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〈拠点形成活動〉情報基盤、評価システム、国際交流  
**知識創造モデルとナレッジマップ**

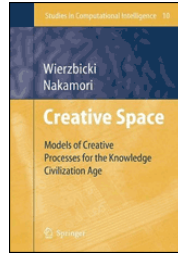
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《成果報告》

2008年3月31日 現在

● Books and Book Chapter

- Wierzbicki, A.P., The Development of Systems Science: Concepts of Knowledge as Seen from the Western and Eastern Perspective. In M. Lucertini, A. Milan Gasca, F. Nicolo (eds): Technological Concepts and Mathematical Models in the Evolution of Modern Engineering Systems, Birkhäuser, Basel, 2004.
- Wierzbicki, A.P., Nakamori, Y., Creative Space: Models of Creative Processes for the Knowledge Civilization Age, Springer Verlag, Berlin-Heidelberg, 2006.



- Wierzbicki, A.P., Nakamori, Y., Creative Space: a Method of Integration of Knowledge Creation Theories. In A. Kukliński, B. Skuza (eds.): Turning Points in the Transformation of Global Scene. Polish Association for the Club of Rome, Warsaw 2006, 127-148, 2006.
- Wierzbicki, A.P., Nakamori, Y., Creative Environments: Supporting Creativity for the Knowledge Civilization Age. Springer Verlag, Berlin-Heidelberg, 2007.



- Wierzbicki A.P., Rationality of Choice versus Rationality of Knowledge. In. R.Avenhaus, I.W. Zartman (eds): Diplomacy Games, Springer, Berlin-Heidelberg, 2007.
- Wierzbicki, A.P., Informed Systems Approach, in Tsubaki T., Nishina K., Yamada S. (eds) The Grammar of Technology Development, 2007.
- Zhu, Z.C., Pragmatism and knowledge management. In Advances in multiple criteria decision making and human systems management, Y Shi, DL Olson and A Stam (eds.), 269-271, ISBN: 978-1-58603-748-2, IOS Press, 2007.
- Zhu, Z.C., Constructing healthcare knowledge. In Healthcare knowledge management: issues, advances and successes, RK Bali and A Swivedi (eds.), 112-129, ISBN: 0-387-33540-4, Springer, 2006.
- Zhu, Z.C., New role of systems science: informed systems approach. In Creative space: models of creative processes for the knowledge civilisation age, Wierzbicki, A.P. and Nakamori, Y. (eds.), 161-215, ISBN: 3-540-28458-3, Springer, 2006.
- Zhu, Z.C., WSR decisions for a sustainable future. In the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Encyclopaedia of Life Support Systems, EOLSS Co. Ltd., Paris, 2003.
- Zhu, Z.C., Linstone, H.: Towards synergy in multi-perspective management: An American-Chinese Case. In Systems Thinking Volume 4, G. Midgley (ed.), 209-226, ISBN: 0761949593, Sage, London, 2003.
- NIE, K., Tang, X.J., Systemic Modeling Approach. Xijin Tang, Kun NIE. Chapter 4.1, In Jifa Gu, Huanchen Wang and Xijin Tang (eds), Meta-synthesis Method Systems and Systematology Research, 176-186, Science Publisher (Science Press), January 2007. (In Chinese).
- NIE, K., Euler G. M. de Souza and Tunç D. Medeni, Social Network Analysis for Investigating Large Scientific Research Project., To be published in the first half of 2007 in a book "Encyclopedia of Networked and Virtual Organizations" Edited by Goran D. Putnik and Maria Manuela Cunha, an imprint of Idea Group Inc.

