

# **Curriculum Vitae - In three versions**

(CV Charles Edquist – 2019-08-30)

(Including publication lists in the full CV)

**Charles Edquist**  
CIRCLE  
Lund University

<http://charlesedquist.com>

August 30, 2019



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## **INTRODUCTION: THE THREE VERSIONS OF THE CV**

The three versions of my CV follow below:

- First, a very short summary of my CV, which can be seen as a preview of what comes later. I call it **THE MINI-CV** (1 page).
- Thereafter, a somewhat longer version where, I try to capture the main thrust of my activities. Complete lists of publications, and the like, are not included there, but some publications are mentioned as examples. I call it **THE MEDIUM-LENGTH-CV** (24 pages).
- Finally, my detailed CV, where much of my activities are included: all publications (from 1986), many recent conferences attended, and so on. I call it **THE FULL CV** (48 pages).

**Please read the version that suits your purpose!**

**/Charles Edquist**

## A. THE MINI-CV (1 page)

I have been the Holder of the Ruben Rausing Chair in Innovation Research at CIRCLE, Lund University, Sweden, since February 2003 and have previously held a Chair at the University of Linköping. My publications include books and articles on innovation processes, innovation systems and innovation policy. Of these, the edited volumes “Systems of Innovation: Technologies, Institutions and Organizations” (1997), “Small Country Innovation Systems: Globalization, Change and Policy in Asia and Europe” (2008; in 2012 also in Chinese), and my latest “Public Procurement for Innovation” (2015) constitute contributions to the development of the so-called Systems of Innovation (SI) Approach. So does the chapter “Systems of Innovation: Perspectives and Challenges” (2005), in the *Oxford Handbook of Innovation*. I have made many contributions to the field of innovation policy and governance of innovation systems, the latest being articles in *Science and Public Policy* (2015) and *R & D Management* (2015). That I am among the 50 (or so) most cited innovation researchers (out of 6 – 7 000) in the world is testimony to the impact of my research. My most cited book is on public procurement for innovation. I was given the award for best paper for “Competence Building: A Systemic Approach to Innovation Policy” at the Atlanta Conference of Science & Innovation Policy, Georgia, USA, 26-28 September 2013.

I have had comprehensive international experience acquired from longer stays at various universities, a large number of appearances as keynote speaker and *sejours* as a consultant in many countries. A considerable number of the conferences have involved public policy-makers, academics and representatives of firms. I have been engaged in comprehensive evaluations of “technology bridging” organizations (in Linköping, Sweden, 1999) and systems, including the Finnish National Innovation System for the Finnish Government in 2009; as well as consultancy tasks on almost all the continents, collaborating with numerous international organizations such as OECD, UNIDO, EU, UNCTAD, ILO, UNDP, UNESCO, Swedish organizations such as the Ministry of Industries, NUTEK, and VINNOVA and firms such as Astra-Zeneca, SAAB Aerospace, and Volvo Trucks. I was, during 2011-2012, a Member of The Research Policy Advisory Committee to the Swedish Government (Forskningsberedningen), chaired by Jan Björklund, Minister for Education and Deputy Prime Minister. I have also recently been working on three different evaluation projects with Sweco Eurofutures, a large private consultancy firm in Stockholm.

Regarding my experience in research management, I was one of the founders of CIRCLE (Centre for Innovation, Research and Competence in the Learning Economy) at Lund University in 2004 - [www.circle.lu.se](http://www.circle.lu.se). During my seven years (2004 - 2011) as Director, the research staff increased from zero to 40 (representing 12 nationalities and 15 disciplines). By 2011, CIRCLE had established itself as one of the largest innovation research centres in Europe, and a leading international centre for research and advice on R&D, innovation, knowledge creation, entrepreneurship and economic dynamics.

At present, I am working mainly as a researcher and as an advisor to governments, public organizations and firms on issues related to innovation policy and strategy in a wide sense. One example is the Rausing Project on Innovation Processes and Innovation Policies, which addresses theoretical, empirical and policy-oriented aspects of innovation processes in innovation systems. It analyses the *determinants* (‘ten activities’, including entrepreneurship and demand-side instruments such as innovation procurement) and *consequences* (growth, employment, environmental and social effects) of innovations, as well as their *measurement* (innovation indicators). Focus is on the foundations of *innovation policies*, i.e. theory, rationales, objectives, policy instruments and practices. During 2015 – 2018, I was a member of the Swedish National Innovation Council (NIC, Nationella innovationsrådet) which is chaired by the Prime Minister, Stefan Löfven. The NIC consists of ten external members and five government ministers.

Visit <http://charlesedquist.com> for more recent information.

## **B. THE MEDIUM-LENGTH CV (24 pages)**

### **1. Personal details**

Charles Edquist  
Centre for Innovation Research and Competence in the Learning Economy (CIRCLE)  
Lund University, Sweden

Email: [Charles.edquist@circle.lu.se](mailto:Charles.edquist@circle.lu.se)

Personal Website: <http://charlesedquist.com> – includes more up-to-date information

Work Website: [www.circle.lu.se](http://www.circle.lu.se) – click staff and then my name (includes this CV)

Twitter: @CharlesEdquist

### **2. Degrees**

Bachelors in Statistics, Economics and Economic History at Lund University, Sweden;  
Master of Arts Degree in Economics from University of Berkeley, California, USA;  
PhD in Economic History from Lund University  
Docent (Habilitation) at Umeå University, Sweden

### **3. Positions**

I have been the Holder of the Ruben Rausing Chair in Innovation Research at CIRCLE, Lund University, Sweden, since February 2003 and before that, I had a Chair at the University of Linköping (1986-2003). I have also worked at various other places for varying lengths of time: UC Berkeley (1973-74 and 1991-92), SPRU (Brighton), CRIC (Manchester), ISEG (Portugal), IFRIS Paris (Oct 2011-May 2012) and Madrid (UAM – Accenture Visiting Fellow, March 1-31, 2019).

### **4. Selected publications**

My publications include numerous books and articles on innovation processes, innovation systems and innovation policy, with some works translated into Swedish, Chinese, French and English. Of these, the edited volumes “Systems of Innovation: Technologies, Institutions and Organizations” (1997) and “Small Country Innovation Systems: Globalization, Change and Policy in Asia and Europe” (2008), published in Chinese in 2012, constitute contributions to the development of the so-called Systems of Innovation (SI) Approach. So does the chapter “Systems of Innovation: Perspectives and Challenges” (2005) in the *Oxford Handbook of Innovation*. I have made many contributions to the field of innovation policy and governance of innovation systems, the latest being articles in *Technological Forecasting and Social Change* (2013), *Research Policy* (2012) and *Industrial and Corporate Change* (2011). To indicate the depth and breadth of my publications, here follows a selection of them:

## ***Selected Books and Reports***

Please visit website <https://charlesedquist.com/> for links to publications.

Edquist, C. (2019). *Funktionsupphandling för innovation, välfärd och miljö (Functional Procurement for Innovation, Welfare and the Environment)*. In Swedish, but with a 4-page summary in English. (Konkurrensverket uppdragsforskningsrapport 2019:2, 56 pp., Rep.). Stockholm: Konkurrensverket (Swedish Competition Agency).

Borrás, S., and Edquist, C. (2019). *Holistic Innovation Policy: Theoretical Foundations, Policy Problems, and Instrument Choices*. UK: Oxford University Press, 320 pp.

Edquist, C., Zabala-Iturriagoitia, J., Buchinger, E., & Whyles, G. (2018). *Mutual Learning Exercise - MLE on Innovation-related Procurement* (Rep.). Brussels: European Commission. doi:10.2777/723094

Edquist, C. (2017, October 3). *Developing strategic frameworks for innovation related public procurement* (Rep.). Brussels: European Commission, 32 pp. Retrieved <https://rio.jrc.ec.europa.eu/en/library/mle-innovation-related-public-procurement-report-developing-strategic-frameworks-innovation>

Edquist, C., Vonortas, N. S., Zabala-Iturriagoitia, J. M., Edler, J. (Eds.). (2015). *Public procurement for innovation*. UK: Edward Elgar Publishing, 304 pp.

Edquist, C. (2014). *Offentlig upphandling och innovation (Public Procurement and Innovation, written in Swedish) – Rapport för Konkurrensverket (The Swedish Competition Authority)*.

Edquist, C., and Hommen, L. (Eds.). (2011). *以欧洲和□ □ 10个国家（地区）□ □ (Small country innovation systems: Globalization, change, and policy in Asia and Europe – in Simplified Chinese)*. Beijing: Science Press, 362 pp.

Edquist, C., and Hommen, L. (Ed.). *Small Country Innovation Systems: Globalisation, Change and Policy in Asia and Europe*, Edward Elgar Publishing, 2008 (published in paperback 2009), 544 pp.

Arvidsson, G., Bergström, H., Edquist, C., Högberg, D., and Jönsson, B. (2007, May). *Medicin för Sverige – Nytt liv i en framtidsbransch (Medicine for Sweden – New life into a sector of the future)*. Stockholm: SNS publishers, 205 pp.

Fulton, O., Santiago, P., Edquist, C., El-Khawas, E., and Hackl, E. (2007, September). *Thematic Review of Tertiary Education: Poland*. Paris: Organization for Economic Co-operation and Development (OECD), Directorate for Education, Education and Training Policy Division 152 pp.

Edquist, C., Gillespie, I., Rosenmöller, M., Sauer, F., Tijssen, R. (2007). *The Innovative Medicines Initiative - Assessment of Economical and Societal Impact*, European Commission, Research Directorate-General - Directorate F, Brussels.

Edler, J., Ruhland, S., Hafner, S., Rigby, J., Georghiou, L., Hommen, L., Rolfstam, M., Edquist, C., Tsipouri, L., and Papadakou, M. (2006). *Innovation and Public Procurement. Review of Issues at Stake*. Study for the European Commission (No ENTR/03/24). Fraunhofer Institute for Systems and Innovation Research.

Edquist, C., Amanatidou, E., Belitz, H., Cruz, L., Edler, J., Georghiou, L., Granstrand, O., Guinet, J., Leprince, E., Orsenigo, L., Rigby, J., Romanainen, J., Stampfer, M., and van den Biesen, J. (2003, April). *Improving the Effectiveness of Direct Public Support Measures to Stimulate Private Investment in Research – Study Report of the Working Group on Direct Measures for Directorate General Research*, European Commission, Brussels, 76 pp.

Edquist, C. (Ed.). (2003, January). *The Internet and Mobile Telecommunications System of Innovation: Developments in Equipment, Access and Content*. Cheltenham, UK: Edward Elgar Publishing, 260 pp.

Edquist, C. (2002). *Innovationspolitik för Sverige – mål, skäl, problem och åtgärder, (Innovation Policy for Sweden – Objectives, Rationales, Problems and Measures – written for the Swedish Ministry of Industry in Swedish and published by VINNOVA (The Swedish Agency for Innovation Systems), VINNOVA Forum (VFI 2002: 2), Stockholm, 69 pp.*

Edquist, C., Leif H., and McKelvey, M. (2002, May). *Skapar innovationer jobb? Produktinnovationer och processinnovationer i den kunskapsbaserade ekonomin*. The book is a translation into Swedish of *Innovation and Employment: Process versus Product Innovation* (see below), Edward Elgar Publishing, Cheltenham, UK, June 2001. (The translation was financed by the Swedish Agency for Innovation Systems, VINNOVA.) SNS Publishers, 264 pp.

Edquist, C., Hommen, L., and McKelvey, M. (2001). *Innovation and Employment: Process versus Product Innovation*. Cheltenham, UK: Edward Elgar Publishing, 214 pp.

Edquist, C., Rees, G., Larsen, K., Lorenzen, M., and Vincent-Lancrin, S. (2001, January). *Cities and Regions in the New Learning Economy*, published by the Centre for Educational Research and Innovation (CERI) of the Organization for Economic Cooperation and Development (OECD), Paris, 147 pp.

Edquist, C., Hommen, L., and Tsipouri, L. (Eds.). (2000). *Public Technology Procurement and Innovation*. Boston/Dordrecht/London: Kluwer Academic Publishers, 311 pp. (includes six co-authored chapters).

Edquist, C., and McKelvey, M. (Eds.). (2000). *Systems of Innovation: Growth, Competitiveness and Employment*, an Elgar Reference Collection. Cheltenham, UK: Edward Elgar Publishing, 1086 pp. (two volumes) (with an Introduction by the editors, and including another four authored or co-authored chapters).

Edquist, C. (1999, February). *Teknikbrostiftelsen i Linköping: En utvärdering av dess roll som offentlig såddfinansierare i det regionala innovationssystemet (The Technology Bridge Foundation in Linköping: An Evaluation of its Role as a Public Provider of Seed Capital in the Regional System of Innovation, written in Swedish)*. Linköping, 60 pp.

Edquist, C., Dieter, E., Holland, J., and Kaplinsky, R. (1999). *The Science, Technology and Innovation Policy Review: Jamaica*, United Nations Conference on Trade and Development and The Commission on Science and Technology for Development, United Nations, New York and Geneva, 156 pp.

Edquist, C. (Ed.). (1997). *Systems of Innovation: Technologies, Institutions and Organizations*. London: Pinter Publishers/Cassell Academic, 432 pp. (This is one of my most cited publications at <http://scholar.google.com/>)

Edquist, C., and Jacobsson, S. (1988). *Flexible Automation - The Global Diffusion of New Technology in the Engineering Industry*. Oxford: Basil Blackwell, 227 pp.

Clark, N., Edquist, C., Kaplinsky, R., and Pimentel, D. (1988, June). *Cyprus Technology Strategy*, Report of the UNDP/OPE Mission, Institute of Development Studies, Sussex University, 213 pages.

## ***Selected journal articles and book chapters***

Please visit website <https://charlesedquist.com/> for links to publications.

Edquist, C. (2019). Towards a holistic innovation policy: Can the Swedish National Innovation Council (NIC) be a role model? *Research Policy*, 48(4). doi:10.1016/j.respol.2018.10.008

Edquist, C., Zabala-Iturriagoitia, J.M., Barbero, J., & Zofio, J. (2018). On the meaning of innovation performance: Is the synthetic indicator of the Innovation Union Scoreboard flawed? *Research Evaluation*, 27(3), 196-211. doi:10.1093/reseval/rvy011

Wesseling, J. H., & Edquist, C. (2018). Public procurement for innovation to help meet societal challenges: a review and case study. *Science and Public Policy*. doi: 10.1093/scipol/scy013

Edquist, C. (2018). Towards a Holistic Innovation Policy: Can the Swedish National Innovation Council Serve as a Role Model? (CIRCLE Working Paper 2018/2). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy. Salles-Filho, S. L., Castro, P. F., Bin, A., Edquist, C., Ferro, A. F., & Corder, S. (2017). Perspectives for the Brazilian bioethanol sector: The innovation driver. *Energy Policy*, 108, 70-77. doi:10.1016/j.enpol.2017.05.037

Edquist, C. (2016). The Swedish National Innovation Council – Innovation policy governance to replace linearity with holism. (CIRCLE Working Paper 2016/24). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Wessling, J.H. and Edquist, Ch. (February 2016). Public Procurement for Innovation: lessons from the procurement of navigable storm surge barrier. (CIRCLE Working Paper 2016/5). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. (August 2015). Innovation related Public Procurement as a Demand-oriented Innovation Policy Instrument. (CIRCLE Working Paper 2015/28). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. and Zabala-Iturriagoitia, J.M (August 2015). The Innovation Union Scoreboard is flawed: The Case of Sweden-not the innovation leader of the EU-updated version.(CIRCLE Working Paper 2015/27). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy. Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. and Zabala-Iturriagoitia, J.M. (2015). Pre-commercial procurement: A demand or supply policy instrument in relation to innovation? *R & D Management*. doi: 10.1111/radm.12057

Borrás, S., and Edquist, C. (2015). Education, training and skills in innovation policy. *Science and Public Policy*. doi:10.1093/scipol/scu043

Borrás, S., and Edquist, C. (2015). Innovation Policy for Knowledge Production and R&D: The Investment Portfolio Approach. In Crespi, R., and Quatraro, F. (Eds.), *The economics of*



*knowledge, innovation and systemic technology policy*. London, UK: Routledge (forthcoming).

Edquist, C. (2015). Design of Innovation Policy through Diagnostic Analysis: Identification of Systematic Problems (or Failures). Fagerberg, J. and Mowery, D. (Eds.), *Innovation, Technology and Economic Change*, Cheltenham: Edward Elgar Publishing. This article was republished from the journal *Industrial and Corporate Change*, 2011.

Edler, J., Edquist, C., Vonortas, N., and Zabala-Iturriagoitia, J.M. (2015). Conclusions: Lessons, limitations and way forward. Edquist, C., Vonortas, N., Zabala-Iturriagoitia, J.M., and Edler, J. (Eds.), *Public Procurement for Innovation* (pp. 299-306). Cheltenham: Edward Elgar Publishing.

Edquist, C., Vonortas, N., and Zabala-Iturriagoitia, J.M. (2015). Introduction. In Edquist, C., Vonortas, N., Zabala-Iturriagoitia, J.M., and Edler, J. (Eds.), *Public Procurement for Innovation* (pp. 1-34). Cheltenham: Edward Elgar Publishing.

Borrás, S., and Edquist, C. (2014). *Institutions and Regulations in Innovation Systems: Effects, Problems and Innovation Policy Design* (CIRCLE Working Paper 2014/29). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. (2014). Striving towards a Holistic Innovation Policy in European countries – But linearity still prevails! *STI Policy Review*, 5(2), 1-19.

Edquist, C. (2014). En helhetlig innovationspolitik – varför, vad och hur? (A holistic innovation policy). In Wanger, M. Ö. (Ed.), *Position Sverige – Om innovation, hållbarhet och arbetsmarknad – en debattantologi* (*Position Sweden – On innovation, sustainability and labour market – A debate anthology – in Swedish*) (pp. 59-80). Stockholm, Sweden: Ekerlids Förklad.

Edquist, C. (2014). *Efficiency of Research and Innovation Systems for economic growth and employment – Report for the European Research and Innovation Area Committee* (CIRCLE Working Paper 2014/08). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Borrás, S., and Edquist, C. (2013). Competence building: A systemic approach to innovation policy. This paper was given the *award for best paper at the Atlanta Conference of Science and Innovation Policy*, Georgia, USA, 26-28 September 2013. Accepted for publication in Crespi, F. and Quatraro, F. (Eds.), *The Economics of Knowledge, Innovation and Systemic Technology Policy*, Routledge (forthcoming).

Edquist, C. (2013). Innovation policies and instruments – With a demand-side emphasis. In Kim, K.W. (Ed.), *Changing landscape of industrial innovation and new challenges for policy*. Seoul, South Korea: Korea Development Institute.

Edquist, C. (2013). Feature: Comparing National Systems for Innovation Policy Purposes. In *Australian Innovation System Report 2013*, Australian Government, Department of Industry.

Borrás, S., and Edquist, E. (2013). The choice of innovation policy instruments. *Technological forecasting and Social Change*, 80(8), 1513-1522. doi:10.1016/j.techfore.2013.03.002.

Edquist, C., and Zabala-Iturriagagoitia, J.M. (2012). Why precommercial procurement is not innovation procurement (CIRCLE Working Paper 2012/11). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C., and Zabala-Iturriagagoitia, J.M. (2012). Chapitre 10: La commande publique pour l'innovation: Une politique orientée par le demande [Chapter 10: Translation of public procurement for innovation (PPI) as mission-oriented innovation policy, *Research Policy*, 2012.]. In Lesourne, O, and Randet, D. (Eds.), *La recherche et l'innovation en France Futuris 2012*. France: Odile Jacob.

Edquist, C., and Zabala-Iturriagagoitia, J.M. (2012). Public Procurement for Innovation (PPI) as mission-oriented innovation policy. *Research Policy*, 41(10), 1757-1769. <http://dx.doi.org/10.1016/j.respol.2012.04.022>.

Edquist, C. (2011). Design of innovation policy through diagnostic analysis: Identification of systemic problems (or failures). *Industrial and Corporate Change*, 20(6), 1-29. doi: 10.1093/icc/dtr060. The article was republished in the book “Innovation, Technology and Economic Change”, Cheltenham: Edward Elgar Publishing.

