

## **Annual report from DRUID (Danish Research Unit for Industrial Dynamics) September 1996-December 1997**

### ***Preface***

The report covers activities for the period September 1 1996 – January 1 1998 and it follows the instruction of the Board in presenting outcomes in terms of publications, Ph.D.-activities and communication and interaction with users. It is introduced by a summary and a self-evaluation. In four separate appendices specific activities are documented.

Appendix 1: The DRUID Working Paper Series

Appendix 2: The DRUID-Conferences

Appendix 3: The DRUID Seminars

Appendix 4: Visiting Scholars

The DRUID Working Papers produced by Danish DRUID-members thus appear both in Appendix 1 and in the Report under the heading Working Papers.

### ***Summary and self-evaluation***

1. DRUID-activities have been designed with the aim to support senior scholars and Ph.D.-students in their research through the building of infrastructure and through specific support to activities where it is difficult to find alternative funding. This is reflected in the allocation of finance. Little resources have been used to finance salary and a lot has been used to build infrastructure (the Summer and Winter conferences, the data bases, the working paper series, the guest professorships, information infrastructure and administrative co-ordination – some of these are documented through appendices to the main report). New directions of research have been stimulated for instance through introducing new themes at the Summer Conferences but no attempts have been made to direct individuals into projects that they do not want to pursue. So far, this strategy has proved successful. The positive interest for contributing to the DRUID-research programme remains strong, the activity level of the researchers involved is high, and the output in terms of publications, Ph.D.-activities and interaction with users is satisfactory.

2. The outputs of the DRUID-network in terms of publications, Ph.D.-activities and user interaction reflect the current specialisation of the two major research units forming the network. The CBS-unit is more oriented toward theoretical work relating to the theory of the firm and aiming directly at publication in refereed journals while the AAU-unit is more oriented toward analyzing innovation processes at higher levels of aggregation and has a stronger element of applied and empirical research. The user-interface of CBS-research is primarily with the business community while the AAU-interface is with policy makers in the field of industrial and innovation policy. Both units give high priority to the recruitment and supervision of Ph.D.-students while the AAU-unit is more involved in the international organisation of Ph.D.-training (ETIC). It is a long-term objective for the network to exploit the complementary character of the capabilities and at certain points to stimulate convergence. The two conferences organised every year and the involvement of scholars from the different units in common activities have been helpful in this respect.

3. In the 16 months covered by this report DRUID-scholars (these only include Danish scholars and not guest professors etc.) have published around 100 publications in connection with the DRUID-research themes (see **Section I**). Of these around 40 are articles in refereed journals and books and 3 are refereed books. At this stage of the DRUID-project I find this volume and pattern of publication satisfactory. Several empirical projects in the DRUID-programme (some DISKO-related projects and 2 projects related to TSER-research) are to be finalised in 1998 and will hereafter become more productive in terms of articles for refereed journals and books. The Summer conference 1998 has already established deals with journals to publish contributions and a similar procedure will be followed up for the 1999 conference.

4. In the period covered by this report one of those Ph.D.-students who take part in the DRUID-network finalised his Ph.D.-studies by successfully defending his thesis

(Allan Næs Gjerding 11/10 1996). At present there are 15 Ph.D.-students connected to the network. Of these 6 are expected to finish their theses in 1998 (see **Section II**). In the beginning of the next year we will take on two new Ph.D.-students to be financed by DRUID.

The AAU-unit (Andersen, Dalum, Johnson and Lundvall) has for a 3 year period been part of a European consortium ETIC regularly organising Ph.D.-courses in the field of 'economics of technical and institutional change' and, individually, DRUID-seniors have contributed to Ph.D. training in other contexts. Another important element in the DRUID Ph.D. training is the active participation of students in the Annual DRUID Winter Conference where Ph.D.-students are expected to present work in progress and in the Annual DRUID Summer Conference where they are expected to act as Discussants on papers by international scholars (See Appendix 2). The Ph.D.-students related to DRUID have been active in all these respects and they have also participated in other Ph.D. training activities when their field of specialisation could not be covered by DRUID. Normally they will spend some of their time abroad in order to broaden their scientific skills.

I find the Ph.D.-activities, and especially the quality of the Ph.D.-students, most satisfactory. Most of the Ph.D.-students are hard-working, mature and act convincingly, and with little effort, in international contexts. Some of the best of them are women. In the future a special effort should be made to recruit some of the Ph.D.s, male as well as female, for post-doc research or as regular staff. Here the current budget envelope of DRUID is such that resources from other sources will have to be mobilised if this intention is to be realised.

5. There are three types of user-oriented activities going on within DRUID (see **Section III**). The first set relates to international organisations, the second to national ones and the third to local/regional.

At the international level there has been a direct interaction between DRUID and respectively EU DG XII, OECD-DSTI and UNCTAD-FDI/ST around different policy issues related to innovation systems and innovation policy (Lundvall and J. L. Christensen have been contact persons but a number of DRUIDs have been involved). Participation in 2 TSER-projects involves an indirect interaction with EU DG XII (Dalum, Villumsen and Laursen and respectively Gregersen, Johnson and J.L: Christensen). Peter Maskell and DRUID/CBS has accepted to take on the role as TSER-co-ordinator for a TSER-project application involving a strong research teams on Networking and Globalisation.