## ● Publication Papers

### Journal Papers

- Wierzbicki, A.P., Knowledge Creation Theories and Rational Theory of Intuition. *International Journal for Knowledge and Systems Science*, 1(1): 17-25, November 2004.
- Wierzbicki, A.P., Nakamori, Y., Creative Space: a Tool for Knowledge Integration. *International Journal for Knowledge and Systems Science*, 1(1): 26-32, November 2004.
- Wierzbicki, A.P., Przestrzeń twórcza: próba syntezy teorii tworzenia wiedzy. (in Polish: Creative Space: an Approach to the Synthesis of Knowledge Creation Theories) *Zagadnienia Naukoznawstwa* (in Polish: Problems of Knowledge Science), 4(162): 621-645, December 2004.
- Wierzbicki, A.P., Technika i zmiana: rola technik informacyjnych w cywilizacji wiedzy (in Polish: Technology and change: the role of informational technology in knowledge civilization). *Zagadnienia Naukoznawstwa* 2(168): 205-228, 2006.
- Wierzbicki, A.P., A reference point approach to coalition games. *Journal of Multi-Criteria Decision Analysis* 13:2-3: 81-89, 2006.
- Wierzbicki, A.P., Modelling as a way of organizing knowledge. *European Journal of Operational Research* 176:1: 610-635, 2007.
- Wierzbicki, A.P., Nakamori, Y., Knowledge sciences - some new developments. *Zeitschrift für Betriebswirtschaft*, in print, 2007.
- Wierzbicki, A.P., Nakamori, Y., Knowledge sciences and Nanatsudaki: A new model of knowledge creation processes. *Journal of Systems Science and Systems Engineering*, <http://dx.doi.org/10.1007/s11518-007-5036-8>, 2007.
- Tian, J., Nakamori, Y., Xiang, J. and Futatsugi, K., Knowledge Management in Academia: Survey, Analysis and Perspective, *International Journal of Management and Decision Making*, Vol.7, No.2/3, 275-294, 2006.
- Tian, J., Wierzbicki, A.P., Ren, H. and Nakamori, Y., A Study of Knowledge Creation Support in a Japanese Research Institute, *International Journal of Knowledge and System Science*, Vol.3, No.1, 7-17, March 2006.
- Zhu, Z.C., Reform without a theory: why does it work in China? *Organisation Studies*, 28, 10, 1503-1522, 2007.
- Zhu, Z.C., Editorial: complexity and systems studies: voices from China. *Systems research and Behavioural Science*, 24, 4, 403-404, 2006.
- Zhu, Z.C., Complexity science, systems thinking and pragmatic sensibility. *Systems research and Behavioural Science*, 24, 4, 445-464, 2007.
- Zhu, Z.C., Nonaka meets Giddens: a critique. *Knowledge Management Research and Practice* 4, 106-115, 2006.
- Zhu, Z.C., Complementarism vs. pluralism: are they different and does it matter? *Systems Research and Behavioural Science* 51, 6, 757-770, 2006.
- Zhu, Z.C., Needed: pragmatism in KM. *International Journal of Knowledge and Systems Science* 3, 2, 20-21, 2005.
- Zhu, Z.C., Knowledge construction as evolutionary gaming. *International Journal of Knowledge and Systems Science* 2, 4, 9-19, 2005.
- Zhu, Z.C., Exploring a sociological underpinning for the i system. *International Journal of Knowledge and Systems Science*, 1, 1, 1-8, 2004.
- Zhu, Z.C., Knowledge management: towards a universal concept or cross-cultural contexts? *Knowledge Management Research and Practice*, 2, 2, 67-79, 2004.
- Yan, J., Ma, T.J., Nakamori, Y., Constructing Ontology for Exploring the Triple Helix of Academia Industry Government. *Journal of Information and Decision science*. Accepted.
- Ren, H., Tian, J., Nakamori, Y., and Wierzbicki, A.P., Electronic Support for Knowledge Creation in a Research Institute, *Journal of Systems Science and System Engineering*, 16(2), 235-253, 2007.
- Wierzbicki A. and Ren H.T., Implementing Creative Environments for Scientific Research, *Journal of Information and Decision Science*. (Accepted), 2007.
- Tang, X.J., NIE, K., Liu, Y.J., Meta-synthesis approach to exploring constructing comprehensive transportation system in China. *Journal of Systems Science and Systems Engineering*. Vol. 14, No. 4, 476-494, December, 2005.

- NIE K., Wierzbicki A.P., Dobzanski R., and Nakamori Y., Enabling ontology driven semantic search for research topics, Paper accepted by International Journal of Knowledge and Systems Sciences.
- NIE K., Ma T.J., Nakamori Y., An approach for understanding emerging research disciplines--the case of Knowledge Management, Submitted to Systems Research and Behavioral Science, August 20, 2007, (in review).
- NIE K., Lin, S.F., Ma T.J., Nakamori Y., Connecting Informal Networks to Management of Tacit Knowledge, Submitted to Group and Organization Management, December27, 2007. (In review )
- NIE K., Ma T.J., Nakamori Y., Building a taxonomy of understanding knowledge management, Paper accepted by the online journal-Electronic Journal of Knowledge Management (EJKM)