Chaminade, C., and Edquist, C. (2010). Rationales for public policy intervention in the innovation process: A systems of innovation approach. In Kuhlman, S., Shapira, P., and Smits, R. (Eds.), *Innovation Policy – Theory and Practice. An International Handbook*. Edward Elgar. (The book was published in Paperback in early 2012.)

Edquist, C., Luukkonen, T., and Sotarauta, M. (2009, October 28). Broad-Based Innovation Policy. In *Evaluation of the Finnish National Innovation System - Full Report*, (pp. 11– 69). Helsinki. (The evaluation was carried out by a group of experts consisting of six international and twelve Finnish researchers, led by Pekka Ylä-Anttila and Petri Rouvinen, ETLA. Six sub-reports and a policy report were published; see [www.evaluation.fi](http://www.evaluation.fi), where all sub-reports are available.)

Borrás, S., Chaminade, C., and Edquist, C. (2009). The Challenges of Globalization: Strategic Choices for Innovation Policy. In Marklund, G., Vonortas, N., and Wessner, C. (Eds.), *The Innovation Imperative – Globalization and National Competitiveness*. London: Edward Elgar Publishers.

Edquist, C., and Chaminade, C. (2006, July). Industrial Policy from a Systems-of -Innovation Perspective. *European Investment Bank (EIB) Papers*, 11(1-2), 32 pp.

Chaminade, C., and Edquist, C. (2006). From theory to practice. The use of the systems of innovation approach in innovation policy. In Hage, J., and Meeus, M. (Eds.), *Innovation, Science and Institutional Change. A Research Handbook*. Oxford University Press, 17pp.

Edquist, C. (2005, November). Systems of Innovation: Perspectives and Challenges. In Fagerberg, J., Mowery, D., and Nelson, R. (Eds.), *Oxford Handbook of Innovation*, (pp. 181-208). Oxford: Oxford University Press.

Edquist, C. (2004, September). The Fixed Internet and Mobile Telecommunications Sectoral System of Innovation: Equipment Production, Access Provision and Content Provision. In Malerba, F. (Ed.), *Sectoral Systems of Innovation in Europe – Concepts, Issues and Analyses of Six Major Sectors in Europe*, (pp. 155-192). Cambridge, UK: Cambridge University Press.

Edquist, C., Malerba, F., Metcalfe, S., Montobbio, F., and Steinmueller, E. (2004, September). Sectoral Systems: Implications for European Innovation Policy. In Malerba, F. (Ed.), *Sectoral Systems of Innovation in Europe – Concepts, Issues and Analyses of Six Major Sectors in Europe*, (pp. 427-461). Cambridge, UK: Cambridge University Press.

Edquist, C. (2003). The Fixed Internet and Mobile Telecommunications Sectoral System of Innovation: Equipment, Access and Content. In Edquist, C. (Ed.), *The Internet and Mobile Telecommunications System of Innovation: Developments in Equipment, Access and Content*. Edward Elgar Publishing, 39 pp.

Edquist, C. (2003). Policy Implications for the Future of the Sectoral System. In Edquist, C. (Ed.), *The Internet and Mobile Telecommunications System of Innovation: Developments in Equipment, Access and Content*. Edward Elgar Publishing, 8 pp.

Edquist, C., and Rees, G. (2002). Individuellt och organisatoriskt lärande i den kunskapsbaserade ekonomin (Individual and Organizational Learning in the Knowledge-based Economy - in Swedish). In Abrahamsson, K., Abrahamsson, L., Björkman, T., Ellström, Per-Erik., and Johansson, J. (Eds.), *Utbildning, kompetens och arbete (Education, Competence and Work – in Swedish)*, (pp. 411-427). Lund: Studentlitteratur.

Edquist, C. (2001). Innovation Policy in the Systems of Innovation Approach: Some Basic Principles. In Fischer, M. M., and Fröhlich, J. (Eds.), *Knowledge Complexity and Innovation Systems*. Berlin: Springer Verlag, 14 pp.

Edquist, C. (2001). Innovation Policy – A Systemic Approach. In Lundvall, B-Å., and Archibugi, D. (Eds.), *Major Socio-Economic Trends and European Innovation Policy*. Oxford. UK: Oxford University Press, 25 pp.

Edquist, C., Hommen, L., Johnson, B., Lemola, T., Malerba, F., Reiss, T., and Smith, K. (2000). The Systems of Innovation Approach and its General Policy Implications and Specific Policy Implications of ISE and its Sub-projects. In Edquist, C., and McKelvey, M. (Eds.), *Systems of Innovation: Growth, Competitiveness and Employment*, an Elgar Reference Collection. Cheltenham, UK: Edward Elgar Publishing, 28 pp. Edquist, C., and Johnson, B. (2000). Institutions and Organisations in Systems of Innovation. In Edquist, C., and McKelvey, M. (Eds.), *Systems of Innovation: Growth, Competitiveness and Employment*, an Elgar Reference Collection. Cheltenham, UK: Edward Elgar Publishing, 23 pp.

Edquist, C., and Craig Riddell, W. (2000). The Role of Knowledge and Innovation for Economic Growth and Employment in the Information and Communication Technology (ICT) Era. In Rubenson, K., and Schuetze, Hans G. (Eds.), *Transition to the Knowledge Society: Policies and Strategies for Individual Participation and Learning*. Vancouver, Canada: Institute for European Studies, University of British Columbia, 29 pp.

Edquist, C., and Hommen L. (1999). Systems of Innovation: Theory and Policy for the Demand Side. *Technology in Society*, 21, pp 63-79.

Edquist, C. *Product versus Process Innovation: A Conceptual Framework for Assessing Employment Impacts* Paper presented at *Conference on Creativity, Innovation and Job Creation*, Organized by the OECD and the Norwegian Government, Oslo 11-12 January 1996. Published in *Creativity, Innovation and Job Creation*, OECD, Paris, March 1997, 17 pp.

Edquist, C. *Systems of Innovation Approaches - Their Emergence and Characteristics*, in Edquist, C. (ed.) *Systems of Innovation - Technologies, Institutions and Organizations*, Pinter Publishers/Cassell Academic, London, 1997, 35 pp.

Edquist, C., and Flodström, A. *Den tredje uppgiften: Universitet och samhälle i samverkan (The Third Mission: University and Society in Co-operation*, written in Swedish), in Dahl, S. (ed.) *Kunskap så det räcker? - 18 debattinlägg om utbildning och forskning*, SACO, Stockholm, 1997, 12 pp.

Edquist, C. *Government Technology Procurement as an Instrument of Technology Policy*, in Teubal, M., Foray, D., Justman, M., and Zuscovitch, E. (eds.) *Technological Infrastructure Policy (TIP): An International Perspective*, Kluwer Academic Publishers, Boston/Dordrecht/London 1995, 29 pp.

Edquist, C. *Technology Policy - The Interaction between Governments and Markets* in Aichholzer, G., and Schienstock, G. (eds.) *Technology Policy - Towards an Integration of Social and Ecological Concerns*, Walter de Gruyter, Berlin, 1994, 33 pp.

Edquist, C., and Lundvall, Bengt-Åke. *Comparing the Danish and Swedish Systems of Innovation*, in Nelson, R. R. (ed.), *National Innovation Systems - A Comparative Analysis*, Oxford University Press, Oxford, 1993, 33 pp.

Edquist, C., and McKelvey, M. *The Diffusion of New Product Technologies and Productivity Growth in Swedish Industry*, Consortium on Competitiveness & Cooperation (CCC) Working Paper, No 91-15, 1992, Center for Research in Management, University of California at Berkeley. This has been published in Swedish in *Forskning, Teknikspridning och Produktivitet*, Expert Report number 10 to the Productivity Delegation, 1991, 24 pp. (The Swedish title was: *Högteknologiska produkter och produktivitet i svensk industri*)

Edquist, C., and Jacobsson, S. *The Production of Hydraulic Excavators and Machining Centres in India and the Republic of Korea - State Policies, Firm Performance and Firm Strategies*, in Desai, A.V. (ed.): *Technology Absorption in Indian Industry*, New Delhi, 1988.

Edquist, C. *The Diffusion of Industrial Robots in the OECD Countries and the Impact thereof*, in *Robotics*, Elsevier Science Publishers, Amsterdam, Volume 3, Number 1, 1987.

Edquist, C., and Jacobsson, S. *The Integrated Circuit Industries of India and the Republic of Korea in an International Techno-Economic Context*, in *Industry and Development*, No 19, 1987.

## ***Articles in the Popular press and Appearance in the Media***

Please visit website <https://charlesedquist.com/> for links to publications.

Interviewed in the journal *Dagens Samhälle* on June 20, 2019 about how functional procurement can enhance the development of innovations.

Debate article in the Swedish Newspaper *NyTeknik* with Nordlander, J., Johansson, I., & Edquist, C., *Köp snabba tågtransporter – inte höghastighetståg* (Buy rapid train transports – not high speed trains). June 11, 2019.

Debate article in the Swedish Newspaper *Ny Teknik* with the title “Rätt innovationspolitik kan försvara välfärden” (“The right innovation policy can defend welfare”, January 16, 2019

Interviewed in the Spanish daily *La Vanguardia* with the title “Para innovar y gobernar bien no hacen falta doctorados”, September 26, 2018.

Opinion article by Edquist, C., & Zabala-Iturriagoitia, J. M. with the title “Viewpoint: The latest EU innovation index is out. It’s flawed.” in *Science Business*, June 22, 2018.

Debate article in *Upphandling 24* “*Funktionsupphandling för ökad innovation*” (Funktional Procurement for increased innovation) February, 2016.

Op-ed article in the Swedish daily economical newspaper *Dagens Industri* “Så kan upphandling förbättras” (Public Procurement can be improved in this way), January 27, 2016.

Interviewed in the newsletter of *Sveriges Offentliga Inköpare* with the title “*Charles Edquist – offentlig upphandling är avgörande!*” (*Charles Edquist – Public Procurement is crucial* – in Swedish), June 18, 2015.

Hodzic A., and Edquist, C. *Upphandlingen avgör innovations kraften* (*Procurement decides the innovation power* – in Swedish). Article published in the Swedish journal *Dagens Samhälle*, June 17, 2015.

Interviewed in *Ny Teknik* “*Trafikverket tvingas köpa produkter som inte finns*” (*The Traffic Agency is forced to buy products that do not exist* – in Swedish) May 20, 2015.

Edquist, C. *Innovationspolitiken måste samlas i en egen proposition* (*Innovation policy must be united into a separate government bill*). Debate Article Published in Swedish daily *Dagens Nyheter*, May 11, 2015.

Featured in *8till5* section of *Sydsvenskan* with the title “*Charles Edquist är missionär för en smartare svensk innovationspolitik*” (*Charles Edquist is a missionary for a smarter Swedish innovation policy* – in Swedish), March 14, 2015.

Interview in *Research Europe* “*Sweden set to switch tracks*”, March 19, 2015.

“*Hur räddar vi jobben i Lund? – Debatt efter varslen på Sony* (*This is how we save the jobs in Lund – debate after the lay-offs at Sony*)”. Debate broadcasted by *Sydsvenskan*, March 19, 2015.

“*Five important characteristics of successful innovation policy*”. *Lunds Universitets Magasin* (LUM), March 25, 2015.

Interviewed about the Swedish National Innovation Council in *Rapidus*, February 24, 2015.

Edquist, C. *Sätt fart på innovationspolitiken nu – börja med upphandlingen! (Get started with the innovation policy now – start with procurement!)*. *Tiden*, 3(4), December 22, 2014.

Edquist, C., Nilsson, J., and Petersson, B. *Innovation ska driva Sverige – Inte låga löner (Innovation Shall Drive Sweden – not low wages)*. Article Published in Swedish weekly journal *Ny Teknik*, September 8, 2014.

Featured in “International Innovation” Magazine, with the title “Centre for Innovation, Research and Competence in the Learning Economy”, p. 21 – 23.

Edquist, C. *Inrätta ett råd för innovationspolitik (Establish a council on innovation policy, written - in Swedish)*. Article published in the Swedish daily newspaper *Svenska Dagbladet*, June 21, 2013.

Edquist, C. was interviewed in a movie produced for the Almedalen Week in 2013.

Interview with Charles Edquist about innovation indicators, April 24, 2013, [www.life-time.se](http://www.life-time.se).

Featured on Jensen, S.E.’s article: *Svensk innovation i EU-topp men är det hela sanningen? (Swedish innovation in EU state but is it the whole truth? - in Swedish)*. Article published in Swedish website LIFE-time.se, April 24, 2013. Accessible via: <http://www.life-time.se/2013/04/24/svensk-innovation-i-eu-topp-men-ar-det-hela-sanningen/>.

Edquist, C. *Den svenska regeringen missar innovationspolitiken (The Swedish government misses innovation policy - in Swedish)*. Article published in the Swedish daily newspaper *Dagens Nyheter*, March 16, 2013, page 6. (Translation into English is available at <http://charlesedquist.com>.)

Edquist, C., and Hederén, J. *Staten bör gifta ihop digital-tv med bredband (The State Should Marry Digital TV with Broadband, written in Swedish)*. Article published in the Swedish daily business newspaper *Dagens Industri*, March 18, 2003.

Edquist, C. *Så kan industrin skapa 125 000 jobb (In This Way Industry Can Create 125 000 Jobs, written in Swedish)*. Article published in the Swedish daily newspaper *Expressen*, March 11, 1996.

Edquist, C. *Svensk industri tar inga ‘onödiga’ risker - Sverige ligger efter när det gäller framtidsbranscher (Swedish Industry Takes No ‘Unnecessary’ Risks – Sweden is Lagging Behind with Regard to Future-Oriented Sectors, written in Swedish)*. Article published in the Swedish daily newspaper *Svenska Dagbladet*, September 3, 1995.

Edquist, C. *Produktiviteten i skymundan (Productivity in the Background, written in Swedish)*. Article published in the Swedish daily newspaper *Dagens Nyheter*, April 8, 1993.

Edquist, C. *Audacious Manufacturing but Simple Products in Forskning och Framsteg*, December 1990. (This article was awarded a prize, by the Bank of Sweden Tercentenary Foundation, for being the best popular science article in the field of humanities and social sciences)

## 5. Citations

The fact that I am among the 50 (or so) most cited innovation researchers (out of 6 – 7 000) in the world is testimony to the impact of my research. (For data, please see Section 5 in the FULL CV or visit <https://charlesedquist.com/> and click on citations)

## 6. Interaction with Public Policy-Makers and Firm Strategists

One reason why my publications have had a large impact on other research, as measured by the number of citations (see section 5 in FULL CV), is that I have been an early contributor to various special sub-fields emerging within innovation research. Such a head start has made it possible to influence the further development of these subfields. This identification of “needs”, constituted by unsolved problems, has been based upon intuition and a drive to develop theory and empirical analysis into stages where they become relevant and useful for policy action. Two examples are my contributions to the development of the Systems of Innovation (SI) approach and the formulation of “The Swedish Paradox”.

I co-authored, with Bengt-Åke Lundvall, the chapter on the Swedish-Danish national systems of innovation that was included in the Richard Nelson book on national systems of innovations (Nelson 1993) (Lundvall and Nelson published the first two books on systems of innovation). In my own edited volume on systems of innovation (1997), I tried to make the SI approach more “structured” and increase its coherence by sorting out conceptual and other problems associated with it. The intention was also to make it more relevant and useful for innovation policy purposes. The SI approach has diffused extremely rapidly among researchers, but also - and perhaps even more so - among policy-makers and politicians. It has been used for policy purposes by many national governments, the OECD, the EU and numerous regional authorities in several countries. I have used the SI approach in a considerable number of contributions to the literature on innovation policy (see other parts of this CV), and in the actual development of policies, e.g. in the evaluation of the Finnish national system of innovation in 2009. With Maureen McKelvey, I gradually formulated “The Swedish Paradox”, beginning in 1991 (Edquist and McKelvey 1992). It points to the fact that there have been very large inputs of resources for R&D and innovation in Sweden, but that the output of innovations has been meagre (although this low “productivity” of the Swedish national system of innovation has improved lately). The Swedish Paradox has been quite an important item on the agenda for the debate on innovation policy in Sweden.

A considerable part of my research is of direct relevance to different socio-economic and political actors. Policy-makers, politicians, think-tanks and consultancy firms have directly used my contributions. Many publications listed in section 6 in the FULL CV have that character and include several evaluations and/or consultancy reports. I have been engaged in consultancy tasks for formulating or evaluating policies on almost all the continents, often in collaboration with international organizations. Between 1998 and 2000, I worked part-time in Paris for the OECD on a project entitled ‘Learning Regions’, which addressed education (at various levels), R&D and innovation as means to enhance economic performance (economic growth, employment creation, etc) at regional level. Prior to this assignment, I had been engaged as a consultant by several international organizations: (UNIDO (six times), UNCTAD, ILO, UNDP, UNFSTD, UNESCO, IDRC, OECD (six times), and the European Commission (five times), in addition to, for example, Swedish organizations such as the Ministry of Industries, NUTEK, and VINNOVA. I have also worked for firms such as Astra-Zeneca, SAAB Aerospace, and Volvo Trucks.

I should mention the evaluation of a “technology bridging” organization (in Linköping, Sweden, 1999), which deals with seed funding of new technology-based firms that are both entrepreneurial and innovative. I have also evaluated some of the activities within the ‘Third Mission’ at Lund University. The comprehensive evaluation of the *Finnish National Innovation System*, commissioned by the Finnish Government (2009), mentioned above, was for the Finnish Ministry of Employment and the Economy and organized by ETLA (The Research Institute of the Finnish Economy) – see [www.evaluation.fi](http://www.evaluation.fi). I was responsible for one of the six parts that focused upon the development of a holistic innovation policy for Finland.

Previously, I was a Member of The Research Policy Advisory Committee to the Swedish Government (Forskningsberedningen), chaired by Jan Björklund, Minister for Education and Deputy Prime Minister. During 2011 and the first half of 2012, this Committee advised the government on Research and Innovation Policy in the preparation of the Proposal to the Parliament. The Proposal was due in autumn 2012 and included spending amounting to 35 billion Swedish Crowns, which was about 1 per cent of Swedish GDP. I am also working on three different evaluation projects at Sweco Eurofutures, a large private consultancy firm in Stockholm. During 2015 – 2018, I was a member of the Swedish National Innovation Council (NIC, Nationella innovationsrådet) which is chaired by the Prime Minister, Stefan Löfven. The NIC consists of ten external members and five government ministers.

All these activities directly concerned work related to policies and strategies. An example is Edquist 2002 listed in section 6.1 in the FULL CV, which is an analysis of objectives, rationales, problems and measures related to innovation policy. It was written at the request of the Swedish Ministry of Industry and was published by The Swedish Agency for Innovation Systems (VINNOVA). The work related to policies and strategies included issues of an economic, social and environmental kind. It has concerned productivity growth, inclusiveness, research, employment, education and skill formation, sustainability, innovation, development of emerging economies, global challenges, health, institutional regulation, financing, SMEs, and entrepreneurship.

Hence much of my work has been policy-oriented in that it has analysed the *determinants* (‘ten activities’, including entrepreneurship and demand-side instruments such as innovation procurement) and *consequences* (growth, employment, environmental and social effects) of innovations, as well as their *measurement* (innovation indicators). Focus has been on the foundations of *innovation policies*, i.e. theory, rationales, objectives, policy instruments and practices. One example is the article published in *Industrial and Corporate Change* (Edquist 2011) entitled “Design of innovation policy through diagnostic analysis: Identification of systemic problems (or failures)”. An earlier version of this article – published as a CIRCLE working paper in 2008 – has been an important influence on the current OECD/DSTI efforts to build an ‘Innovation Policy Platform’ (IPP) to be offered to member governments - a project with innovation system diagnostics at its core.

