport Infrastructural Investment

Laszlo Nandor Kiss

A System Dynamics Study on the Liberalization Plans of the Philippine Automotive Industry

Ma. Jilla Phoebe S. Decena

A Geographically Disaggregated Model of Urban Settlement Patterns (abstract only)

Nathan B. Forrester

A Generic Model of Infrastructure Maintenance Management (abstract only)

Jamal Nasir

An Application of System Dynamics and Risk Management Techniques to School Bus Safety Policy

Bronwyn Howell and Mark Obren

Using a Systems Approach to Unravel Feedback Mechanisms Affecting Urban Transport Choices

Mark Bachels, John Peet and Peter Newman

ASTRA: Assessment of Transport Strategies

Wolfgang Schade, Angelo Martino and Michele Roda

Validation and Conceptualization

Component-Based Modelling and Simulation: A Case for Simulation Software Architecture

Ddembe Williams and Michael Kennedy

Validation of a Simulation of Information Systems Development Project Management

Andrew Martin

Increasing User Confidence in System Dynamics Models Through Use of an Established Set of Logic Rules to Enhance Forrester and Senge's Validation Tests

Steven J. Balderstone

Full Text Search

To search the text of an single paper, use Tools/Find in Acrobat Reader 3.0 and Edit/Find in Acrobat Reader 4.0.

To search the full text of all papers on this CD select Tools/Search/Query... in Acrobat Reader 3.0 and 4.0.

If you don't have a Tools menu, or if you don't have a Tools/Search item, then the version of Acrobat Reader that you are using is missing the optional full text search module. Please refer to README.TXT on the CD for instructions about getting a version of Acrobat Reader with the optional full text search module installed.