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Project Meeting

## Conference Papers

- Wierzbicki, A.P., Knowledge Theory at the beginning of the Civilization Era of Informational and Knowledge Economy. Plenary paper at ISKSS (International Society for Knowledge and Systems Sciences) The First International Symposium on Knowledge Management for Strategic Creation of Technology, Japan Advanced Institute of Science and Technology, Tatsunokuchi, Ishikawa, Japan, March 2004.
- Wierzbicki, A.P., Nakamori, Y., Multiple Criteria Decision Support versus Knowledge Theory. Paper at International Conference on MCDM 2004 (Multiple Criteria Decision Making), Whistler, Kanada, August 10, 2004.
- Wierzbicki, A.P., A Reference Point Approach to Coalition Games. Paper at International Conference on MCDM 2004 (Multiple Criteria Decision Making), Whistler, Kanada, August 9, 2004.
- Wierzbicki, A.P., Telecommunications, Multiple Criteria Analysis and Knowledge Theory, plenary paper at IV<sup>th</sup> International Conference on Decision Support for Telecommunications and Information Society, National Institute of Telecommunications, Warsaw, September 2, 2004 (repeated by invitation of organizers as a plenary paper at MMTN' 04, First Workshop on Multicriteria Modelling in Telecommunication Network Planning and Design, INESC-Coimbra and University of Coimbra, Portugal, September 13, 2004.
- Wierzbicki, A.P., Nakamori, Y., Systems Approach to Knowledge Theory: Creative Space and Creative Environments. Plenary paper at CSM' 04 (18<sup>th</sup> Workshop on Methodologies and Tools for Complex Systems Modeling and Integrated Policy Assessment), International Institute for Applied Systems Analysis, Laxenburg, Austria, September 6, 2004.
- Wierzbicki, A.P., Nakamori, Y., Creative Space and Creative Environments, plenary paper, JAIST Forum 2004: Technology Creation Based on Knowledge Science: Theory and Practice, Ishikawa High-Tech Exchange Center, November 10, 2004.
- Wierzbicki, A.P., Nakamori, Y.: Knowledge Creation and Integration: Creative Space and Creative Environments. 38<sup>th</sup> Hawaii International Conference on System Science, January 2005; Best Paper Award.
- Wierzbicki, A.P., Informed Systems Approach, Decision and Creativity Support. Paper presented at International Workshop: The Grammar of Technology Development, University of Tsukuba, Tokyo Campus, Tokyo, January 17, 2005.
- Wierzbicki, A.P., Technology and Change: The Role of Technology in Knowledge Civilization. I<sup>th</sup> World Congress of IFSR, Kobe, November 2005.
- Kameoka A., Wierzbicki, A.P., A Vision of New Era of Knowledge Civilization. I<sup>th</sup> World Congress of IFSR, Kobe, November 2005.
- Wierzbicki, A.P., Nakamori, Y, Towards Creative Environments: Conclusions from Creative Space. 39<sup>th</sup> Hawaii International Conference of Systems Science, 2006.
- Wierzbicki, A.P., Nakamori, Y, Nanatsudaki Model of Knowledge Creation Processes. VEAM-IFIP Working Group 7.6 Workshop on Virtual Environments for Advanced Modelling, University of Hamburg, Germany, June 6 and 7, 2006.
- Wierzbicki, A.P., Tian, J., Ren, H.T., The Use of Reference Profiles and Multiple Criteria Evaluation in Knowledge Acquisition from Large Databases. VEAM-IFIP Working Group 7.6 Workshop on Virtual Environments for Advanced Modelling, University of Hamburg, Germany, June 6 and 7, 2006.
- Wierzbicki, A.P., The emergence of knowledge sciences and a new episteme. KSS' 2006: The 7<sup>th</sup> International Symposium on Knowledge and Systems Science, Beijing, China, September 22-25, 2006.
- Wierzbicki, A.P., Nakamori, Y., Nanatsudaki: a new model of knowledge creation processes. The 7<sup>th</sup> International Symposium on Knowledge and Systems Science, Beijing, China, September 22-25, 2006.
- Ren, H., Tian, J., Wierzbicki, A.P., Electronic support for knowledge creation in a research institute. The 7<sup>th</sup> International Symposium on Knowledge and Systems Science, Beijing, China, September 22-25, 2006.
- Wierzbicki, A.P., Multiple objective optimization procedures with progressive elicitation of preferences: Reference point approaches. Schloss Dagstuhl Seminar 06501: Practical Approaches to Multi-Objective Optimization.
- Tian, J., Wierzbicki, A.P., Ren, H. and Nakamori, Y., A study on knowledge creation support in a Japanese research institute. Proceeding of First International Conference on Knowledge Science, Engineering and Management (KSEM06), Springer, Verlag Berlin Heidelberg, LNAI 4092, 405-417, Guilin, China, August 5-8, 2006.
- Tian, J., Nakamori, Y. and Wierzbicki, A.P., Knowledge management and knowledge creation in academia: A study based on surveys in a Japanese research university. Proceeding of the 3rd Asia-Pacific International Conference on Knowledge Management (KMAP2006), Hong Kong, December 11-13, 2006.
- Wierzbicki, A.P., Reference point approaches and objective ranking. Schloss Dagstuhl Seminar 06501: Practical Approaches to Multi-Objective Optimization, 2006.