The following examples of interaction with various societal organizations can also be mentioned:



- Charles presented the report on functional public procurement written for the [Swedish Competition Agency](#) at a seminar at the Swedish Ministry of Finance on April 5, 2019.
- Charles Edquist gave a seminar at The Directorate for Science, Technology and Innovation (DSTI), OECD in November 2018. The title was “To develop a Holistic Innovation Policy should be self-evident – for all countries and regions!”
- On September 13, 2018, Charles Participated in a workshop organised by CIRCLE, SPRU and CENTRIM in Brighton
- The German Development Institute arranged a workshop in Lund in September 2018 on Sustainable Public Procurement and Charles gave the key-note introductory speech on “Functional procurement enhances innovation for sustainability”.
- Charles made a presentation entitled: “Make Public Procurement Drive Innovation: Specify Functions Instead of Products!” at the TAFTIE Annual Conference, 2018. TAFTIE is The European Network of Innovation Agencies , and the conference was hosted by MITA, The Agency for Science, Innovation and Technology, Vilnius.
- Met with the team of the President of Lithuania. Among the issues discussed were “Holistic innovation policy”, The Swedish National Innovation Council” and “Functional public procurement to enhance innovation”.
- Participated in a reference group meeting on a report on “Innovation Competitions” written by Stefan Fölster at the Swedish competition authority, November 16, 2017 in Stockholm.
- Appointed as a member of the National Innovation Council, chaired by Swedish Prime Minister Stefan Löfven, February 2015, subsequently reappointed in 2017.
- Participated in a meeting with the Council for Strategic Public Procurement at the Skåne Region, October 20, 2016.
- Participated in a meeting at the European Commission in Brussels organised by the Task Force “Unleashing Innovation and Entrepreneurship in Europe” last October 22, 2015.
- Met with top executives at the Ministry of Science and Technology, including NSTDA, TCELS, and the STI Policy Office of Thailand, September 5-7, 2015.
- Member of the Editorial Council of “*Foresight – Russia*”, 2015
- Member of the Editorial Board of African Journal of Science “*Innovation and Development*”, 2015
- Report “Financing of Innovations”, presented at Almedalen, June, 2015
- Report “Public of Innovation procurement”, presented at Almedalen, June 2015

- Published a report for the Swedish Competition Authority with the title “Public Procurement and Innovation” in September 2014.
- Provided advisory services for the Taiwan Institute of Economic Research on “How to build an Asian Innovation Policy Platform”. September 2014.
- Meetings with Parliamentarians Jennie Nilsson and Ingela Nylund Wats on innovation policy in Lund June 2013.
- Participated, during 2013, in the *Ericsson Networked Society Index Delphi Panel*, with the purpose to create a global index based on ICT maturity and its correlation of sustainable urban development.
- Coordinator of the CIRCLE Policy Advisory Board, 2013 and onwards.
- Member of the Executive Committee of the European Forum for Studies of Policies for Research and Innovation from April 2013 to 2016.
- Member of the Advisory Board for Innovation Procurement at the Region Skåne Government, 2011 and onwards.
- Member of the Expert Group for Development of Innovation Indicators at Statistics Sweden, 27 May 2013, Stockholm. Sweden.
- Member of the Research Policy Advisory Board to the Swedish Government (‘Regeringens Forskningsberedning’) 2011 - 2012.
- Paper Presented to the OECD entitled “Public Procurement for Innovation as Mission Oriented Innovation Policy”. 13 February 2012. Paris, France.
- Consultant to the European Union and Region Skåne on the report entitled “Strategiska rekommendationer till Skåne – Blekinge inför etableringen av ESS och MAX IV published on 18 May 2012. Stockholm, Sweden.

## **7. Research Management and Leadership**

I have initiated and led several research groups and research centers that have often had a strong international orientation and involvement. This has involved raising large amounts of external research funding. The latest example is CIRCLE. I was one of the founders of CIRCLE (Centre for Innovation, Research and Competence in the Learning Economy) at Lund University in 2004 - [www.circle.lu.se](http://www.circle.lu.se). During my seven years (2004 - 2011) as Director, the research staff increased from zero to 40 (representing 12 nationalities and 15 disciplines). By 2011, CIRCLE had established itself as one of the largest innovation research centres in Europe, and a leading international centre for research and advice on R&D, innovation, knowledge creation, entrepreneurship and economic dynamics.

In order to make its research efforts even more relevant for the wider society, CIRCLE formed a Policy Advisory Board for providing input on strategic issues concerning its research and third mission agenda. The Board consists of professionals with competence in

various fields relevant to innovation and economic development in international, national and regional contexts. The Board members hold leading positions in organizations like the OECD, VINNOVA, regional and national governments, business firms and technology transfer organizations.

In September 2011, I chose to step down from the directorship in order to spend more time as a researcher and as an advisor to governments, international organisations and firms on issues related to innovation policy and strategy. I will do so in my capacity as Holder of the Ruben Rausing Chair in Innovation Studies at CIRCLE.

Charles Edquist has been asked by the European Commission to be the Chairman of a project entitled Mutual Learning Exercise (MLE) on Innovation Procurement, which is participated by 16 member states. This has resulted in a report “Developing strategic frameworks for innovation related public procurement.” in October 2017.

For more information about CIRCLE please see: <http://www.circle.lu.se>

I have been extensively involved in peer-review processes of various research institutes and research councils abroad and in Sweden for many years. For example, during 2004, I was a member of an international team that evaluated the research at the Copernicus Institute for Sustainable Development and Innovation, University of Utrecht, the Netherlands. I have been a member of committees for evaluating applications for research funding in two research-funding bodies in Sweden and in The European Union Framework Programs. I have also served on committees for appointments to professorships and other academic positions. Through the various academic leadership positions described above, I have gained extensive experience in supervising and motivating staff at very different professional levels. This experience includes co-ordination of work across research programmes and other units, stimulating teamwork, resolving conflicts and developing consensus in departments as well as other units and organisations within and outside the university.

## 8. Selected Lectures and Conferences 2009 - 2018

I have comprehensive international experience acquired from longer stays at various universities, a large number of appearances as keynote speaker and *sejours* as a consultant in many countries. A considerable number of the conferences have involved public policy-makers, academics and representatives of firms.

In addition to participating in about 250 international scientific conferences, I have been an invited lecturer and keynote speaker at many, the general rapporteur at a few and the organiser of some. Many of the conferences have involved policy-makers, academics and representatives of firm. Some selected examples of my conference participation, from the last couple of years are:

Charles participated in the 2019 Conference of Eu-SPRI (European Forum for Studies of Policies for Research and Innovation), held in Rome on June, 5 – 7. Together with Jon Mikel Zabala Iturriagagoitia he presented a paper on “Functional Procurement for Innovation, Welfare and Sustainability” in a session on “Transformative Innovation Policy”. At another session he presented the new book entitled “**Holistic Innovation Policy: Theoretical Foundations, Policy Problems and Instrument Choices**”, [Oxford University Press](https://www.oxfordup.com/), March 2019 – written together with Susana Borrás.

At the Oslo Campus of the Norwegian Business School – BI, Charles made a presentation entitled “Functional Procurement for Innovation, Welfare and the Environment” on Wednesday, May 22, 2019.

Charles made a presentation entitled “Fossil free innovations by means of functional procurement – daring to think in new ways” at the “Fossil Free Sweden Initiative” in Stockholm. The title of the conference was “Fossil Free Public Procurement – obstacles and possibilities” on May 20, 2019.

The book, “Holistic Innovation Policy: Theoretical Foundations, Policy Problems and Instrument Choices” was presented by Charles on May 13, 2019 at the Research Institute of Industrial Economics (Institutet för Näringspolitiska Studier – IFN), Stockholm.

During March 1 – 31, 2019, was appointed to hold the “UAM-Accenture Visiting Fellowship” in the area of economics and management of innovation at the “UAM-Accenture Chair”, the Autonomous University of Madrid

Charles participated in a seminar on “Innovation, Economic Development and Policy” at the TIK Centre for Technology, Innovation and Culture at the University of Oslo on September 20, 2018.

Gave a key-note lecture on Holistic Innovation Policies in Universitat de Barcelona, September 18, 2018.

Scheduled to participate in the EU-SPRI 2018 Conference in Paris, entitled “Governance and relevance: Towards a new generation of research and innovation policies”. However, because of problems with flights, he did not reach Paris. But his co-authors presented two joint papers. Susana Borrás presented a paper entitled “Theoretical Foundations of a Holistic Innovation Policy”. Jon Mikel Zabala Iturriagoitia presented a paper entitled “Introducing functional procurement as an approach to stimulate innovation”.

Presented “Conceptual Underpinnings for Innovation Policy Design – Indicators and Instruments in Context” (co-authored with Borrás, S.). Paper prepared for OECD Blue Sky Conference III, 19-21 September, 2016, Ghent, Belgium.

Presented “Edquist, C. (2016). The Swedish National Innovation Council – Governance to replace linearity with holism in innovation policy?” at SPRU Conference, 7-9 September 2016, Sussex, U.K.

Presented “Separate innovation policy and research policy – to abandon linearity!” at the 2016 Eu-SPRI Conference, 7-10 June, 2016, Lund, Sweden.

Presented “Public innovation policy and firm innovation strategies: public risk capital funding should be seed funding – but additionality is not there!” at the 5<sup>th</sup> European Conference on Corporate R&D and Innovation (CONCORDI 2015), organised by Joint Research Centre of the European Commission, Seville, Spain, October 1-2, 2015.

Presented the paper “Demand-oriented Innovation Policy: Innovation-related Public Procurement to Solve Societal Problems and Satisfy Human Needs” at the The 13th Globelics International Conference, in Havana, Cuba, September 23-25, 2015.

Presented CIRCLE Working Paper 2015/27 “The Innovation Union Scoreboard is Flawed: The case of Sweden – not the innovation leader of the EU – updated version” at a seminar held at the European Commission, Brussels, September 15, 2015.

Gave a lecture on “Driving Innovation through Public Policy: The Case of Sweden” in a seminar organised by Thai Agencies National Innovation Agency and the National Science Technology and Innovation Policy Office in Bangkok, September 5-7, 2015.

Invited keynote speaker at “The 16<sup>th</sup> International Conference on Industrial Technology Innovation (ICITI, 2015)” with the presentation “Linear vs Holistic Innovation Policies: The Role of the Public Sector”, Taipei, Taiwan, September 3-4, 2015.

Participated on a discussion on “Innovation-related procurement in a local setting” organised by Sparbankernas Riksförbund during the Almedalen Week at Visby, Gotland, June 30, 2015.

Invited speaker on “Financing of Innovation and Growth” at a seminar organised by Ratio (Näringslivets forskningsinstitut) during the Almedalen Week at Visby, Gotland, June 29, 2015.

Presented “Public risk capital funding should be risk funding – but additionality is not there” and co-presented “The Innovation Union Scoreboard is Flawed: the Case of Sweden – not being the innovation leader of the EU” with Jon Mikel Zabala-Iturriagagoitia at the EU-SPRI Annual Conference 2015, Helsinki, Finland, June 10-12, 2015.

Presented “Speed up innovation procurement: buy functions – not products!” at a seminar on “How do we create prerequisites of innovation procurement” organised by Region Skåne, Malmö, June 5, 2015

Invited keynote speaker and presented “Innovation-Related Public Procurement (state-of-the-art)” at the “Demand-Side Policies for Innovation/Public Procurement for Innovation” Conference at the State University of Campinas (UNICAMP), Sao Paulo, Brazil, May 27-29, 2015.

Discussed on “Innovation Policy for Sweden” at a seminar organised by SP Technical Research Institute of Sweden called “SP-days”, Stockholm, April 15, 2015.

Participated in a public discussion on innovation policy at RISE-Day, organised by Research Institutes of Sweden in Stockholm, April 23, 2015.

Innovations Systems and Innovation Policy: public risk capital provision and public innovation procurement. The Swedish National Innovation Council, Harpsund, February 24, 2015.

Presented “Sweden does not (unfortunately) lead the EU Innovation League – or the EU Commission is wrong – What to do?” at the first meeting of the Swedish National Innovation Council in Stockholm, February 24, 2015.

Invited keynote speaker at the Informal Meeting of Health Ministers, organized by the Italian Presidency of the EU Council. Milan, Italy, September 21-22, 2014.

Discussed about “Innovation, Entrepreneurship and Policies” at the 2014 International Conference on Industrial Technology Innovation, organized by TIER (Taiwan Institute of Economic Research). Taipei, Taiwan, September 3-5, 2014.

Panelist in a discussion on University Rankings, organized by CIRCLE and Swedish Entrepreneurship Forum. Lund, Sweden, September 1, 2014.

Presented on “Public Procurement and Innovation – Obstacles and how to overcome them” at a seminar on Innovation Procurement, organized by The Swedish Energy Agency. Stockholm, Sweden, August 29, 2014.

Presented the ERAC (European Research and Innovation Area Committee) report “Efficiency of Research and Innovation Systems for Economic Growth and Employment” under the title “Why is Holistic Innovation Policy not pursued in the European Union?” at the EU-SPRI (European Forum for Studies of Policies for Research and Innovation) 2014 Manchester Conference. Manchester, United Kingdom, June 18 – 24, 2014.

Presented “A Holistic Innovation Policy” at the STEPI (Science and Technology Policy Institute of Korea) International Symposium in Korea, May 15, 2014.

Presented “Innovation Policy and Research Policy” at the ERAC ad-hoc Working Group on the European Semester and ERA Monitoring Seminar on the Efficiency and Effectiveness on R&I Systems, European Commission, May 5, 2014.

Invited as an independent expert during the Mutual Learning Seminar on R&I policies, organized by ERAC, in Brussels, Belgium, March 20, 2014.

Presented the paper entitled “A Holistic Innovation Policy – Why, What and How?” during the Lundvall Symposium 2014, organized by IKE Group of Ålborg University, Denmark. March 13 – 14, 2014.

Participated in a panel discussion on “Innovation Power for a more Entrepreneurial Sweden” during Småföretagsdagarna (Small Business Day), organized by the Swedish Entrepreneurship Forum. Stockholm, Sweden, March 12, 2014.

Participated in a Panel Discussion at the OECD Workshop on measuring the link between public Procurement, R&D and Innovation, Paris, 5-6 December 2013.

Participated in a Forum-Panel on “Partnerships for Industrial Development” at the 15<sup>th</sup> UNIDO (United Nations Industrial Development Organization) World Conference in Lima, Peru on Monday, December 2, 2013.

Presented “How to design innovation policy – including the example of public procurement for innovation”. At the Center for Technology, Innovation and Culture (TIK-Centre), November 13, 2013, Oslo, Norway.

Invited as a speaker and guest at CASTED (The Chinese Academy of Science and Technology for Development), which also included meetings organized at several other innovation policy organizations in Beijing. October 28 – November 1, 2013.

Invited panel speaker in the Policy Forum on “Innovation environment: Coordination between supply-side and demand-side policies” at the Pujian Innovation Forum. 26-27 October 2013, Shanghai, China.

Invited as a discussant on Martin Warland’s presentation on “Innovation systems for secondary capital cities: The role of KIBS in public procurement processes” at the Early Career Researcher Conference. Organized by the European Forum for Studies of Policies for Research and Innovation (EU-SPRI), CIRCLE and Lund University. 2-3 October 2013, Lund, Sweden.

Participant at the conference on “Innovations in Order”. Organized by the Swedish Agency for Innovation Systems (VINNOVA), 30 September 2013, Stockholm, Sweden.

Presented the paper: “Competence building: A systemic approach to innovation policy”, written together with Susana Borrás, at the Atlanta Conference on Science & Innovation Policy, 26-28 September 2013, Georgia, USA. (*This paper received the “Best Paper Award 2013” at the Conference*).

Presenter at the IHE Forum, "Innovationsupphandling - till nytta för sjukvården? / Innovation Procurement - for the benefit of health care?" Organized by the Institutet för Hälso och Siukvårdsekonomi / The Swedish Institute for Health Economics, 6 September 2013, Lund, Sweden.

Invited key-note speaker on "How to design innovation policy: identification of policy problems" and "Innovation Policy in Sweden" at the 14th International Conference on Industrial Technology Innovation, 5 September 2013, Taipei City, Taiwan.

Invited panelist in "Hur bygger vi en forskningsby från scratch? / How do we build a science park from scratch?" seminar, organized by MAX IV together with ESS and Science Village Scandinavia AB, 4 July 2013 in Lund, Sweden.

Invited keynote speaker on "Innovation systems and innovation policy" organized by Merck, Sharp & dohme, American Chamber of Commerce and Stockholm Science City, 2 July 2013 in Visby Almedalen, Sweden.

Invited Speaker at the Global industry and economy forum 2013 with the topic on "Innovation policies and instruments - with demand-side emphasis". Organized by the Korean Development Institute last 24 June 2013 in Seoul, the Republic of Korea.

Panel debater: "Sveriges innovationspolitik / Sweden's innovation policy" at the Sveriges Innovationsriksdag 2013, 23 May in Lund, Sweden.

Presented "The choice of innovation policy instruments" with Borrás, S. at the Swedish Entrepreneurship Forum in Lund, Sweden, 18 May 2013.

Panel speaker on "Why pre-commercial procurement is not innovation procurement" with Zabala, J. M., at "The management of innovation policies: new forms of collaboration in policy design, implementation and evaluation." Organized by the European Forum for Studies of Policies for Research and Innovation, 10-12 April 2013, Madrid, Spain.

Gave a seminar on "Innovation systems, innovation policy and innovation procurement - an account of the state of the art" at the Copenhagen Business School, 27 February 2013.

Keynote speaker at the Expert workshop on the measurement of public procurement of innovation. Discussed on "Innovation procurement: what is it and what does it mean for grand challenges, growth and employment." Organized by the Organisation for Economic Co-operation and Development, 4 February 2013, Paris, France.

Presentation about "The Establishment and Development of CIRCLE during 2004 – 2012" at the Department of Industrial Engineering Management, Uppsala University, 7 December, 2012.

Presentation of "Innovation Policy and Innovation Systems" at Uppsala University Innovation, 7 December 2012.

"A US Contribution on Public Procurement of Innovation". *Innovation out of the Crisis*. European Commission, DG Research and Innovation 28 November 2012. (Author of article discussed was David Mowery).

Presentation of paper entitled "Supporting innovation and growth of European industries: The use of innovation procurement", European Commission, DG Enterprise, Innovation Policy for Growth, Brussels, November 27, 2012.

"Innovation Policy for Growth and Sustainability – Some Swedish experiences and the way forward". *The Industrial High Road to Sustainability and Growth*. Friedrich Ebert Stiftung, 25 October 2012. Stockholm, Sweden.

Member of the Advisory Board to Ordförande för Upphandlingsstrategiutskottet, 12 September 2012, Regionhuset, Malmö

The final conference of the EU FP 7 project "Advancing knowledge-intensive entrepreneurship & innovation for economic growth and social well-being in Europe (AEGIS)", 6-8 September 2012.

Book Review and Panel Debater. "Ett Ramverk för Innovationspolitiken – Hur Göra Sverige mer Entreprenöriellt?". Organized by Institutet för Näringslivsforskning, IFN, IVA and Entreprenörskapsforum. 21 August 2012. Stockholm, Sweden.

Advisor to the consulting team SWECO Eurofutures AB which prepared the report on "EUREKA Impact Evaluation – Effects of Swedish Participation in EUREKA projects, published on 26 June 2012, Stockholm, Sweden.

Presenting a lecture on "Small Country Innovation Systems: Globalization, Change and Policy in Asia and Europe" at Beijing Normal University, Beijing, China, June 17, 2012.

"Public Procurement for Innovation (PPI) as a Demand-side and Mission-oriented innovation Policy Instrument", Beijing Normal University, June 17, 2012.



Key-Note Speech entitled “The Design of Innovation Policy” at The International Forum on Innovation in Education: Universities and the Training of Creative Talents, Beijing Normal University, Beijing, China, June 16, 2012.

Invited Contribution entitled “Systems of Innovation and Innovation Policy” at an Extended Workshop at the Higher School of Economics (HSE), the Research Laboratory for Economics of Innovation, Moscow, Russia, June 13-15, 2012.

Presentation on the “The Design of Innovation Policy in Systems of Innovation Perspective”. *Linkages Between Actors in the Innovation System*. Higher School of Economics National Research University, 13-15 June 2012. Moscow, Russia.

Organized session on “Public Procurement and Innovation (PPI) as Mission-oriented Innovation Policy”. *Towards Transformative Governance? Responses to Mission-oriented Innovation Policy Paradigms*. Fraunhofer ISI and Eu-SPRI, 12-13 June 2012. Karlsruhe, Germany.

“What is meant by Pre-Commercial Procurement?”. *2012 EU-SPRI Conference: Towards transformative governance? Responses to mission-oriented innovation policy paradigms*. Karlsruhe, 12-13 June 2012. (Co-authored with J.M. Zabala-Iturriagoitia).

Responsible for organizing a session on “Public Procurement for Innovation (PPI) as Mission-oriented Innovation Policy” at the 2012 Eu-SPRI Conference “Towards Transformative governance? Responses to mission-oriented innovation policy paradigms”, Karlsruhe, Germany, 12-13 June 2012.

Consultant to the European Union and Region Skåne on the report entitled “Strategiska rekommendationer till Skåne – Blekinge inför etableringen av ESS och MAX IV published on 18 May 2012. Stockholm, Sweden.

Participated in meetings with *Forskningsberedningen*, Rosenbad, Stockholm, March 30 and May 9, 2012.

Invited speaker on “Productivity of R&D and challenges of new science, R&D portfolios and breakthrough therapies in areas of unmet medical need, and benefits of public-private partnerships at the Meeting New Science: An Opportunity to Foster Growth and Health of European Citizens organized by the Healthcare Decider’s Forum, May 2012, Medicon Valley, Lund.

Presentation on *The Design of Innovation Policy: A Challenge for the Future* at the Seminário Internacional Sobre Pequenos Negócios (International Conference on Small Business), organised by Servico Brasileiro de Apoio às Micro e Pequenas Empresas (SEBRAE), 18 – 20 Abril de 2012, Hotel Grand Hyatt, Sao Paulo, Brasil.

Paper, *Public Procurement for Innovation (PPI) as Mission-oriented Innovation Policy*, (co-author Jon Mikel Zabala) at conference, Demand, Innovation and Policy Underpinning Policy Trends with Academic Analysis, organized by the research project, Understanding Public Procurement of Innovation, Manchester, March 22 – 23, 2012.

Presentation of Cycle de Conférences de Charles Edquist sur les politiques de l'innovation at CNAM, rue Conte, 75003 PARIS:

- “The History and Design of Innovation Policy”, 6 March, 2012. Discutant: Philippe Laredo, Université Paris-Est/University of Manchester
- “Public Procurement for Innovation as Mission-oriented Innovation Policy, 20 March, 2012. Discutant: Benjamin Coriat, CEPN, Université Paris 13
- “The Knowledge Basis of the Innovation Process”, 3 April, 2012. Discutant: Pascal Petit, CEPN, Université Paris 13.

Presentation, *Public Procurement for Innovation as Mission-oriented Innovation Policy*, at internal seminar, Department of Science, Technology and Industry, OECD, Paris, 13 February, 2012.

The Growth Dialogue on the New Economic Geography of Innovation and the Impact of the Economic Crisis: A Policy Symposium. OECD, 19-20 January 2012. Paris, France.

Participation in the European Conference on Public Procurement of Innovation – Facing societal Challenges Delivering Better Public Services & Supporting SMEs To Innovate, Turin, Italy 27-28 June 2011.

Draft paper, *Public procurement for Innovation (PPI) as Mission-oriented Innovation Policy*, at June 16-17, 2011 Lausanne Workshop discussion of contributions to the *Research Policy* special issue on Grand Policy Challenges. (Co-authored with J.M. Zabala).

Welcome Address, 2<sup>nd</sup> International Conference on Sustainability Transitions (IST 2011), organized by LUCSUS, STRN and CIRCLE at Lund University, June 13-15, 2011.

Presentation, *Innovation Systems and Innovation Policy*, at meeting of CIRCLE Policy Advisory board, May 4, 2011.

Participation in Workshop on Innovation Studies, Entrepreneurship Studies and STS, CIRCLE, 6-8 December, 2010.

Presentation, *Reflections on Innovation Policy*, for VINNOVA leaders at Swedish Agency for Innovation Systems, September 24, 2010.

Speaker and commentator on 16<sup>th</sup> SPRU DPhil Day, Freeman Centre, Brighton, UK, May 28, 2010.

Key-Note speaker and paper, *Design of Innovation Policy: How to Create an Innovative Society in a Globalized World*, at the Fourth National Conference on Science, Technology and Innovation, organized by the Brazilian Ministry of Science and Technology, Brasilia, May 26-28, 2010.

Presentation, *The Role of the State in Stimulating Innovations* at the 2010 Sweden-China Innovation Forum – 60 Years of Diplomatic Relations, Beijing, May 21, 2010.

Paper, *Knowledge-intensive entrepreneurship, national systems of innovation and European varieties of capitalism: A conceptual framework* (co-author Zabala, J. M). DIME-AEGIS Conference, Athens, 29-30 April 2010.

Paper, *A Conceptual Framework for Analyzing the Relations between Demand and Public Procurement for Innovation and between Knowledge-intensive Entrepreneurship and Innovation* (co-author Zabala, J. M). DIME-AEGIS Conference, Athens, 29-30 April 2010.

Presentation, *Design of Innovation Policy through Diagnostic Analysis: Identification of systemic Problems (or Failures)* at Department of Political Science, Gothenburg, April 19, 2010.

Panellist at the seminar Six years of Innovation Research – what have we learnt? organized at Swedish Agency for Innovation Systems (VINNOVA), Stockholm March 4, 2010.

Presentation, *Public Procurement for Innovation (PPI) – a Pilot Study*, at conference,

Procurement for Innovation – the art of buying the products of the future already now, organized by AstraZeneca, AB Volvo (trucks), and SAAB AB (aerospace), Almedalen, Visby, Sweden, June 29, 2009.

Presentation, *Design of Innovation Policy through Diagnostic Analysis: Identification of Systemic Problems (or failures)* at conference, Building National Innovation Systems: Linking theory and public policy for innovation, Montreal, May 8-9, 2009.

**Details of all the above can be found in my full CV and at <http://charlesedquist.com>.**

## C. THE FULL CV (48 pages)

### 1. Personal details

Office address: Centre for Innovation Research and Competence in the Learning Economy (CIRCLE)  
Lund University  
Box 117  
(Visiting address: Sölvegatan 16, Lund)  
SE-221 00 Lund  
Sweden

Tel: +46-(0)46- 222 39 31  
+46-708-136213 (mobile phone)

E-mail: Charles.edquist@circle.lu.se

Fax: +46-(0)46-222 80 60

Home pages: <http://charlesedquist.com> – includes more up-to-date information  
[www.circle.lu.se](http://www.circle.lu.se) – click staff and then my name (includes CV)  
[@CharlesEdquist](#) – on Twitter

Home address: Knut den stores gata 7, 222 21 Lund, Sweden; Tel: +46-(0)46-13 63 13

Nationality: Swedish

### 2. Degrees

Docent (Habilitation): Economic History, Umeå University, Sweden, 1985

PhD Degree (Fil.Dr.): Economic History, University of Lund, Sweden, 1981

Master of Arts Degree: Economics, University of California, Berkeley, USA, 1974

Bachelor of Arts Degree: Statistics, Economics and Economic History, University of Lund, (Fil. Kand.) 1971

### 3. Positions

February 2003 -	Holder of The Ruben Rausing Chair in Innovation, Centre for Innovation Research and Competence in the Learning Economy (CIRCLE), Lund University, Sweden
July 2004 – Sept 2011	Director, Centre for Innovation, Research and Competence in the Learning Economy (CIRCLE), Lund University, Sweden
January 2000 – June 2002	Head, Dept. of Technology and Social Change, Linköping University, Sweden
Sept. 1992 – Aug. 1994	Head, Dept. of Technology and Social Change, Linköping University, Sweden
Nov. 1986 – Jan. 2003	Full Professor (Chair), Department of Technology and Social Change, Linköping University, Sweden
July 1977 – March 1987:	Researcher, Assistant Professor, Associate Professor, Acting Professor and Acting Director, Research Policy Institute, Lund University, Sweden (Partial overlap with above because of part-time appointments)
Oct. 1976 – June 1977:	Researcher at the Centre for Interdisciplinary Studies, University of Gothenburg, Sweden
Jan. 1976 – Sept. 1976:	Lecturer at Roskilde University, Denmark
Jan. 1971 – Aug. 1976:	Lecturer in Economics, International Economics, Development Studies and in the field of Science-Technology-Society at Lund University, Sweden

*Extended visits abroad during my degree work and positions:*

Oct 2011 – May 2012	Guest Professor at Institut Francilien Recherche Innovation Société (IFRIS), Paris, France
Sept 2002 – Dec 2002	Guest Researcher at: Science Policy Research Unit (SPRU), Sussex University, Brighton, UK Centre for Research on Innovation and Competition (CRIC), Manchester University, UK, and Institute for Research on the Portuguese Economy (ISEG), Technical University of Lisbon, Portugal
Aug 1991 – June 1992	Sabbatical leave and guest researcher at the Centre for Research in Management, Haas School of Business, University of California at Berkeley, USA
1973-74	Student at the Department of Economics, University of California, Berkeley, USA

## 4. Languages

Swedish:	Mother tongue
English:	Excellent
French:	Fair
German and Spanish:	Basic

## 5. Citations

In the CIRCLE Annual Report the citations of the staff are published each year. The accumulated numbers of citations to my publications were the following at the times indicated:

	Google Scholar
August 2005	1 031
April 2006	1 413
February 2007	2 027
January 2008	2 875
January 2009	3 006
January 2010	5 663
January 2011	5 848
January 2012	7 807
January 2013	8 556
January 2014	10 248
January 2015	11 221
September 2018	17 573
January 2019	18 977
August 2019	21 333

This means that I was among the 50 (or so) most cited innovation researchers (out of 6-7 000) in the world in January 2012. The methodology used for the citation analysis is described in Appendix 1.

\*Methodologies for the various years according to how the citation analyses are done are published in the CIRCLE Annual Report.

For supplementary information on citations, please visit <http://charlesedquist.com> – and click on citations)

## 6. Publications (1986 to the present)

A complete list of publications is available upon request.

### 6.1. Books, Booklets, Reports, and CD-ROMs (monographs and edited volumes)

Please visit website <https://charlesedquist.com/> for links to publications.

Edquist, C. (2019). *Funktionsupphandling för innovation, välfärd och miljö (Functional Procurement for Innovation, Welfare and the Environment)* In Swedish, but with a 4-page summary in English. (Konkurrensverket uppdragsforskningsrapport 2019:2, 56 pp., Rep.). Stockholm: Konkurrensverket (Swedish Competition Agency).

Borrás, S., and Edquist, C. (2019). *Holistic Innovation Policy: Theoretical Foundations, Policy Problems, and Instrument Choices*. UK: Oxford University Press, 320 pp.

Edquist, C., Zabala-Iturriagoitia, J., Buchinger, E., & Whyles, G. (2018). *Mutual Learning Exercise - MLE on Innovation-related Procurement* (Rep.). Brussels: European Commission. doi:10.2777/723094

Edquist, C. (2017, October 3). *Developing strategic frameworks for innovation related public procurement* (Rep.). Brussels: European Commission, 32 pp. Retrieved <https://rio.jrc.ec.europa.eu/en/library/mle-innovation-related-public-procurement-report-developing-strategic-frameworks-innovation>

Edquist, C., Vonortas, N. S., Zabala-Iturriagoitia, J. M., and Edler, J. (Eds.). (2015). *Public procurement for innovation*. UK: Edward Elgar Publishing, 304 pp.

Edquist, C. (2014). *Offentlig upphandling och innovation (Public Procurement and Innovation, written in Swedish)* – Rapport för Konkurrensverket (The Swedish Competition Authority).

Edquist, C., and Hommen, L. (Eds.). (2011). *以欧洲和□ □ 10个国家（地区）□ □ (Small country innovation systems: Globalization, change, and policy in Asia and Europe – in Simplified Chinese)*. Beijing: Science Press, 362 pp.

Monsted, M., Edquist, C., Gabrielsson, J., Holst Jensen, J., Grunfelt, L. (2012). *Entrepreneurship and growth among graduates in Denmark, Norway and Sweden*. Nordic Innovation Publication 2012:07:

[http://www.nordicinnovation.org/Global/Publications/Reports/2012/.](http://www.nordicinnovation.org/Global/Publications/Reports/2012/)

Borrás, S., Fagerberg, J., and Edquist, C. (Eds.). (2011). Special issue on Learning, innovation systems and policy: in honour of Bengt-Åke Lundvall's 70th birthday. *Science and Public Policy* 38(9).

Edquist, C., and Hommen, L. (Eds.). (2008). *Small Country Innovation Systems: Globalisation, Change and Policy in Asia and Europe*. Edward Elgar Publishing (published in paperback 2009), 544 pp.

Edquist, C., and Hommen, L., in collaboration with Fedorovich, D., and Siriachenko, N. *Evaluation of Forum Scientium Postgraduate Research School, Linköping University*, an evaluation carried out for the Foundation for Strategic Research, Stockholm, December 2007, 74 pp.

Fulton, O., Santiago, P., Edquist, C., El-Khawas, E., and Hackl, E. (2007, September). *Thematic Review of Tertiary Education: Poland*. Paris: Organization for Economic Co-operation and Development (OECD), Directorate for Education, Education and Training Policy Division 152 pp.

Arvidsson, G., Bergström, H., Edquist, C., Högberg, D., and Jönsson, B. (2007, May). *Medicin för Sverige – Nytt liv i en framtidsbransch (Medicine for Sweden – New life into a sector of the future)*. Stockholm: SNS publishers, 205 pp.

Edquist, C., Gillespie, I., Rosenmöller, M., Sauer, F., Tijssen, R. (2007). *The Innovative Medicines Initiative - Assessment of Economical and Societal Impact*, European Commission, Research Directorate-General - Directorate F, Brussels.

Edler, J., Ruhland, S., Hafner, S., Rigby, J., Georghiou, L., Hommen, L., Rolfstam, M., Edquist, C., Tsipouri, L., and Papadakou, M. (2006). *Innovation and Public Procurement. Review of Issues at Stake*. Study for the European Commission (No ENTR/03/24). Fraunhofer Institute for Systems and Innovation Research.

Edquist, C., Amanatidou, E., Belitz, H., Cruz, L., Edler, J., Georghiou, L., Granstrand, O., Guinet, J., Leprince, E., Orsenigo, L., Rigby, J., Romanainen, J., Stampfer, M., and van den Biesen, J. (2003, April). *Improving the Effectiveness of Direct Public Support Measures to Stimulate Private Investment in Research – Study Report of the Working Group on Direct Measures for Directorate General Research*, European Commission, Brussels, 76 pp.

Edquist, C. (Ed.). (2003, January). *The Internet and Mobile Telecommunications System of Innovation: Developments in Equipment, Access and Content*. Cheltenham, UK: Edward Elgar Publishing, 260 pp.

Edquist, C., Leif H., and McKelvey, M. (2002, May). *Skapar innovationer jobb? Produktinnovationer och processinnovationer i den kunskapsbaserade ekonomin*. The book is a translation into Swedish of *Innovation and Employment: Process versus Product Innovation* (see below), Edward Elgar Publishing, Cheltenham, UK, June 2001. (The translation was financed by the Swedish Agency for Innovation Systems, VINNOVA.) SNS Publishers, 264 pp.



Edquist, C. (2002). *Innovationspolitik för Sverige – mål, skäl, problem och åtgärder*, (*Innovation Policy for Sweden – Objectives, Rationales, Problems and Measures* – written for the Swedish Ministry of Industry in Swedish and published by VINNOVA (The Swedish Agency for Innovation Systems), VINNOVA Forum (VFI 2002: 2), Stockholm, 69 pp.

Edquist, C., Rees, G., Larsen, K., Lorenzen, M., and Vincent-Lancrin, S. (2001, January). *Cities and Regions in the New Learning Economy*, published by the Centre for Educational Research and Innovation (CERI) of the Organization for Economic Cooperation and Development (OECD), Paris, 147 pp.

Edquist, C., and Sjögren, H. (2001). *Östergötland – en innovativ miljö? (East Gothia – An Innovative Environment? – in Swedish)*. Report published by Centrum för kommunstrategiska studier, Linköping University, 35 pp.

Edquist, C., Hommen, L., and McKelvey, M. (2001). *Innovation and Employment: Process versus Product Innovation*. Cheltenham, UK: Edward Elgar Publishing, 214 pp.

Edquist, C., Hommen, L., and Tsipouri, L. (Eds.). (2000). *Public Technology Procurement and Innovation*. Boston/Dordrecht/London: Kluwer Academic Publishers, 311 pp. (includes six co-authored chapters).

Edquist, C., and McKelvey, M. (Eds.). (2000). *Systems of Innovation: Growth, Competitiveness and Employment*, an Elgar Reference Collection. Cheltenham, UK: Edward Elgar Publishing, 1086 pp. (two volumes) (with an Introduction by the editors, and including another four authored or co-authored chapters).

Edquist, C. (1999, February). *Teknikbrostiftelsen i Linköping: En utvärdering av dess roll som offentlig såddfinansier i det regionala innovationssystemet (The Technology Bridge Foundation in Linköping: An Evaluation of its Role as a Public Provider of Seed Capital in the Regional System of Innovation*, written in Swedish). Linköping, 60 pp.

Edquist, C., Dieter, E., Holland, J., and Kaplinsky, R. (1999). *The Science, Technology and Innovation Policy Review: Jamaica*, United Nations Conference on Trade and Development and The Commission on Science and Technology for Development, United Nations, New York and Geneva, 156 pp.

Edquist, C., and Texier, F. (Ed.). (1998, August). *Innovation Systems and European Integration (ISE)*, CD-ROM containing 33 research reports produced within ISE, EU-funded research project coordinated by Charles Edquist, (ISBN: 91-7219-266-6).

Edquist, C., Hommen, L., Johnson, B., Lemola, T., Malerba, F., Reiss, T., and Smith, K. (1998, May). *The ISE Policy Statement: The Innovation Policy Implications of the Innovation Systems and European Integration (ISE) Research Project*. Linköping, Sweden (also included in the CD-ROM mentioned above), 76 pp.

Edquist, C. (Ed.). (1997). *Systems of Innovation: Technologies, Institutions and Organizations*. London: Pinter Publishers/Cassell Academic, 432 pp. (This is one of the most cited publications at <http://scholar.google.com/>).

Edquist, C., (1993). *Innovationspolitik för förnyelse av svensk industri (Innovation Policy for Renewal of Swedish Industry*, in Swedish). Tema T Rapport 33, University of Linköping, Department of Technology and Social Change, 90 pp.

Edquist, C., and Jacobsson, S. (1988). *Flexible Automation - The Global Diffusion of New Technology in the Engineering Industry*. Oxford: Basil Blackwell, 227 pp.

Clark, N., Edquist, C., Kaplinsky, R., and Pimentel, D. *Cyprus Technology Strategy*, Report of the UNDP/OPE Mission, Institute of Development Studies, Sussex University, June 1988, 213 pages.

## **6.2. Book Chapters and Journal Articles**

Please visit website <https://charlesedquist.com/> for links to publications.

Edquist, C. (2019). Towards a holistic innovation policy: Can the Swedish National Innovation Council (NIC) be a role model? *Research Policy*, 48(4). doi:10.1016/j.respol.2018.10.008

Edquist, C., Zabala-Iturriagoitia, J.M., Barbero, J., & Zofio, J. (2018). On the meaning of innovation performance: Is the synthetic indicator of the Innovation Union Scoreboard flawed? *Research Evaluation*, 27(3), 196-211. doi:10.1093/reseval/rvy011

Wesseling, J. H., & Edquist, C. (2018). Public procurement for innovation to help meet societal challenges: a review and case study. *Science and Public Policy*. doi: 10.1093/scipol/scy013

Edquist, C. (2018). Towards a Holistic Innovation Policy: Can the Swedish National Innovation Council Serve as a Role Model? (CIRCLE Working Paper 2018/2). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Salles-Filho, S. L., Castro, P. F., Bin, A., Edquist, C., Ferro, A. F., & Corder, S. (2017). Perspectives for the Brazilian bioethanol sector: The innovation driver. *Energy Policy*, 108, 70-77. doi:10.1016/j.enpol.2017.05.037

Edquist, C. (2016). The Swedish National Innovation Council – Innovation policy governance to replace linearity with holism. (CIRCLE Working Paper 2016/24). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Wessling, J.H. and Edquist, Ch. (February 2016). *Public Procurement for Innovation: lessons from the procurement of navigable storm surge barrier*. (CIRCLE Working Paper 2016/5). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy. Edquist, C. (August 2015).