- Wierzbicki, A.P., The Problem of Objective Ranking: Foundations, Approaches and Applications. 6-th International Conference on Decision Support for Telecommunications and Information Society, Warsaw, July 2007.
- Wierzbicki, A.P., Nakamori, Y., Testing Knowledge Creation Theories. 23rd IFIP TC 7 Conference on System Modelling and Optimization, Cracow, Poland, July 2007.
- Wierzbicki, A.P., Models of Knowledge Creation Processes and Ontological Engineering. CSM' 07: 21<sup>th</sup> Workshop on Methodologies and Tools for Complex Systems Modeling and Integrated Policy Assessment, IIASA, Laxenburg, Austria, August 2007.
- Tian, J., Nakamori, Y., Xiang, J., and Futatsugi, K., Knowledge Management in Academia: Survey, Analysis and Perspective, Proceeding of the 17<sup>th</sup> International Conference on Multiple Criteria Decision Making (MCDM2004), 14p, in CD, Whistler, B.C., Canada, August6-11, 2004.
- Tian, J., Kobayashi, T., and Nakamori, Y., Perspectives of Developing Knowledge Management System in Academia—A Survey-based Study in Research University, Proceeding of the 19<sup>th</sup> Academic Conference of the Japan Society for Science Policy and Research Management, 694-697, Tokyo Institute of Technology, October 15-16, 2004.
- Tian, J. and Nakamori, Y., Building Laboratory Knowledge Management System Based on i-system theory, Proceeding of the 5<sup>th</sup> International Symposium on Knowledge and System Science (KSS2004), 50-55, Ishikawa, Japan, November10-11, 2004.
- Tian, J. and Nakamori, Y., Consideration on a Service System for Knowledge Management in Scientific Laboratories, Proceeding of International Conference on Services Systems and Services Management (ICSSSM2005), IEEE System, Man, and Cybernetics Society Press, 886-891, Chongqing, China, June 13-15, 2005.
- Tian, J. and Nakamori, Y., Knowledge Management in Scientific Laboratories: a Survey-based Study of a Research Institute, Proceeding of the First World Congress of the International Federation for Systems Research (IFSR2005), 19-26, Kobe, Japan, Nov.14-17, 2005.
- Tian, J., Wierzbicki, A.P., Ren, H. and Nakamori, Y., A Study on Knowledge Creation Support in a Japanese Research Institute, Proceeding of First International Conference on Knowledge Science, Engineering and Management (KSEM06), Springer, Verlag Berlin Heidelberg, LNAI 4092, 405-417, Guilin, China, August 5-8, 2006.
- Ren, H., Tian, J., Nakamori, Y., and Wierzbicki, A.P., Electronic Support for Knowledge Creation in a Research Institute, Proceeding of 7<sup>th</sup> International Symposium on Knowledge and System Science, 55-62, Beijing, China, September 23-25, 2006.
- Tian, J., Nakamori, Y. and Wierzbicki, A.P., Knowledge Management and Knowledge Creation in Academia: A Study Based on Surveys in a Japanese Research University, the 3rd Asia-Pacific International Conference on Knowledge Management (KMAP2006), in CD-Row, Hongkong, December 11-13, 2006.
- Tian J., Wierzbicki A. P., Ren, H. and Nakamori, Y., Constructing an Ontology for a Research Program, Proceeding of the 8<sup>th</sup> International Symposium on Knowledge and Systems Sciences (KSS2007), Ishikawa, Japan, Nov.5-7, 2007.
- Tian, J., Wierzbicki A. P., Ren, H. and Nakamori Y., Constructing an Ontology for a Research Program from a Knowledge Science Perspective. In: Zhang, Z. and Siekmann, J. (eds). Knowledge Science, Engineering and Management, KSEM2007. LNAI, Vol.4798, 372-383, Springer, heidelberg, 2007.
- Song, H.G., Kondou, S., NIE, K., Toward A Trialectic Structure of Knowledge-Creation Ba. In Gu J.F., Nakamori Y., Wang Z.T., and Tang X.J. (eds): Knowledge and Systems Sciences: Toward Knowledge Synthesis and Creation (Proceeding of KSS2006), Lecture Notes in Decision Sciences 8, Global-Link Publisher, Beijing, China, 39-45, September 22-25, 2006.
- NIE, K., Tang, X.J., Gu, J.F., Nakamori, Y., Understanding a Large Scientific Project from Network Perspective. Presented at The First World Congress of the International Federation for Systems Research (IFSR2005): The New Roles of Systems Sciences for a Knowledge-based Society, International Conference Center Kobe, Japan, November 14-17, 2005.
- NIE, K., Ji, Z., Song, H.G., Nakamori, Y., Tang, X.J., Informal Networks and Management of Tacit Knowledge. In Gu J.F., Nakamori Y., Wang Z.T., and Tang X.J. (eds), Knowledge and Systems Sciences: Toward Knowledge Synthesis and Creation (Proceeding of KSS2006), Lecture Notes in Decision Sciences 8, Global-Link Publisher, Beijing, China, 257-264, September 22-25, 2006.
- NIE, K., Ji, Z., Nakamori, Y., An Analysis of Research Topics within a Community: the Example of Knowledge Science. In: Proceeding of the 8<sup>th</sup> International Symposium on Knowledge and Systems Sciences (KSS2007), Ishikawa, Japan, November 5-7, 2007.
- NIE, K., Ma, T.J., Nakamori, Y., Building a Taxonomy of Understanding Knowledge Management. 8<sup>th</sup> European Conference on Knowledge Management. Consorci Escola Industrial de Barcelona (CEIB), Barcelona, Spain, September 6-7, 2007.