*Innovation-related Public Procurement as a Demand-oriented Innovation Policy Instrument*, (CIRCLE Working Paper 2015/28). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. and Zabala-Iturriagoitia, J.M (August 2015). The Innovation Union Scoreboard is Flawed : The Case of Sweden-not the innovation leader of the EU-updated version.

(CIRCLE Working Paper 2015/27). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. and Zabala-Iturriagoitia, J.M (May 2015). ). The Innovation Union Scoreboard is Flawed : The Case of Sweden-not the innovation leader of the EU.(CIRCLE Working Paper 2015/16). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. and Zabala-Iturriagoitia, J.M. (2015). Pre-commercial procurement: A demand or supply policy instrument in relation to innovation? *R & D Management*. doi: 10.1111/radm.12057

Borrás, S., and Edquist, C. (2015). Education, training and skills in innovation policy. *Science and Public Policy*. doi:10.1093/scipol/scu043  
Borrás, S., and Edquist, C. (2015). Innovation Policy for Knowledge Production and R&D: The Investment Portfolio Approach. In Crespi, R., and Quatraro, F. (Eds.), *The economics of knowledge, innovation and systemic technology policy*. London, UK: Routledge (forthcoming).

Edler, J., Edquist, C., Vonortas, N., and Zabala-Iturriagoitia, J.M. (2015). Conclusions: Lessons, limitations and way forward. Edquist, C., Vonortas, N., Zabala-Iturriagoitia, J.M., and Edler, J. (Eds.), *Public Procurement for Innovation* (pp. 299-306). Cheltenham: Edward Elgar Publishing.

Edquist, C., Vonortas, N., and Zabala-Iturriagoitia, J.M. (2015). Introduction. Edquist, C., Vonortas, N., Zabala-Iturriagoitia, J.M., and Edler, J. (Eds.), *Public Procurement for Innovation* (pp. 1-34). Cheltenham: Edward Elgar Publishing.

Edquist, C. (2015). Design of Innovation Policy through Diagnostic Analysis: Identification of Systematic Problems (or Failures). Fagerberg, J. and Mowery, D. (Eds.), *Innovation, Technology and Economic Change*, Cheltenham: Edward Elgar Publishing. This article was republished from the journal *Industrial and Corporate Change*, 2011.

Borrás, S., and Edquist, C. (2014). Institutions and Regulations in Innovation Systems Effects, Problems and Innovation Policy Design (CIRCLE Working Paper 2014/29). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. (2014). Striving towards a Holistic Innovation Policy in European countries – But linearity still prevails!. *STI Policy Review*, 5(2), 1-19.

Edquist, C. (2014). *Efficiency of Research and Innovation Systems for economic growth and employment – Report for the European Research and Innovation Area Committee* (CIRCLE Working Paper 2014/08). Lund University, Sweden: Centre for Innovation, Research and Competence in the Learning Economy.

Edquist, C. (2014, July). En helhetlig innovationspolitik – varför, vad och hur? (A holistic innovation policy – why, what and how? – in Swedish). In Wagner, M. O. (Ed.), *Position Sverige – Om innovation, hållbarhet och arbetsmarknad – en debattantologi* (Position

*Sweden – On innovation, sustainability and labour market – A debate anthology – in Swedish* (pp. 59-80). Stockholm, Sweden: Ekerlids Förklad.

Borrás, S., and Edquist, C. (2013). Competence building: A systemic approach to innovation policy. This paper was given the *award for best paper at the Atlanta Conference of Science and Innovation Policy*, Georgia, USA, 26-28 September 2013. Accepted for publication in Crespi, F. and Quatraro, F. (Eds.), *The Economics of Knowledge, Innovation and Systemic Technology Policy*, Routledge (forthcoming).

Edquist, C. (2013). Innovation policies and instruments – With a demand-side emphasis. In Kim, K.W. (Ed.), *Changing landscape of industrial innovation and new challenges for policy*. Korea Development Institute.

Edquist, C. (2013). Feature: Comparing National Systems for Innovation Policy Purposes, in Australian Innovation System Report 2013. Australian Government, Department of Industry.

Borrás, S., and Edquist, C. (2013). The choice of innovation policy instruments. *Technological forecasting and Social Change*, 80(8), 1513-1522. doi:10.1016/j.techfore.2013.03.002.

Edquist, C., and Zabala-Iturriagoitia, J.M. (2012). Public Procurement for Innovation as mission-oriented innovation policy. *Research Policy*, 41(10), <http://dx.doi.org/10.1016/j.respol.2012.04.022>.

Edquist, C., and Zabala-Iturriagoitia, J.M. (2012). Chapitre 10: La commande publique pour l'innovation: Une politique orientée par le demande [Chapter 10: Translation of public procurement for innovation (PPI) as mission-oriented innovation policy, *Research Policy*, 2012.]. In Lesourne, O, and Randet, D. (Eds.), *La recherche et l'innovation en France Futuris 2012*. France: Odile Jacob.

Edquist, C. (2011). Design of innovation policy through diagnostic analysis: Identification of systemic problems (or failures). *Industrial and Corporate Change*, 20(6), 1-29. doi: 10.1093/icc/dtr060.

Edquist, C. (2011). Systems of Innovation: Perspectives and Challenges. *African Journal of Science, Technology, Innovation and Development (AJSTID)*, 2(3), 14 – 43.

Borrás, S., Fagerberg, J., and Edquist, C. (2011). Introduction to a special issue on learning, innovation systems and policy in honour of Bengt-Åke Lundvall. *Science and Public Policy*, 38(9).

Edquist, C., and Hommen, L. (2011). Comparing National Systems of Innovation in Asia and Europe: Theory and Comparative Framework. In Edquist, C., and Hommen, L. (Eds.), *Small Country Innovation Systems: Globalisation, Change and Policy in Asia and Europe*. Edward Elgar. Published in Chinese by Science Press (Beijing), 27 pp.

Edquist, C. and Hommen, L. (2011). Preface. In Edquist, C., and Hommen, L. (Eds.), *Small Country Innovation Systems: Globalisation, Change and Policy in Asia and Europe*. Edward Elgar. Published in Chinese by Science Press (Beijing).

Bitard, P., Edquist, C., Hommen, L., and Rickne, A. (2011). Reconsidering the Paradox of High R&D Input and Low Innovation: Sweden. In Edquist, C., and Hommen, L. (Eds.), *Small Country Innovation Systems: Globalisation, Change and Policy in Asia and Europe*. Edward Elgar. Published in Chinese by Science Press (Beijing), 44 pp.

Edquist, C., and Hommen, L. (2011). *Concluding Chapter: Globalisation and Innovation Policy*. In Edquist, C., and Hommen, L. (Eds.), *Small Country Innovation Systems: Globalisation, Change and Policy in Asia and Europe*. Edward Elgar. Published in Chinese by Science Press (Beijing), 43 pp.

Chaminade, C., and Edquist, C. (2010). Rationales for public policy intervention in the innovation process: A systems of innovation approach In Kuhlman, S., Shapira, P., and Smits, R. (Eds.), *Innovation Policy – Theory and Practice. An International Handbook*. Edward Elgar. (The book was published in Paperback in early 2012.)

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Edquist, C. *Government Technology Procurement as an Instrument of Technology Policy*. Working Paper 148, Department of Technology and Social Change, 1995, 30 pp.

Edquist, C. *Systems of Innovation Research Programme - Theory and the Swedish Case*. Working Paper 149, Department of Technology and Social Change, 1995, 47 pp.

Edquist, C. *Innovation Systems and European Integration (ISE), Application to Area I.1*. Targeted Socio-Economic Research, DG XII, European Commission - revised into a work programme, December, 1995, 69 pp. (The project involved nine research groups in nine European countries, was co-ordinated by Charles Edquist and funded by the European

Commission as part of the Targeted Socio-Economic Research (TSER) Programme, DG XII, Contract no. SOE1-CT95-1004 (DG12 SOLS)).

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Edquist, C. *Offentlig teknikupphandling för behovstillfredställelse och konkurrenskraft (Public Technology Procurement for Needs Satisfaction and Competitiveness*, in Swedish). Published as Report No 1 in the series Industrial Policy for Growth, and as Tema T Report no 34, 1994, Department of Technology and Social Change, Linköping University.

Edquist, C. *Systems of Innovation Research Programme - Progress Report and Planned Activities*. Tema T Working Paper, Department of Technology and Social Change, 1994.

Edquist, C. *Technical Change as Interaction Between Governments and Markets*, in *Proceedings of the Third International Symposium on Technology Transfer and Technology Diffusion*, Yokohama, Japan, March 1994, published by the Engineering Academy of Japan, 1994.

Edquist, C. *Innovationspolitiska medel för förnyelse av svensk industri på 1990-talet (Innovation Policy Instruments for Renewal of Swedish Industry in the 1990s*, in Swedish), Mimeo, Linköping, 1993.

Edquist, C. *Technological Unemployment and Innovation Policy in a Small Open Economy*. Paper prepared at the request of the OECD for *The Conference on Technology, Innovation Policy and Employment*, organized by the OECD and the Finnish Government, Helsinki 7-9 October, 1993, September 1993.

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Edquist, C. *The Diffusion of New Technologies and New Organizational Forms in Production*. Paper presented at the European Workshop on Research and Development Strategies in the Field of Work and Technology, Dortmund, Germany, 23-25 October, 1990, 12 pp.

Edquist, C., and Glimell, H. *New Forms of Work Organization in Sweden*. Paper presented at a conference on Post-Fordism in Grantham, UK (October, 1989) jointly organized by the Friedrich Ebert Foundation London Office and the Fabian Society. The paper has been published in Peter W Schulze and John Willman (editors): *Post-Fordism*, Occasional Papers No. 1, Friedrich Ebert Foundation, London Office, November 1990.



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Edquist, C. *Utvärdering av Statligt Stöd till Verkstadsindustriell Teknik (Evaluation of Public Support to Technical Change in the Engineering Industry*, written in Swedish), Report on state support to R&D and Technological development written for the Swedish Ministry of Industry, September, 1989, 89 pp. (Also published as Tema T Report 22, Department of Technology and Social Change, University of Linköping, January 1991.)

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*Consequences for Working Life: A draft research programme at the Department of Technology and Social Change*. Paper presented at a Workshop on Information Technology and New Economic Growth organized by the OECD in Tokyo and Osaka, September 1988.

Edquist, C. *Development and Diffusion of New Technologies: Notes on Policies in Report of a Seminar on the Diffusion of 'High Tech' and the Labour Market*, New Delhi, March 1988. Published by the International Institute for Labour Studies, ILO, Geneva, 1988.

Edquist, C., and Jacobsson, S. *Flexible Automation and Employment. The Impact of High Technology on Economic Development and International Competitiveness in Industrialized and Newly Industrializing Countries: A Comparative Analysis*. Paper presented at the Seminar on National Industrial Policy in an International Context of Rapidly Changing Technology, January, 1987, Rio de Janeiro, Brazil.

Edquist, C. *Difusion de las Tecnologias de Automatizacion Flexible en la Industria de Bienes de Capital de los Paises Industrializados: Repercusiones para los Paises en Desarrollo y sus Posibles Reacciones*, in *Microelectronica en las Industrias de Bienes de Capital de los Paises del Grupo Andino*, Informe Final de la Reunion del Grupo Tecnico ONUDI/JUNAC, Paipa y Bogota (Colombia), Organizacion de las Naciones Unidas Para el Desarrollo Industrial (UNIDO), Subdivision de Estudios de Trabajo Sectoriales, Division de Estudios e Investigaciones, PPD. Vienna, 27 Mayo 1987.

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Edquist, C. *Some Thoughts Related to Technology Policy Based on a Comparative Study of Cuba and Jamaica*, in Hans Gustavsson (ed.), *Technology Policies for Development - Issues Relevant for Decision Making in Capital Goods Production*, Discussion Paper No 173, Research Policy Institute, University of Lund, Sweden, 1986, 7 pp.

Edquist, C., and Jacobsson, S. *Flexible Automation in the Engineering Industry in Industrialized Countries and Perspectives for Developing Countries*, in *Production and Use of Machine Tools in the Engineering Industry of ESCAP Developing Countries*, UNIDO, Sectoral Studies Branch, Studies and Research Division, Sectoral Working Paper Series No. 55, Vienna, 1986.

#### **6.4. Articles in the Popular Press and Appearance in the Media**

Interviewed in the journal *Dagens Samhälle* on June 20, 2019 about how functional procurement can enhance the development of innovations.

Debate article in the Swedish Newspaper *NyTeknik* with Nordlander, J., Johansson, I., & Edquist, C., *Köp snabba tågtransporter – inte höghastighetståg* (Buy rapid train transports – not high speed trains). June 11, 2019.

Debate article in the Swedish Newspaper *Ny Teknik* with the title “Rätt innovationspolitik kan försvara välfärden”, (“The right innovation policy can defend welfare”) January 16, 2019

Interviewed in the Spanish daily *La Vanguardia* with the title “Para innovar y gobernar bien no hacen falta doctorados”, September 26, 2018.

Opinion article by Edquist, C., & Zabala-Iturriagoitia, J. M. with the title “Viewpoint: The latest EU innovation index is out. It’s flawed.” in *Science Business*, June 22, 2018.

Debate article in *Upphandling 24* “*Funktionsupphandling för ökad innovation*” (Functional Procurement for increased innovation) February, 2016.

Op-ed article in the Swedish daily economical newspaper *Dagens Industri* “Så kan upphandling förbättras” (Public Procurement can be improved in this way), January 27, 2016.

Interviewed in the newsletter of *Sveriges Offentliga Inköpare* with the title “Charles Edquist – offentlig upphandling är avgörande!” (*Charles Edquist – Public Procurement is crucial – in Swedish*), June 18, 2015.

Hodzic A., and Edquist, C. “*Upphandlingen avgör innovationskraften*” (*Procurement decides the innovation power – in Swedish*). Article published in the Swedish journal *Dagens Samhälle*, June 17, 2015.

Interviewed in *Ny Teknik* “*Trafikverket tvingas köpa produkter som inte finns*” (*The Traffic Agency is forced to buy products that do not exist – in Swedish*) May 20, 2015.

Edquist, C. *Innovationspolitiken måste samlas i en egen proposition (Innovation policy must be united into a separate government bill)*. Debate Article Published in Swedish daily *Dagens Nyheter*, May 11, 2015.

Featured in *8till5* section of *Sydsvenskan* with the title ”*Charles Edquist är missionär för en smartare svensk innovationspolitik*” (*Charles Edquist is a missionary for a smarter Swedish innovation policy* – in Swedish), March 14, 2015.

Interview in Research Europe “*Sweden set to switch tracks*”, March 19, 2015.

”*Hur räddar vi jobben i Lund? – Debatt efter varslen på Sony (This is how we save the jobs in Lund – debate after the lay-offs at Sony)*”. Debate broadcasted by *Sydsvenskan*, March 19, 2015.

”*Five important characteristics of successful innovation policy*”. *Lunds Universitets Magasin (LUM)*, March 25, 2015.

Interviewed about the Swedish National Innovation Council in *Rapidus*, February 24, 2015. Edquist, C. *Sätt fart på innovationspolitiken nu – börja med upphandlingen! (Get started with the innovation policy now – start with procurement!)*. *Tiden*, 3(4), December 22, 2014.

Edquist, C., Nilsson, J., and Petersson, B. *Innovation ska driva Sverige – Inte låga löner (Innovation Shall Drive Sweden – not low wages)*. Article Published in Swedish weekly journal *Ny Teknik*, September 8, 2014.

Feature article in “*International Innovation*” Magazine, with the title “*Centre for Innovation, Research and Competence in the Learning Economy*”, p. 21 – 23.

Edquist, C. *Inrätta ett råd för innovationspolitik (Establish a council on innovation policy)*, written in Swedish). Article published in the Swedish daily newspaper *Svenska Dagbladet*, June 21, 2013.

Edquist, C. was interviewed in a movie produced for the Almedalen Week in 2013.

Interview with Charles Edquist about innovation indicators, April 24, 2013, [www.life-time.se](http://www.life-time.se).

Featured on Jensen, S.E.’s article: *Svensk innovation i EU-topp men är det hela sanningen? (Swedish innovation best in the EU, but is it the whole truth? - in Swedish)*. Article published in Swedish website LIFe-time.se, April 24, 2013. Accessible via: <http://www.life-time.se/2013/04/24/svensk-innovation-i-eu-topp-men-ar-det-hela-sanningen/> .

Edquist, C. *Den svenska regeringen missar innovationspolitiken (The Swedish government misses innovation policy - in Swedish)*. Article published in the Swedish daily newspaper *Dagens Nyheter*, March 16, 2013, page 6. (Translation into English is available at <http://charlesedquist.com>.)

Edquist, C., and Hederén, J. *Staten bör gifta ihop digital-tv med bredband (The State Should Marry Digital TV with Broadband)*, written in Swedish). Article published in the Swedish daily business newspaper *Dagens Industri*, March 18, 2003.

Edquist, C. *Så kan industrin skapa 125 000 jobb (In This Way Industry Can Create 125 000 Jobs*, written in Swedish). Article published in the Swedish daily newspaper *Expressen*, March 11, 1996.

Edquist, C. *Svensk industri tar inga 'onödiga' risker - Sverige ligger efter när det gäller framtidsbranscher (Swedish Industry Takes No 'Unnecessary' Risks – Sweden is Lagging Behind with Regard to Future-Oriented Sectors*, written in Swedish). Article published in the Swedish daily newspaper *Svenska Dagbladet*, September 3, 1995.

Edquist, C. *Produktiviteten i skymundan (Productivity in the Background*, written in Swedish). Article published in the Swedish daily newspaper *Dagens Nyheter*, April 8, 1993.

Edquist, C. *Audacious Manufacturing but Simple Products* in *Forskning och Framsteg*, December 1990. (This article was awarded a prize, by the Bank of Sweden Tercentenary Foundation, for being the best popular science article in the field of humanities and social sciences)

## 7. Selected Recent Conferences, Seminars and Lectures

In addition to participating in about 250 international scientific conferences, I have been an invited lecturer and keynote speaker at many, the general rapporteur at a few and the organiser of some. Many of the conferences have involved policy-makers, academics and representatives of firms. Selected examples of my conference participation, from the last decade (or so) and with emphasis on more recent years, are:

Charles participated in the 2019 Conference of Eu-SPRI (European Forum for Studies of Policies for Research and Innovation), held in Rome on June, 5 – 7. Together with Jon Mikel Zabala Iturriagoitia he presented a paper on “Functional Procurement for Innovation, Welfare and Sustainability” in a session on “Transformative Innovation Policy”. At another session he presented the new book entitled “**Holistic Innovation Policy: Theoretical Foundations, Policy Problems and Instrument Choices**”, [Oxford University Press](#), March 2019 – written together with Susana Borrás.

At the Oslo Campus of the Norwegian Business School – BI, Charles made a presentation entitled “Functional Procurement for Innovation, Welfare and the Environment” on Wednesday, May 22, 2019.

Charles made a presentation entitled “Fossil free innovations by means of functional procurement – daring to think in new ways” at the “Fossil Free Sweden Initiative” in Stockholm. The title of the conference was “Fossil Free Public Procurement – obstacles and possibilities” on May 20, 2019.

The book, “Holistic Innovation Policy: Theoretical Foundations, Policy Problems and Instrument Choices” was presented by Charles on May 13, 2019 at the Research Institute of Industrial Economics (Institutet för Näringspolitiska Studier – IFN), Stockholm.

During March 1 – 31, 2019, was appointed to hold the “UAM-Accenture Visiting Fellowship” in the area of economics and management of innovation at the “UAM-Accenture Chair”, the Autonomous University of Madrid

Charles participated in a seminar on “Innovation, Economic Development and Policy” at the TIK Centre for Technology, Innovation and Culture at the University of Oslo on September 20, 2018.

Gave a key-note lecture on Holistic Innovation Policies in Universitat de Barcelona, September 18, 2018.

Scheduled to participate in the EU-SPRI 2018 Conference in Paris, entitled “Governance and relevance: Towards a new generation of research and innovation policies”. However, because of problems with flights, he did not reach Paris. But his co-authors presented two joint papers. Susana Borrás presented a paper entitled “Theoretical Foundations of a Holistic Innovation Policy”. Jon Mikel Zabala Iturriagoitia presented a paper entitled “Introducing functional procurement as an approach to stimulate innovation”.

Presented “Conceptual Underpinnings for Innovation Policy Design – Indicators and Instruments in Context” (co-authored with Borrás, S.). Paper prepared for OECD Blue Sky Conference III, 19-21 September, 2016, Ghent, Belgium.

Presented “Edquist, C. (2016). The Swedish National Innovation Council – Governance to replace linearity with holism in innovation policy?” at SPRU Conference, 7-9 September 2016, Sussex, U.K.

Presented “Separate innovation policy and research policy – to abandon linearity!” at the 2016 Eu-SPRI Conference, 7-10 June, 2016, Lund, Sweden.

Presented “Public innovation policy and firm innovation strategies: public risk capital funding should be seed funding – but additionality is not there!” at the 5<sup>th</sup> European Conference on Corporate R&D and Innovation (CONCORDI 2015), organised by Joint Research Centre of the European Commission, Seville, Spain, October 1-2, 2015.

Presented the paper “Demand-oriented Innovation Policy: Innovation-related Public Procurement to Solve Societal Problems and Satisfy Human Needs” at the The 13th Globelics International Conference, in Havana, Cuba, September 23-25, 2015.

Presented CIRCLE Working Paper 2015/27 “The Innovation Union Scoreboard is Flawed: The case of Sweden – not the innovation leader of the EU – updated version” at a seminar held at the European Commission, Brussels, September 15, 2015.

Gave a lecture on “Driving Innovation through Public Policy: The Case of Sweden” in a seminar organised by Thai Agencies National Innovation Agency and the National Science Technology and Innovation Policy Office in Bangkok, September 5-7, 2015.

Invited keynote speaker at “The 16<sup>th</sup> International Conference on Industrial Technology Innovation (ICITI, 2015)” with the presentation “Linear vs Holistic Innovation Policies: The Role of the Public Sector”, Taipei, Taiwan, September 3-4, 2015.

Participated on a discussion on “Innovation-related procurement in a local setting” organised by Sparbankernas Riksförbund during the Almedalen Week at Visby, Gotland, June 30, 2015.

Invited speaker on “Financing of Innovation and Growth” at a seminar organised by Ratio (Näringslivets forskningsinstitut) during the Almedalen Week at Visby, Gotland, June 29, 2015.

Presented “Public risk capital funding should be risk funding – but additionality is not there” and co-presented “The Innovation Union Scoreboard is Flawed: the Case of Sweden – not being the innovation leader of the EU” with Jon Mikel Zabala-Iturriagagoitia at the EU-SPRI Annual Conference 2015, Helsinki, Finland, June 10-12, 2015.

Presented “Speed up innovation procurement: buy functions – not products!” at a seminar on “How do we create prerequisites of innovation procurement” organised by Region Skåne, Malmö, June 5, 2015

Invited keynote speaker and presented “Innovation-Related Public Procurement (state-of-the-art)” at the “Demand-Side Policies for Innovation/Public Procurement for Innovation” Conference at the State University of Campinas (UNICAMP), Sao Paulo, Brazil, May 27-29, 2015.

Participated in a public discussion on innovation policy at RISE-Day, organised by Research Institutes of Sweden in Stockholm, April 23, 2015.

Discussed on “Innovation Policy for Sweden” at a seminar organised by SP Technical Research Institute of Sweden called “SP-days”, Stockholm, April 15, 2015.  
Innovations Systems and Innovation Policy: public risk capital provision and public innovation procurement. The Swedish National Innovation Council, Harpsund, February 24, 2015.

Presented “Sweden does not (unfortunately) lead the EU Innovation League – or the EU Commission is wrong – What to do?” at the first meeting of the Swedish National Innovation Council in Stockholm, February 24, 2015.

Invited keynote speaker at the Informal Meeting of Health Ministers, organized by the Italian Presidency of the EU Council. Milan, Italy, September 21-22, 2014.

Discussed about “Innovation, Entrepreneurship and Policies” at the 2014 International Conference on Industrial Technology Innovation, organized by TIER (Taiwan Institute of Economic Research). Taipei, Taiwan, September 3-5, 2014.

Panelist in a discussion on University Rankings, organized by CIRCLE and Swedish Entrepreneurship Forum. Lund, Sweden, September 1, 2014.

Presented on “Public Procurement and Innovation – Obstacles and how to overcome them” at a seminar on Innovation Procurement, organized by The Swedish Energy Agency. Stockholm, Sweden, August 29, 2014.

Presented the ERAC (European Research and Innovation Area Committee) report “Efficiency of Research and Innovation Systems for Economic Growth and Employment” under the title “Why is Holistic Innovation Policy not pursued in the European Union?” at the EU-SPRI (European Forum for Studies of Policies for Research and Innovation) 2014 Manchester Conference. Manchester, United Kingdom, June 18 – 24, 2014.

Presented “A Holistic Innovation Policy” at the STEPI (Science and Technology Policy Institute of Korea) International Symposium in Korea, May 15, 2014.

Presented “Innovation Policy and Research Policy” at the ERAC ad-hoc Working Group on the European Semester and ERA Monitoring Seminar on the Efficiency and Effectiveness on R&I Systems, European Commission, May 5, 2014.

Invited as an independent expert during the Mutual Learning Seminar on R&I policies, organized by ERAC, in Brussels, Belgium, March 20, 2014.

Presented the paper entitled “A Holistic Innovation Policy – Why, What and How?” during the Lundvall Symposium 2014, organized by IKE Group of Ålborg University, Denmark. March 13 – 14, 2014.

Participated in a panel discussion on “Innovation Power for a more Entrepreneurial Sweden” during Småföretagsdagarna (Small Business Day), organized by the Swedish Entrepreneurship Forum. Stockholm, Sweden, March 12, 2014.

Participated in a Panel Discussion at the OECD Workshop on measuring the link between public Procurement, R&D and Innovation, Paris, 5-6 December 2013.

Participated as a keynote speaker in a Forum-Panel on “Partnerships for Industrial Development” at the 15<sup>th</sup> UNIDO (United Nations Industrial Development Organization) World Conference in Lima, Peru on Monday, December 2, 2013.

Presented “How to design innovation policy – including the example of public procurement for innovation”. At the Center for Technology, Innovation and Culture (TIK-Centre), November 13, 2013, Oslo, Norway.

Invited as a speaker and guest at CASTED (The Chinese Academy of Science and Technology for Development), which also included meetings organized at several other innovation policy organizations in Beijing. October 28 – November 1, 2013.

Invited panel speaker in the Policy Forum on “Innovation environment: Coordination between supply-side and demand-side policies” at the Pujian Innovation Forum. 26-27 October 2013, Shanghai, China.

Invited as a discussant on Martin Warland’s presentation on “Innovation systems for secondary capital cities: The role of KIBS in public procurement processes” at the Early Career Researcher Conference. Organized by the European Forum for Studies of Policies for Research and Innovation (EU-SPRI), CIRCLE and Lund University. 2-3 October 2013, Lund, Sweden.

Participant at the conference on “Innovations in Order”. Organized by the Swedish Agency for Innovation Systems (VINNOVA), 30 September 2013, Stockholm, Sweden.

Presented the paper: “Competence building: A systemic approach to innovation policy”, written together with Susana Borrás, at the Atlanta Conference on Science & Innovation Policy, 26-28 September 2013, Georgia, USA. (*This paper received the “Best Paper Award 2013” at the Conference*).

Presenter at the IHE Forum, "Innovationsupphandling - till nytta för sjukvården? / Innovation Procurement - for the benefit of health care?" Organized by the Institutet för Hälso- och

Siukvårdsekonomi / The Swedish Institute for Health Economics, 6 September 2013, Lund, Sweden.

Invited key-note speaker on "How to design innovation policy: identification of policy problems" and "Innovation Policy in Sweden" at the 14th International Conference on Industrial Technology Innovation, 5 September 2013, Taipei City, Taiwan.

Invited panelist in "Hur bygger vi en forskningsby från scratch? / How do we build a science park from scratch?" seminar, organized by MAX IV together with ESS and Science Village Scandinavia AB, 4 July 2013 in Lund, Sweden.

Invited key-note speaker on "Innovation systems and innovation policy" organized by Merck, Sharp & Dohme, American Chamber of Commerce and Stockholm Science City, 2 July 2013 in Visby Almedalen, Sweden.

Invited keynote speaker at the Global industry and economy forum 2013 with the topic on "Innovation policies and instruments - with demand-side emphasis". Organized by the Korean Development Institute last 24 June 2013 in Seoul, the Republic of Korea.

Panel debater: "Sveriges innovationspolitik / Sweden's innovation policy" at the Sveriges Innovationsriksdag 2013, 23 May in Lund, Sweden.

Presented "The choice of innovation policy instruments" with Borrás, S. at the Swedish Entrepreneurship Forum in Lund, Sweden, 18 May 2013.

Panel speaker on "Why pre-commercial procurement is not innovation procurement" with Zabala, J. M., at "The management of innovation policies: new forms of collaboration in policy design, implementation and evaluation." Organized by the European Forum for Studies of Policies for Research and Innovation, 10-12 April 2013, Madrid, Spain.

Gave a seminar on "Innovation systems, innovation policy and innovation procurement - an account of the state of the art" at the Copenhagen Business School, 27 February 2013.

Keynote speaker at the Expert workshop on the measurement of public procurement of innovation. Discussed on "Innovation procurement: what is it and what does it mean for grand challenges, growth and employment." Organized by the Organisation for Economic Co-operation and Development, 4 February 2013, Paris, France.

Presentation about "The Establishment and Development of CIRCLE during 2004 – 2012" at the Department of Industrial Engineering Management, Uppsala University, 7 December, 2012.

Presentation of "Innovation Policy and Innovation Systems" at Uppsala University Innovation, 7 December 2012.

"A US Contribution on Public Procurement of Innovation". *Innovation out of the Crisis*. European Commission, DG Research and Innovation 28 November 2012. (Author of article discussed was David Mowery).



Presentation of paper entitled "Supporting innovation and growth of European industries: The use of innovation procurement", European Commission, DG Enterprise, Innovation Policy for Growth, Brussels, November 27, 2012.

"Innovation Policy for Growth and Sustainability – Some Swedish experiences and the way forward". *The Industrial High Road to Sustainability and Growth*. Friedrich Ebert Stiftung, 25 October 2012. Stockholm, Sweden.

The final conference of the EU FP 7 project "Advancing knowledge-intensive entrepreneurship & innovation for economic growth and social well-being in Europe (AEGIS), 6-8 September 2012.

Book Review and Panel Debater. "Ett Ramverk för Innovationspolitiken – Hur Göra Sverige mer Entreprenöriellt?". Organized by Institutet för Näringslivsforskning, IFN, IVA and Entreprenörskapsforum. 21 August 2012. Stockholm, Sweden.

Presenting a lecture on "Small Country Innovation Systems: Globalization, Change and Policy in Asia and Europe" at Beijing Normal University, Beijing, China, June 17, 2012.

Presented a paper on "What is meant by Pre-Commercial Procurement?". *2012 EU-SPRI Conference: Towards transformative governance? Responses to Mission-oriented Innovation Policy Paradigms*. Karlsruhe, 12-13 June 2012. (Co-authored with J.M. Zabala-Iturriagoitia).

Key-Note Speech entitled "The Design of Innovation Policy" at The International Forum on Innovation in Education: Universities and the Training of Creative Talents, Beijing Normal University, Beijing, China, June 16, 2012.

"The Design of Innovation Policy in Systems of Innovation Perspective". *Linkages Between Actors in the Innovation System*. Higher School of Economics National Research University, 13-15 June 2012. Moscow, Russia.

Invited Contribution entitled "Systems of Innovation and Innovation Policy" at an Extended Workshop at the Higher School of Economics (HSE), the Research Laboratory for Economics of Innovation, Moscow, Russia, June 13-15, 2012.

Organized session on "Public Procurement and Innovation (PPI) as Mission-oriented Innovation Policy". *Towards Transformative Governance? Responses to Mission-oriented Innovation Policy Paradigms*. Fraunhofer ISI and Eu-SPRI, 12-13 June 2012. Karlsruhe, Germany.

Participated in meetings with *Forskningsberedningen*, Rosenbad, Stockholm, March 30 and May 9, 2012.

Lecture on *The Design of Innovation Policy: A Challenge for the Future* at the Seminário Internacional Sobre Pequenos Negócios (International Conference on Small Business), organised by Servico Brasileiro de Apoio às Micro e Pequenas Empresas (SEBRAE), 18 – 20 Abril de 2012, Hotel Grand Hyatt, Sao Paulo, Brasil.

Paper, *Public Procurement for Innovation (PPI) as Mission-oriented Innovation Policy*, (co-author Jon Mikel Zabala) at conference, Demand, Innovation and Policy Underpinning Policy Trends with Academic Analysis, organized by the research project, Understanding Public Procurement of Innovation, Manchester, March 22 – 23, 2012.

Presentation of Cycle de Conférences de Charles Edquist sur les politiques de l'innovation at CNAM, rue Conte, 75003 PARIS:

- “The History and Design of Innovation Policy”, 6 March, 2012. Discutant: Philippe Laredo, Université Paris-Est/University of Manchester
- “Public Procurement for Innovation as Mission-oriented Innovation Policy, 20 March, 2012. Discutant: Benjamin Coriat, CEPN, Université Paris 13
- “The Knowledge Basis of the Innovation Process”, 3 April, 2012. Discutant: Pascal Petit, CEPN, Université Paris 13.

Presentation, *Public Procurement for Innovation as Mission-oriented Innovation Policy*, at internal seminar, Department of Science, Technology and Industry, OECD, Paris, 13 February, 2012.

The Growth Dialogue on the New Economic Geography of Innovation and the Impact of the Economic Crisis: A Policy Symposium. OECD, 19-20 January 2012. Paris, France.

Participation in a workshop organized by Projet de Politique Scientifique Indir: Innovation, Dynamique Industrielle et Regulation: enjeux Contemporains de Politiques Publiques”, Université Paris 1 Panthéon-Sorbonne, Vendredi 9 Decembre 2011.

Key-note presentation, *Economic Crisis and Innovation Policy*, at Annual Meeting of the Japanese Association of Evolutionary Economics, Nagoya, Japan, March 19, 2011.

Participation in Workshop on Innovation Studies, Entrepreneurship Studies and STS, CIRCLE, 6-8 December, 2010.

Presentation of *Is Sweden a strong Innovation Country?* organized by CONNECT Skåne, Lund, November 26, 2010.

Presentation of *How to Create an Innovative Society: Innovation Policy and Innovation Research*, The EXPO 2010, World Fair, Shanghai, October 21, 2010.

Presentation of *CIRCLE at Lund University* organized at The Swedish Pavilion, Shanghai World Fair, October 21, 2010.

Presentation, *Reflections on Innovation Policy*, for VINNOVA leaders at Swedish Agency for Innovation Systems, September 24, 2010.

Presented a paper, *The Swedish Paradox – Unexploited Opportunities!* at a seminar on Innovation Driven Growth, organized by Innovationsbron at Almedalen, Visby, July 6 2010.

Participated in a panel discussion organized by Lund University, at Almedalen, Visby, July 6, 2010.

Key-Note speaker and paper, *Design of Innovation Policy: How to Create an Innovative Society in a Globalized World*, at the Fourth National Conference on Science, Technology and

Innovation, organized by the Brazilian Ministry of Science and Technology, Brasilia, May 26-28, 2010.

Speaker and commentator on 16<sup>th</sup> SPRU DPhil Day, Freeman Centre, Brighton, UK, May 28, 2010.

Presentation, *The Role of the State in Stimulating Innovations* at the 2010 Sweden-China Innovation Forum – 60 Years of Diplomatic Relations, Beijing, May 21, 2010.

Paper, *A Conceptual Framework for Analyzing the Relations between Demand and Public Procurement for Innovation and between Knowledge-intensive Entrepreneurship and Innovation* (co-author Zabala, J. M). DIME-AEGIS Conference, Athens, 29-30 April 2010.

Paper, *Knowledge-intensive entrepreneurship, national systems of innovation and European varieties of capitalism: A conceptual framework* (co-author Zabala, J. M). DIME-AEGIS Conference, Athens, 29-30 April 2010.

Presentation, *Design of Innovation Policy through Diagnostic Analysis: Identification of systemic Problems (or Failures)* at Department of Political Science, Gothenburg, April 19, 2010.

Panellist at the seminar Six years of Innovation Research – what have we learnt? Organized at Swedish Agency for Innovation Systems (VINNOVA), Stockholm March 4, 2010.

Presentation of *Innovationer – Vad mer än FoU krävs?*, at a seminar organized by Svenskt Näringsliv (Confederation of Swedish Industries), January 19, 2010.

Presentation as part of the course *The ABC of Innovation Journalism*, Ideon, Lund, January 18, 2010.

Presentation of the evaluation of the Finnish National Innovation System (report under section 6.1. above) at the IVA ('Royal Swedish Academy of Engineering Sciences), Stockholm, and December 15, 2009.

Participation in workshop (with two presentations) of AEGIS FP 7 project (see under Academic Assignments, section 8 below), Athens, December 3-4, 2009.

Presentation, "*The Swedish Paradox*" at the IVA ('Royal Swedish Academy of Engineering Sciences) Annual RTF Conference Stockholm, October 22, 2009.

Presentation (with Zabala, J. M), *Outputs of Innovation Systems: A European Perspective* at Globelics 7<sup>th</sup> International Conference, Dakar Senegal, 6-8 October 2009.

Presentation of "The Swedish Paradox" at the Swedish Parliament (Rifo and SPN), Stockholm, September 23, 2009.

Lecture on *Innovations in the Public Sector* at University of Lillehammer, Lillehammer, Norway, September 23, 2009.

Presentation, "Innovation Systems and Innovation Policy" at the Swedish Competence Research Centre Day, organized by VINNOVA, Lund, September 15, 2009.

Lecture on *Innovation Systems and Innovation Policy* at International Training Programme on Innovation Systems organised by VINNOVA (The Swedish Agency for Innovation Systems) and financed by SIDA (The Swedish International Development Agency), Stockholm, September 8, 2009.

Presentation, *Public Procurement for Innovation (PPI) – a Pilot Study*, at conference, Procurement for Innovation – the art of buying the products of the future already now, organized by AstraZeneca, AB Volvo (trucks), and SAAB AB (aerospace), Almedalen, Visby, Sweden, June 29, 2009.

Presentation, *Design of Innovation Policy through Diagnostic Analysis: Identification of Systemic Problems (or failures)* at conference, Building National Innovation Systems: Linking theory and public policy for innovation, Montreal, May 8-9, 2009.

Speech on “The Swedish National Innovation System” at the International Conference during the Czech Presidency of the Council of the European Union, entitled “Role of Basic Research in the Process of Structuring the European Research Area”, Prague, and April 16–18, 2009.

Lecture on *How to Create a Successful Innovation System* as part of a course on innovations systems organized by Innovasjon Norge and SIVA, Lillehammer Norway, January 27, 2009.

Lecture on *Innovation Processes* at University of Lillehammer, Lillehammer, Norway, January 27, 2009.

Presentation, *National and Sectoral Systems of Innovation*, at the Expert Group Meeting on Innovation Systems in Practice, The Relevance for Industry in Developing Countries, United Nations Industrial Development Organisation (UNIDO), Vienna 24-25 October, 2007.

Gave a talk on the Swedish Innovation System and Innovation Policy to the Minister of Education and Research, Lars Leijonborg, during his visit to Lund University, June 25, 2007, and a similar one to the Board of Lund University on September 21, 2007.

Key-note speech, *The Role of Universities in Innovations Systems*, at UNESCO Forum on Higher Education, Research and Knowledge: Colloquium on Research and Higher Education Policy – Universities as Centres of Research and Knowledge Creation: An Endangered Species?, UNESCO, Paris, December 2006.

Paper, *Comparing NSIs in Asia and Europe: Growth, globalisation, change, and policy*, (co-author Hommen, L.) at Globelics Conference, Trivandrum, India, October 2006.

Paper, *Comparing NSIs in Asia and Europe: Growth, globalisation, change, and policy*, (co-author Hommen, L.) presented at SPRU 40<sup>th</sup> Anniversary Conference, University of Sussex, Brighton, September 2006.