- Ren H.T., Nakamori Y., A Prototype System for Using Structured Document to Support Knowledge Sharing, ICSSSM'05, International Conference on Services Systems and Services Management, 2005.
- Ren H.T., Nakamori Y., A Network System for Knowledge Sharing in Learning Organization, IFSR2005 (First World Congress of the International Federation for Systems Research), 2005.
- Ren H.T., Tian J., Nakamori Y. and Wierzbicki A.P., Electronic Support for Knowledge Creation in a Research Institute, KSS' 2006, Beijing, China, September 22-25, 2006.
- Yan, J., Nakamori, Y.: Study on Roadmapping Methods for Supporting Scientific Research. The 5<sup>th</sup> International Symposium on Knowledge and Systems Sciences (KSS2004) Ishikawa, Japan, 77-80, November 10-12, 2004.
- Yan, J., Nakamori, Y.: Study on Roadmapping Process with Integration Methods for Supporting Scientific Research. Workshop for Knowledge Management and Knowledge Creation, Dalian, China, 28<sup>th</sup>, March 2005.
- Yan, J., Nakamori, Y. :Study on a Roadmapping System as a Decision Making Process for Supporting Scientific Research. International Conference on Services Systems and Services Management (IEEE/SSSM '05) , 1205-1209, Chongqing, China, June 13-15, 2005.
- Yan, J., Nakamori, Y. (2005). Study on a Roadmapping Process Model as a Way to Support Technology Creation in University Setting. The First World Congress of the International Federation for Systems Research (IFSR 2005), abstracts 50-52, Kobe, Japan, November 14-17, 2005.
- Yan, J., Nakamori, Y. (2006). Study on Roadmapping Approach and Supporting Systems. Workshop for Knowledge Management and Knowledge Creation, Dalian, China, 27<sup>th</sup> March, 2006.
- Yan, J., Nakamori, Y., Road Mapping for Supporting Scientific Research of Technology Creation in Academy. Final workshop of YSSP 2006IIASA, Vienna, Austria, August 25<sup>th</sup>, 2006.
- Yan, J., Nakamori, Y., Exploring the Triple Helix of Academia-Industry-Government for Supporting Road Mapping in Academia. Workshop for Knowledge Management and Knowledge Creation. Dalian, China, March 5<sup>th</sup>, 2007
- Yan, J., Nakamori, Y., A Road Mapping Approach for Research Cooperation among Academia Industry and Government The 8<sup>th</sup> International Symposium on Knowledge and Systems Sciences (KSS2007) Ishikawa, Japan, 2007.

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