Key-note presentation, *Activities in Innovation Systems and Firms Strategies* at BASF Plant Science research strategy conference in Helsingborg, Sweden, May 2006.

Key-note speech, *Innovation Processes in Ten Small Countries in Asia and Europe* at the 'Contact' Conference with Industry organised by Lund University School of Economics and Management, May 2006.

Presentation, *Globalization and Policy Changes for Small Countries* at The Innovations Imperative – Globalization and National Competitiveness organized by VINNOVA (Swedish Governmental Agency for Innovation Systems), April, 2006.

Key-note presentation, *Firm Innovation Strategies* at Innovation Executive Seminar organised by Deloitte Consulting, Stockholm, March 17, 2006.

Key-note speech, *Industrial Policy from a Systems of Innovation Perspective*, at 2006 EIB Conference on Economics and Finance organised on the theme of An Industrial Policy for Europe, European Investment Bank (EIB), January 19, 2006.

Talk, *The Systemic Nature of Innovation – Causes and Implications*, at conference Research, Innovation and Economic Performance – What do we Know and Where are We Heading? organised by European Commission, Centre for Technology, Innovation and Culture, University of Oslo, and Oxford University Press to mark launch of *Oxford Handbook of Innovation*, Brussels October 8, 2004.

Organised Fourth Workshop of the Project Comparing the National Systems of Innovation in Ten Small Countries in Europe and Asia, in Lund on September 15 – 17, 2004.

Lecture, *Innovation Management and Systems*,” at Tetra Pak Inc. in Lund, on April 28, 2004. Paper, *Systems of Innovation – A Critical Review of the State of the Art*, at the International Institute for Industrial Environmental Economics at Lund University, Lund, December 15, 2003.

Lecture, *Innovation Systems, National, Regional and Sectoral*, at the European Science, Society and Technology (ESST) master's program at Centre for Technology, Innovation and Culture, University of Oslo, December 8, 2003.

Presentation, *Innovation Systems – What Use for the Economy?*, at Lund Foundation for Entrepreneurship, Lund, December 4, 2003.

Presentation, *The State of the Art in Innovation Systems Research* at annual board meeting of Institute of Management of Innovation and Technology (IMIT), Lund, December 1, 2003.

Key-note speech, *The Research Frontier of Innovation System Research*, International Innovation and Knowledge Management Conference at Graduate Institute of Technology and Innovation Management (TIM), National Chengchi University, Taipei, Taiwan, November 29, 2003.

Paper, *Economic Development and the National System of Innovation Approach* (co-authors Johnson, B., and Lundvall, Bengt-Åke.), at First Globelics Conference, Innovations Systems and Development Strategies for the Third Millennium, in Rio de Janeiro, November 3 – 6, 2003

Participation in panel discussion on *Innovation Systems and Clusters – the Paths to Sustainable Growth* at The Quality Fair (Kvalitetsmässan), Gothenburg October 8, 2003.

Presentation, *Activities and Policy in Systems of Innovation* for the personnel of Swedish Agency for Innovation Systems (VINNOVA), Stockholm, October 7, 2003.

Presentation, *Innovation Systems: The State of the Art*, at inaugural seminar of regional project, Innovations in the Borderland, Idéon, Lund, September 23<sup>rd</sup>, 2003.

Participation, press conference on September 22, 2003, where members of Innovation Forum presented LU Innovation. Innovation Forum is a collaboration effort of the main actors in the regional innovation system where Lund University (LU) is located. It includes the heads of Lund University, the regional administration of Region Skåne, the science park Idéon, the Technology Bridging Foundation and business firms. LU Innovation includes activities within research, education and relations between the university and the surrounding society at Lund University.

Keynote speaker and paper, *Functions, Components and Relations in Systems of Innovation and Learning*, at conference, Innoversity – Innovation and Diversity, at European Academy, Berlin, September 18-20, 2003. The conference was organised by FG Techniksoziologie at Technische Universität Berlin.

Lecture, as Holder of the Ruben Rausing Chair in Innovation, *Innovations and Entrepreneurship*, to current and previous board members of the Ruben Rausing Foundation for Research on Innovation and Entrepreneurship, September 16, 2003.

Paper, *The role of Policy in Stimulating Product and Process Innovation* at conference organised by Division of Basic Sciences, Department of Energy (Washington D.C.), in Utrecht, the Netherlands, on September 9-12, 2003.

Member of the grading committee at the PhD D thesis defence by Jan-U. Sandal at Department of Economic History, Lund University, September 6, 2003. Title of the thesis (in translation) *The Hunt for the Entrepreneur. Can Joseph A. Schumpeter's Theory be Used to Identify and Differentiate Entrepreneurs in the 21<sup>st</sup> Century?*

Paper, *Systems of Innovation – A Critical Review of the State of the Art*, at conference organised by the EU-funded TEARI (Towards a European Area of Research and Innovation) project in Roermond, the Netherlands, June 5-8, 2003.

Participation in conference, National Innovation Systems, Innovative Performance and Policy Options, organised by Labour, Organisation and Competence in National Innovation Systems (LocNis) Project', Paris, May 22-23, 2003

Key-note speech, *Innovation Systems and Innovation Policies* at Policy Forum, Economic Growth: the Contribution of Competition, Entrepreneurship and Innovation, organised by the Ministry of Economic Development, Wellington, New Zealand, May 15<sup>th</sup>, 2003.

Presentation of project comparing the national systems of innovation of ten small countries in Europe and Asia at a conference arranged by Institute for Growth Policy Studies (ITPS), Stockholm, May 8, 2003.

Member of grading committee at PhD thesis defence by Christopher Palmberg, Institute of Industrial Economics, Royal Institute of Technology, Stockholm, May 4<sup>th</sup>, 2003. Title of thesis: Turning Opportunities into Innovations.

Presentation, *How does innovation and innovation policy create growth and employment?* At seminar organised by FSF (Forum för småföretagsforskning; Swedish Foundation for Small Business Research) at Swedish Ministry of Industries on April 15, 2003.

Presentation, *Innovations, Growth and Employment Creation*, Stockholm School of Entrepreneurship (SSES) on April 15, 2003.

Presentation, *Innovation Policy for Sweden*, at Royal Swedish Academy of Engineering Sciences on April 15, 2003.

Participation in conference, Improving the effectiveness of direct support measures to stimulate private investment in research, at Directorate K, Research Directorate, European Commission, Brussels on April 11, 2003.

Presentation, *Knowledge and Economic Growth*, conference celebrating 20<sup>th</sup> anniversary of science park Idéon in Lund on March 24, 2003.

Paper, *Systems of Innovation – An Account of the State of the Art* (to be published in Fagerberg, J. (ed.) *Understanding Innovation*, Oxford University Press, Oxford, forthcoming 2003, 30 pp.), organised by ISEG, Universidade Technica de Lisboa and TIC, University of Oslo, Lisboa, November 13-17, 2002.

Participation in Globelics – The First Meeting in the Global Network on Learning, Innovation and Competence Building Systems, Rebuild Conference Centre, Aalborg, Denmark, November 4-5, 2002.

First Keynote speaker, *Setting the Scene; Frameworks on Innovation and Learning to Date*, at Learning Cities and Regions Conference, organised by Organisation for Economic Cooperation and Development (OECD), Victorian State Government, RMIT University and City of Melbourne, Sheraton Towers, Melbourne, Australia, 14–15, October 2002.

Participation in conference, *An Innovation Policy for Sweden*, organised by Swedish Ministries of Industry and Education in Kungsängen, Stockholm, March 26-27, 2002.

Paper, *Can Research about Innovation Systems Provide Policy Relevant Conclusions?* at conference, *Which new Knowledge do we need about Innovation Systems?* Organised by Swedish Agency for Innovation Systems (VINNOVA), Uppsala, October 25, 2001.

Participation, panel discussion and paper, *The Systems of Innovation Approach and Innovation Policy*, at Nelson and Winter Conference, organised by Danish Research Unit for Industrial Dynamics (DRUID), Aalborg, Denmark, June 12-15, 2001.

Presentation at conference, *Sectoral System of Innovation in Telecommunications* (especially mobile telecom and the Internet), organised by the EU-funded project ESSY (Sectoral

Systems in Europe – Innovation, Competitiveness and Growth) and hosted by Science Policy Research Unit (SPRU), Brighton, March 22-24, 2001.

Paper, *Benchmarking in Innovation Systems*, at Conference, Socio-economic Research on Benchmarking of RTD Policies, organised by DG XII, European Commission, Brussels, March 15-16, 2001.

Keynote speaker, *Innovation Policy in the Systems of Innovation Approach*, at conference, Sustainable Local Development and the Role of Incubators in Local Systems of Innovation”, organised by regional government of Pernambuco, Recife, Brasil, November 16 – 17, 2000.

Key-note speaker and paper, *Innovation Policy in the OECD Systems of Innovation*, at International High-Level Seminar on Technological Innovation, co-organised by Ministry of Science and Technology of China (MOST) and United Nations University, Beijing, China, September 5 – 7, 2000.

Key-note speaker and paper, *Public Technology Procurement as Policy Instrument for Sustainable Product Development*, at International Summer Academy of Technology Studies, organised by Interuniversitäres Forschungszentrum für technik, Arbeit und Kultur, Deutschlandsberg, Austria, July 9 – 15, 2000.

Key-note speech, *Knowledge, Learning and Regional Innovation Systems: A Conceptual Framework*, at conference, Knowledge, Complexity and Innovation Systems, organised by Austrian Research Centres and Wirtschaftsuniversität, Vienna, Austria July 1-4, 2000.

Key-note speech, *Forms of Learning and Categories of Innovation in a Regional Context*, at conference, Regional Innovation Systems, organised by network of European Centres in Science and Technology Studies (NECSTS) and Spanish network of Science-Technology-Economy-Society Research (RICTES), San Sebastian, Spain, 30 September – 2 October, 1999.

I am also a frequent lecturer outside the university. Some examples are:

- Högskolan i Lillehammer, Norway, 2012: The Systems of Innovation approach – Progress so far and Challenges for future research
- A Videotaped Lecture Series at Institut Francilien Recherche Innovation Societe (IFRIS), Paris, France, 2012: Lecture 1: The History and Design of Innovation Policy; Lecture 2: Public Procurement for Innovation as Mission-oriented Innovation Policy; Lecture 3: The Knowledge Basis of the Innovation Process
- Gave a key-note speech on Firm Innovation Strategies at an *Innovation Executive Seminar* organised by Deloitte Consulting, Stockholm, March 2006.
- LECTURED ON UNIVERSITY-INDUSTRY RELATIONS OF IMPORTANCE FOR INNOVATION PROCESSES AT Astra-Zeneca Inc., Lund, April 2004
- Gave a talk on Innovation Management and Systems at Tetra Pak Inc., Lund Headquarters, September 2004.

As indicated in section 6.4, I have written some popular scientific articles, lectured extensively on popular scientific topics outside the academic sphere, and been interviewed by various newspapers and journals, for instance:



- Interview, “Sweden best in innovation – or?” by the popular magazine *METROTEKNIK*, 09-15 February, 2011.
- Interview by the innovation Internet newsletter Rapidus, November 9, 2010
- Interview by the daily newspaper Kvällsposten, January 20, 2010
- Interview, Strong Demand for Knowledge about Innovations, by Lund University Magazine (LUM) Nr 10, 2010
- Interview, Innovations Producing Growth, in the Magazine INBLICK, June 2010
- Interview, CIRCLE Attracts Foreign Talent, in the magazine ENTRÉ, 4, 2010

## 8. Research Management and Leadership

I have initiated and led several research groups and research centers that have often had a strong international orientation and involvement. This has involved raising large amounts of external research funding. Some examples are given below.

- At the **Research Policy Institute**, Lund University (until 1987), I initiated and co-ordinated a research programme entitled '*Technology and Development*', which involved about 10 researchers. The focus was upon the role of technology and the role of science and technology policies in developing countries, in the context of their relationships with developed countries.
- Soon after my appointment to the Chair of the **Department of Technology and Social Change** at Linköping University (1986), I launched an interdisciplinary research programme, which in 1994 was renamed the '*Systems of Innovation Research Programme*' (SIRP). SIRP was directed towards problems of the socio-economic roles of science, technology and innovation in industrialised countries. The research programme had three specific *purposes*:
  - 1) Through *comparative empirical analyses* the programme aimed to increase knowledge of innovation processes (in the production of goods as well as services), their determinants and their socio-economic consequences. These analyses often compared countries, regions, firms, sectors, etc.
  - 2) It sought to develop *theories* of the determinants and consequences of innovation processes.
  - 3) Using these empirical and theoretical bases, it aimed to develop insights and specific proposals with regard to *public innovation policies* and *firm innovation strategies* for long-term and sustainable economic growth and increased employment - in the production of goods as well as services.

The programme work was carried out in the form of theory-based empirical sub-projects in the following fields:

- Innovations, Productivity Growth and Employment,
- Firm Strategies for Innovation,
- Financing of Innovations
- Public Innovation Policy.

Among the determinants of innovation processes, public innovation policies, R&D policies and firms' innovation strategies were emphasised. The research also took into account the consequences of innovations, primarily with regard to productivity, employment and organization in firms, countries and regions. We tried to integrate perspectives of economics – including 'untraditional' ones such as institutional and evolutionary theories – with approaches from other social science disciplines, e.g. political science, business administration, economic history, sociology and economic geography, all of which were represented in the research group. Over the years, three members of the programme have acquired the position of 'docent', one has been upgraded to professor, and one has been appointed to a Chair through competition.

- From 1992 to 95, I initiated and co-ordinated the **Systems of Innovation Research Network**, which involved 25 internationally leading researchers from 15 countries. The objective of the network was to provide a conceptual and theoretical basis for the study of systems of innovation that would be both clear and sophisticated, thereby facilitating theory-based empirical studies of specific innovation systems and policy-oriented work. Three conferences were held, resulting in an edited book on Systems of Innovation, which has been much cited (see Edquist (ed.) 1997 in section 6.1).
- In April 1995, I took the initiative to form a European research project, **Innovation Systems and European Integration (ISE)**, involving 35 researchers in nine countries. An application was submitted to the Targeted Socio-Economic Research (TSER) Programme of the European Commission (DGXII) in June 1995. Almost 1 million EURO was granted to the project, formally started in April 1996, which I was subsequently responsible for co-ordinating. Five workshops were held by ISE and the project was completed in April 1998. The results of the project, containing 33 research reports, were published on CD-ROM (Edquist and Texier 1998 – see section 6.1). The project has also resulted in a large number of articles and several books. Among these are ‘The ISE Final Report’, which summarises the scientific findings, and ‘The ISE Policy Statement’, which elicits the public policy and firm strategy implications of the project as a whole.
- I participated in several other EU-funded research projects, where I, with Leif Hommen, co-ordinated the activities of SIRP. They were: **Sectoral systems of Innovation in Europe: Innovation, Competitiveness and Growth (ESSY)**, (co-ordinated by Professor Franco Malerba, Milan), and **Assessing the Impact of Technology and Globalization: The Effects on Growth and Employment (AITEG)**, (co-ordinated by Mario Pianta, Rome and Urbino).
- I co-ordinated a research project entitled **The East Gothia Regional System of Innovation Study between 1998 and 2001**. It investigated the innovation processes in the region of East Gothia (Östergötland) in Sweden and included a survey sent to all manufacturing firms in Östergötland. The survey was focussed upon collaboration patterns between firms and other organisations in processes of product innovation. The project also consisted of studies of patenting activities, the financing of innovations, and a bibliometric study of scientific publishing in the region. Moreover, it investigated diversification processes and the establishment of new firms as processes of structural change in the direction of more high-tech production activities.
- On February 1<sup>st</sup> 2003, I was the first employee at the **Division of Innovation**, the Department of Design Sciences, Lund Institute of Technology, when I took up the Ruben Rausing Chair in Innovation. I designed and started a PhD programme in innovation studies and employed colleagues to help run it. During the spring and summer of that year, two associate professors, 7 PhD students, two post-docs and one secretary were employed. This meant that the Division of Innovation was up and running after six months with 13 employees and an operating PhD programme. In September 2003 the Division of Innovation also started undergraduate teaching as part of the programme of Technology Management, which is run jointly by the Lund Institute of Technology and the Lund University School of Economics and Management. In 2005 the Division of Innovation started to offer several additional

undergraduate courses in the fields of innovation and entrepreneurship to students at the Lund Institute of Technology.

- In the spring 2003, The Swedish Agency for Innovation Systems (VINNOVA) announced a call for the establishment of centres of excellence in innovation studies. Six professors in Lund formed a consortium and submitted a proposal to VINNOVA entitled **The Centre for Innovation, Research and Competence in the Learning Economy (CIRCLE)**. VINNOVA organized an international evaluation of all the nine proposals; CIRCLE was ranked first and was awarded a large and long-term grant. On that basis, CIRCLE was established on July 1<sup>st</sup> 2004, as a multidisciplinary research centre at Lund University, by departments of the Lund Institute of Technology, Faculty of Social Sciences, Lund University School of Economics and Management (all at Lund University) and the Centre for Territorial Development Planning at Blekinge Institute of Technology. I was appointed the first Director of CIRCLE. In June 2004 twelve new positions as associate professor, post-doc (forskarassistent) and PhD student were announced. By January 2005 all these positions had been filled.
- In July 2006, CIRCLE was awarded a so-called **Linnaeus Grant** by the Swedish Research Council. The title of the research programme for which the grant was awarded is: *Innovation, Entrepreneurship and Knowledge Creation: Dynamics in Globalizing Learning Economies*. The aim of the Linnaeus Grant is to enhance support for internationally competitive research of the highest quality. More than 100 research groups in all fields of research were nominated by all Swedish universities to apply for these grants. International reviewers selected 20 environments to receive financial support over the next ten years. Four of them were in the social sciences and the humanities. Of these, CIRCLE was awarded the only Linnaeus grant for Swedish research in the field of innovation, entrepreneurship and growth. The grant amounts to 50 million SEK over a period of ten years, and is accompanied by a matching contribution of ten million SEK from Lund University. Six positions as professor, associate professor, and assistant professor, funded by the Linnaeus grant, were announced in January 2007. By September 2007 they had all been filled. I have coordinated the work on the Linnaeus proposal and the research work at CIRCLE.

The Linnaeus grant allowed CIRCLE to advertise **six (or more) positions** as researchers in “Innovation, Entrepreneurship and Knowledge Creation” in mid-December 2006. Three (or more) were postdoctoral research fellowships (2+2 years) and three (or more) were positions as lecturers. The former were limited term appointments, and the latter tenured positions. There were 60 applicants for the positions, and the process of selecting the eventual holders of these was under way in the first half of 2007.

- In 2006, CIRCLE was expanded through the addition of another research unit, **SPIRE** (Strategic and Policy-oriented Innovation Research & Education). SPIRE was initially established in 2003 as the Division of Innovation (DI) at the Lund Institute of Technology (LTH). DI/SPIRE was founded on the basis of a grant, from the Ruben Rausing Foundation for Innovation and Entrepreneurship, which was used to create the Ruben Rausing Chair in Innovation Studies. SPIRE was integrated into CIRCLE in April 2006.

- In October 2010, CIRCLE invited applications for the positions of Full Professor/Associate Professor and Assistant Professor in Innovation Studies. The final outcome was that CIRCLE appointed nine new position holders. Three were full professors, of which two were new recruitments and one was a promotion, three were associate professors of which one was a new recruitment and three were assistant professors of which one was a new recruitment. CIRCLE now has five full time professors, seven part time full professors, five full time associate professors, seven assistant professors and eight PhD students.
- CIRCLE added eight new projects to its portfolio of external financing in 2011, amounting to approximately 44 million SEK over a three to four-year period. Financers are the Riksbankens Jubileumsfond, the Swedish Research Council (VR), The Rausing Foundation, European Science Foundation (ESF), the Swedish Research Council Formas, the Swedish Energy Agency, Nordic Energy Research and a Swedish-Korean joint project. The projects involve a majority of the CIRCLE staff, i.e. they are highly integrated
- In order to make its research efforts even more relevant for the wider society, CIRCLE formed a Policy Advisory Board for providing input on strategic issues concerning its research and third mission agenda. The Board consists of professionals with competence in various fields relevant to innovation and economic development in international, national and regional contexts. The Board members hold leading positions in organizations like the OECD, VINNOVA, regional and national governments, business firms and technology transfer organizations. It had two meetings in 2011. More information about the CIRCLE Policy Advisory Board can be found at: <http://www.circle.lu.se/about-circle/policy-advisory-board>.
- Charles Edquist has been asked by the European Commission to be the Chairman of a project entitled Mutual Learning Exercise (MLE) on Innovation Procurement, which is participated by 16 member states. This has resulted in a report “Developing strategic frameworks for innovation related public procurement.” in October 2017.

**For more information about CIRCLE please see: <http://www.circle.lu.se>**

Some other Leadership tasks and Academic Assignments are the following:

- Chair of Mutual Learning Exercise (MLE) on Innovation Procurement by the European Commission.
- Member of the Executive Committee of EU-SPRI (2014-2015).
- Member of the Advisory Board of Collaborative Innovation In the Public Sector (CLIPS), Roskilde University, Denmark.
- Member of the Advisory Board of Uppfinnarkollegiet, Sweden.
- Guest professor at Institut Francilien Recherche Innovation Société (IFRIS), Université Paris-Est, Paris, France during January – April 2012.

- Reviewer/Evaluator for the appointment of a Professorship in Service Innovation at Centre for Innovation in Services (CIS), University of Lillehammer, Norway.
- Member of the International Advisory Board on the project studying entrepreneurial universities in the innovation system coordinated from Tampere University, Finland and Beijing Normal University, Beijing, China.
- Member of the Board of the research collaboration between Zhejiang University and Lund University 2012.
- Advisor to the University of Lillehammer, Lillehammer, Norway, in their efforts to develop a PhD programme in Innovation Studies during 2009-2012. The PhD Programme was granted in March 2012.
- Coordinator of CIRCLE's participation in the EU FP7 project, "Advancing knowledge-intensive Entrepreneurship & Innovation for Economic Growth and Social Well-being in Europe" (AEGIS), which was coordinated by Franco Malerba (Milan) and Yannis Caloghirou (Athens).
- Reviewer/Evaluator for the appointment of a Professorship in Service Innovation at Centre for Innovation in Services (CIS), University of Lillehammer, Norway.
- Member of the Scientific Committee for Globelics 2011 - 2012.
- Member of the board of the research collaboration between Zhejiang University and Lund University, 2011-2012.
- Member of Editorial Boards: Science and Public Policy and African Journal of Science, Technology, Innovation and Development (AJSTID).
- Member of the Scientific Forum of "Forum för Småföretagsforskning" (FSF; Swedish Foundation for Small Business Research).
- Member of a High Level Advisory Group (HLAG) for a study on "Analysing and Evaluating the Impact on Innovation of Publicly Funded Research Programmes" carried out for DG Research, European Commission by Intrasoft International S.A., Luxembourg 2009-2011.
- Member of several review panels for various research programmes of the European Commission during period 1995-2007.
- Member of Appointment Committee ('Tjänsteförslagsnämnd'), Faculty of Arts and Sciences, Linköping University 1997-99.
- Member of the Board of the 'Technology and Society' programme of FRN (an interdisciplinary research council) 1997-99
- Evaluated a research programme on innovation studies at The Institute of Business Studies, University of Aalborg, Denmark 1997-99.

- Served as a member of the Board of the Research Programme for Industrial and Innovation policy (KUNI) of the Research Council in Norway 2001-2004.
- Served on a committee (2002) investigating future teaching and research in the fields outside engineering proper at KTH (Royal Institute of Technology), Stockholm, e.g. fields such as innovation, entrepreneurship, economics, psychology, working life, etc.
- Member of the Research Committee of the KK foundation (KK-stiftelsen), Stockholm 2004-2006. (KK stands for Knowledge and Competence).

I have been extensively involved in peer-review processes of various research institutes and research councils abroad and in Sweden for many years. For example, during 2004, I was a member of an international team that evaluated the research at the Copernicus Institute for Sustainable Development and Innovation at the University of Utrecht, the Netherlands. I have been a member of committees for evaluating applications for research funding in two research-funding bodies in Sweden and in The European Union Framework Programs. I have also served on committees for appointments to professorships and other academic positions.

Through the various academic leadership positions described above, I have gained extensive experience in supervising and motivating staff at very different professional levels. This experience includes co-ordination of work across research programmes and other units, stimulating teamwork, resolving conflicts and developing consensus in departments as well as other units and organisations within and outside the university.

## 9. Teaching and Thesis Supervision

My tasks at the University of Lund (1971 – 1986) involved extensive teaching at an undergraduate level. This also meant initiation, planning and development of courses, examinations, evaluations, etc. The forms of teaching were lectures, seminars and supervision (individually and in groups). Examinations were in the form of written and/or, oral tests and written assignments (essays and reports). The subject areas comprised economics, subjects related to socio-economic aspects of research and innovation (including innovation policy and management of innovation), technology and working life issues, Third World issues, dependency and dominance in the global socio-economic system, etc. I have also been a teacher outside the university, e.g. at high schools.

At Linköping University (1986- 2003), I taught undergraduate, MA and PhD courses. Together with colleagues, I initiated, designed and regularly lectured on *Technology Management* and *The Comparative Political Economy of Innovation*. These were undergraduate courses where both Swedish and foreign students were welcome. I was also a guest teacher of various other undergraduate courses at different departments of Linköping University. During 2000, I initiated and contributed to the development of an international MA programme in *Science, Technology and Society*, in which I also taught.

I was also in charge of the innovation economics oriented courses in the Linköping PhD programme. I designed these courses, taught, organised the examinations, and served as a supervisor for PhD students, e.g. I was the first supervisor for Martin Börjesson who was awarded a Licentiate degree in 1992. I was the primary supervisor for the PhD dissertations written by the following (their opponents at their thesis defences are also mentioned):

- Mark Elam (Opponent: William Lazonick, INSEAD), 1993.
- Maureen McKelvey (who received the prestigious ‘Schumpeter Prize’ for her thesis), (Opponent Richard R. Nelson, Columbia University). McKelvey has been appointed a full professor at the Department of Industrial Dynamics, Chalmers University of Technology, 1994.
- Patrik Hedefjäll (Opponent Franco Malerba, Bocconi University), 1997.
- Francois Texier (Opponent: David Mowery, UC Berkeley), 2000.
- Esa Manninen (Opponent: Mario Pianta, Urbino University), 2003.
- Per Högselius (Opponent: Slavo Radosevic, London, 2005).
- Devrim Göktepe (Opponent: David Mowery, Berkeley, 2008).

I was the second supervisor for Marcus Zackrisson who was awarded his PhD in December 2003.

## **10. Interaction with Politicians, Public Policy-Makers and Firm Strategists**

One reason why my publications have had a large impact on other research, as measured by the number of citations (see section 5), is that I have been an early contributor to various special sub-fields emerging within innovation research. Such a head start has made it possible to influence the further development of these subfields. This identification of “needs”, constituted by unsolved problems, has been based upon intuition and a drive to develop theory and empirical analysis into stages where they become relevant and useful for policy action. Two examples are my contributions to the development of the Systems of Innovation (SI) approach and the formulation of “The Swedish Paradox”.

I co-authored, with Bengt-Åke Lundvall, the chapter on the Swedish-Danish national systems of innovation that was included in the Richard Nelson book on national systems of innovations (Nelson 1993) (Lundvall and Nelson published the first two books on systems of innovation). In my own edited volume on systems of innovation (1997), I tried to make the SI approach more “structured” and increase its coherence by sorting out conceptual and other problems associated with it. The intention was also to make it more relevant and useful for innovation policy purposes. The SI approach has diffused extremely rapidly among researchers, but also - and perhaps even more – among policy-makers and politicians. It has been used for policy purposes by many national governments, the OECD, the EU and numerous regional authorities in several countries. I have used the SI approach in a considerable number of contributions to the literature on innovation policy (see other parts of this CV), and in the actual development of policies, e.g. in the evaluation of the Finnish national system of innovation in 2009. With Maureen McKelvey, I gradually formulated “The Swedish Paradox”, beginning in 1991 (Edquist and McKelvey 1992). It points to the fact that there have been very large inputs of resources for R&D and innovation in Sweden, but that the output of innovations has been meagre (although this low “productivity” of the Swedish national system of innovation has improved lately). The Swedish Paradox has been quite an important item on the agenda for the debate on innovation policy in Sweden.

A considerable part of my research is of direct relevance to different socio-economic and political actors. Policy-makers, politicians, think-tanks and consultancy firms have directly



used my contributions. Many publications listed in section 6 have that character and include several evaluations and/or consultancy reports. I have been engaged in consultancy tasks for formulating or evaluating policies on almost all the continents, often in collaboration with international organizations. Between 1998 and 2000, I worked part-time in Paris for the OECD on a project entitled 'Learning Regions', which addressed education (at various levels), R&D and innovation as means to enhance economic performance (economic growth, employment creation, etc) at regional level. Prior to this assignment, I had been engaged as a consultant by several international organisations: (UNIDO (six times), UNCTAD, ILO, UNDP, UNFSTD, UNESCO, IDRC, OECD (six times), and the European Commission (five times), in addition to, for example, Swedish organizations such as the Ministry of Industries, NUTEK, and VINNOVA. I have also worked for firms such as Astra-Zeneca, SAAB Aerospace, and Volvo Trucks.

I should mention the evaluation of a "technology bridging" organization (in Linköping, Sweden, 1999), which deals with seed funding of new technology-based firms that are both entrepreneurial and innovative. I have also evaluated some of the activities within the 'Third Mission' at Lund University. The very comprehensive evaluation of the *Finnish National Innovation System*, commissioned by the Finnish Government (2009), mentioned above, was for the Finnish Ministry of Employment and the Economy and organized by ETLA (The Research Institute of the Finnish Economy) – see [www.evaluation.fi](http://www.evaluation.fi). I was responsible for one of the six parts that focused upon the development of a holistic innovation policy for Finland.

Previously, I am was a Member of The Research Policy Advisory Committee to the Swedish Government (Forskningsberedningen), chaired by Jan Björklund, Minister for Education and Deputy Prime Minister. During 2011 and the first half of 2012, this Committee advised the government on Research and Innovation Policy in the preparation of the Proposal to the Parliament. The Proposal is was due in autumn 2012 and included spending amounting to 35 billion Swedish Crowns, which was about 1 per cent of Swedish GDP. I am also working on three different evaluation projects at Sweco Eurofutures, a large private consultancy firm in Stockholm. During 2015 - 2018 I was a member of the Swedish National Innovation Council (NIC, Nationella innovationsrådet) which is chaired by the Prime Minister, Stefan Löfven. The NIC consists of ten external members and five government ministers.

All these activities directly concerned work related to policies and strategies (see list of publications in section 6.) An example is Edquist 2002 listed in section 6.1, which is an analysis of objectives, rationales, problems and measures related to innovation policy. It was written at the request of the Swedish Ministry of Industry and was published by The Swedish Agency for Innovation Systems (VINNOVA). The work related to policies and strategies included issues of an economic, social and environmental kind. It has concerned productivity growth, inclusiveness, research, employment, education and skill formation, sustainability, innovation, development of emerging economies, global challenges, health, institutional regulation, financing, SMEs, and entrepreneurship.

Hence much of my work has been policy-oriented in that it has analysed the *determinants* ('ten activities', including entrepreneurship and demand-side instruments such as innovation procurement) and *consequences* (growth, employment, environmental and social effects) of innovations, as well as their *measurement* (innovation indicators). Focus has been on the foundations of *innovation policies*, i.e. theory, rationales, objectives, policy instruments and practices. One example is the article published in *Industrial and Corporate Change* (Edquist

2011) entitled “Design of innovation policy through diagnostic analysis: Identification of systemic problems (or failures)”. An earlier version of this article – published as a CIRCLE working paper in 2008 – has been an important influence on the current OECD/DSTI efforts to build an ‘Innovation Policy Platform’ (IPP) to be offered to member governments - a project with innovation system diagnostics at its core.

During 2015 - 2018 I was a member of the Swedish National Innovation Council (NIC, Nationella innovationsrådet) which is chaired by the Prime Minister, Stefan Löfven. The NIC consists of ten external members and five government ministers.

The following examples of interaction with various societal organizations can also be mentioned:

- Charles presented the report on functional public procurement written for the Swedish Competition Agency at a seminar at the Swedish Ministry of Finance on April 5, 2019.
- Charles Edquist gave a seminar at The Directorate for Science, Technology and Innovation (DSTI), OECD in November 2018. The title was “To develop a Holistic Innovation Policy should be self-evident – for all countries and regions!”
- On September 13, 2018, Charles Participated in a workshop organised by CIRCLE, SPRU and CENTRIM in Brighton
- The German Development Institute arranged a workshop in Lund in September 2018 on Sustainable Public Procurement and Charles gave the key-note introductory speech on “Functional procurement enhances innovation for sustainability”.
- Charles made a presentation entitled: “Make Public Procurement Drive Innovation: Specify Functions Instead of Products!” at the TAFTIE Annual Conference, 2018. TAFTIE is The European Network of Innovation Agencies , and the conference was hosted by MITA, The Agency for Science, Innovation and Technology, Vilnius.
- Met with the team of the President of Lithuania. Among the issues discussed were “Holistic innovation policy”, The Swedish National Innovation Council” and “Functional public procurement to enhance innovation”.
- Participated in a reference group meeting on a report on “Innovation Competitions” written by Stefan Fölster at the Swedish competition authority, November 16, 2017 in Stockholm.
- Appointed as a member of the National Innovation Council, chaired by Swedish Prime Minister Stefan Löfven, February 2015, subsequently reappointed in 2017.
- Participated in a meeting with the Council for Strategic Public Procurement at the Skåne Region, October 20, 2016.
- Participated in a meeting at the European Commission in Brussels organised by the Task Force “Unleashing Innovation and Entrepreneurship in Europe” last October 22, 2015.

- Met with top executives at the Ministry of Science and Technology, including NSTDA, TCELS, and the STI Policy Office of Thailand, September 5-7, 2015.
- Published a report for the Swedish Competition Authority with the title “Public Procurement and Innovation” in September 2014.
- Provided advisory services for the Taiwan Institute of Economic Research on “How to build an Asian Innovation Policy Platform”. September 2014.
- Meetings with Parliamentarians Jennie Nilsson and Ingela Nylund Wats on innovation policy in Lund June 2013.
- Participated, during 2013, in the *Ericsson Networked Society Index Delphi Panel*, with the purpose to create a global index based on ICT maturity and its correlation of sustainable urban development.
- Coordinator of the CIRCLE Policy Advisory Board, 2013 and onwards.
- Member of the Executive Committee of the European Forum for Studies of Policies for Research and Innovation from April 2013 to 2016.
- Member of the Advisory Board for Innovation Procurement at the Region Skåne Government, 2011 and onwards.
- Member of the Expert Group for Development of Innovation Indicators at Statistics Sweden, 27 May 2013, Stockholm. Sweden.
- Member of The Research Policy Advisory Board to the Swedish Government (‘Regeringens Forskningsberedning’) 2011 - 2012.
- Paper Presented to the OECD entitled “Public Procurement for Innovation as Mission Oriented Innovation Policy”. 13 February 2012. Paris, France.
- Consultant to the European Union and Region Skåne on the report entitled “Strategiska rekommendationer till Skåne – Blekinge inför etableringen av ESS och MAX IV published on 18 May 2012. Stockholm, Sweden.
- Invited speaker on “Productivity of R&D and challenges of new science, R&D portfolios and breakthrough therapies in areas of unmet medical need, and benefits of public-private partnerships at the Meeting New Science: An Opportunity to Foster Growth and Health of European Citizens organized by the Healthcare Decider’s Forum, May 2012, Medicon Valley, Lund.
- Advisor to the consulting team SWECO Eurofutures AB which prepared the report on “EUREKA Impact Evaluation – Effects of Swedish Participation in EUREKA projects, published on 26 June 2012, Stockholm, Sweden.

- Member of the Advisory Board to Upphandlingsstrategiutskottet, 2012, Region Skåne, Malmö.
- Invited speaker on “Productivity of R&D and challenges of new science, R&D portfolios and breakthrough therapies in areas of unmet medical need, and benefits of public-private partnerships at the Meeting New Science: An Opportunity to Foster Growth and Health of European Citizens organized by the Healthcare Decider’s Forum, May 2012, Medicon Valley, Lund.
- Advisor to the consulting team SWECO Eurofutures AB which prepared the report on “EUREKA Impact Evaluation – Effects of Swedish Participation in EUREKA projects, published on 26 June 2012, Stockholm, Sweden.
- Member of the Advisory Board to Upphandlingsstrategiutskottet (The Innovation Procurement Strategy Council), Region Skåne, Malmö.
- Member of Uppfinnarkollegiet (‘The Inventors’ College’), Stockholm, which involves interactions with representatives from industry and other parts of society.
- Currently advisor to the large consultancy firm Sweco Eurofutures in a project for Region Skåne on the strategic foundations of ESS and MAX IV (very large research infrastructures to be constructed in Lund). I am a consultant, for the same company, in a project evaluation of the major Swedish environmental research organization MISTRA.
- Advisor, in 2009, to the consultancy firm Copenhagen Economics, in their task of preparing a report entitled ‘*Can Public Procurement Spur Innovations in Health Care*’ for the Swedish Agency for Innovation Systems (VINNOVA).
- I wrote a report ‘*Public Procurement for Innovation (PPI) – a Pilot Study*’ in 2009 for AstraZeneca, AB Volvo (trucks), and SAAB AB (aerospace). The report was presented at a seminar organized by the three firms in Almedalen, Visby, Sweden in July, 2009.
- Participated in a High Level Advisory Group (HLAG) Meeting for a study on “Analysing and Evaluating the Impact on Innovation of Publicly Funded Research Programmes” carried out for DG Research, European Commission by Intrasoft International S.A., Luxembourg, Brussels, January 22, 2009.
- During 2002 and part of 2003, I was a member of an expert group working on ‘Improving the effectiveness of direct public support measures to stimulate private investment in research’, DG Research, European Commission, Brussels. This expert group met six times in Brussels and produced the report included in section 6.1.
- Between 2004 and 2006, I was an advisor to The Department of Science Policy Studies, National Institute for Science and Technology Policy and Strategy Studies, Hanoi, Vietnam, regarding a research programme “The Market Institutions for Technology Transfer to Agricultural Small and Medium Enterprises in Vietnam”.

- I am a member of the ‘Scientific Forum’ of ‘Forum för Småföretagsforskning’ (FSF; ‘Swedish Foundation for Small Business Research’. FSF is a network organization for the generation and transfer of knowledge relevant to policy in the field of entrepreneurship and small enterprise development.
- From 2003 to 2007, I was a member of ‘Innovation Forum’, which was a collaboration initiative involving the main actors in the regional innovation system where Lund University is located. It included the heads of Lund University, the regional administration of ‘Region Skåne’, the science park ‘Idéon’, the Innovation Bridge South, and business firms.
- From 2003 to 2006, I served on the jury for an innovation prize awarded by the Development Company of Lund University (LUAB) and Öhrlings PricewaterhouseCoopers. I also served on the jury for another innovation prize, Venture Cup Syd, between 2003 and January 2006.
- Between 2004 and September 2005, I was a member of the Board of the Investment Committee of The Development Company of Lund University (LUAB). Its role was to evaluate proposals to LUAB from new innovative firms that needed seed capital funding.
- From September 2006 to June 2007 I was a member of a reference group for the project “Innovativa små och medelstora företag – Sveriges framtid” (“Innovative small and medium-sized enterprises – the future of Sweden” VINNOVA (Swedish Governmental Agency for Innovation Systems), Stockholm.
- In 2006 – 2007, I participated as an expert in the “OECD Thematic Review of Tertiary Education in Poland”, where my specific responsibility was innovation processes related to tertiary education.
- In 2006 - 2007, I was a member of an expert group that carried out an Impact Assessment of The Innovative Medicines Initiative (IMI), which is one of the Joint Technology Initiatives planned by DG Research of the European Commission.
- Member of Uppfinnarkollegiet (‘The Inventor’s College’) in Stockholm, since 2003, involving close interactions with representatives from industry and other parts of society.
- Between 1996 and 1998 I was a member of a committee responsible for reorganising the various units of Linköping University, Sweden that interact directly with the surrounding society (chaired by Vice-chancellor Anders Flodström).