At the national level the different projects connected to DISKO involve an experimental form of interaction with the Ministry of Business. This interaction involves among other elements a construction of Ph.D.-grants financed by the ministry and combined with a location of Ph.D. students at the Ministry for part of

their study programme. In connection with the finish of the DISKO-project there will be a series of user and policy oriented activities in the coming year.

At the local level in Northern Jutland several DRUIDs have played a key role in connecting the University to the local industrial community especially in the field of mobile communication (Dalum and Gelsing). Peter Maskell have played a similar role in connection with the regional authorities of Copenhagen and Poul Rind Christensen in Southern Jutland. These activities will be pursued also in the future.

Given the general objectives of DRUID, I find the interaction with users quite satisfactory. One problem is that the demand (and this is true for all the three levels mentioned above) is growing more rapidly than the supply capacity and it is obvious that the organisational set-up of DRUID is not (and should not be) geared to take on specific and short term tasks as a response to user demands. It should therefore be considered to establish a separate organisation explicitly aiming at channelling such demands to the academic community.

6. There have been few problems with building and supporting the infrastructure as it was outlined in some detail in the last annual report. We regard it as a success that our international visibility is high (the interest to access our home-page and our working papers has been growing strongly and we get more and more contributions from distinguished international scholars to our working paper series). We also regard the construction of completely new data sets regarding firm behaviour and knowledge flows in the whole economy as a major step forward. One remaining problem which is partially outside our own competence sphere is the difficulty to host international scholars for medium term to longer periods. The complexity of tax rules and especially the lack of flexible housing possibilities makes it extremely labour intensive to organise the stay of a guest professor. Here initiatives that could ease the situation by the National Research Councils and by our host institutions would be most welcome.

Aalborg January 15, 1998

Bengt-Åke Lundvall

## **SECTION I**

### **1. Scientific publications**

("(p)" indicates Ph.D.-student)

#### ***a. Articles in refereed journals***

ANDERSEN, E.S., "Review of A. Lundgren: *Technological Innovation and Network Evolution*", *Research Policy*, Vol. 26, 1997, pp. 257-258.

CHRISTENSEN, J. F. (1996): Innovative Assets and Inter-Asset Linkages - A Resource-Based Approach to Innovation. *Economics of Innovation and New Technology*, Vol. 4: 193-209

ERNST, Dieter and Paolo Guerrieri. International Production Networks and Changing Trade Patterns in East Asia. The Case of the Electronics Industry. To appear in: *Oxford Development Studies*, April 1998

ERNST, Dieter. From Catching-Up to the Learning Economy: Technology Management in the Korean Electronics Industry, *Asia-Pacific Journal of Management*

FOSS, Nicolai J. On the Rationales of the Corporate Headquarters. *Industrial and Corporate Change* 6: 313-339.

FOSS, Nicolai J. Ethics, Discovery, and Strategy. *Journal of Business Ethics* 16: 1131-1142.

FOSS, Nicolai J. Evolutionary and Contractual Theories of the Firm: How Do They Relate? *Rivista Internazionale di Scienze Sociali*

FOSS, Nicolai J. The Classical Theory of Production and the Capabilities Approach. *Journal of Economic Studies* 24: 307-323.

FOSS, Nicolai J. Austrian Insights and the Theory of the Firm. *Advances in Austrian Economics* 4: 175-198.

FOSS, Nicolai J. Economics, Institutions, and Ludwig von Mises. *Cultural Dynamics*, vol. 9, no. 1, 77-96.

GREGERSEN, Birgitte & JOHNSON, Björn. Learning Economies, Innovation Systems and European Integration. *Regional Studies*, vol. 31.5, 1997, 479-490 p.

LAURSEN, Keld. (p) Horizontal Diversification in the Danish National System of Innovation: The Case of Pharmaceuticals. *Research Policy*, vol. 25, pp. 1121-1137.

LUNDEVALL, Bengt-Åke. L'economia dell'apprendimento. Una sfida alla teoria e alla politica economica. *Economia e Politica Industriale*, vol. 23, no.89, 1996, 119-145 p.

LUNDEVALL, Bengt-Åke. Information Technology in the Learning Economy. *Communications & strategies*, no. 28, 1997, 117-192 p.

MASKELL, Peter. The Economic Importance of geographical location. Some Observations in relation to Arne Isaksens thesis in the growth of new industrial spaces and specialised areas of production. *Norwegian Journal of Geography* 50, 2:125-129, 1996

MASKELL, Peter. Towards an explanation of regional specialization and industry agglomeration.(co-author: A. Malmberg) *European Planning Studies*, 5, 1:25-41, 1997

MASKELL, Peter. Ressourcebaseret regionalteori. Om kompetence og læring som basis for lokal og regional udvikling. *Byplan* 4:154-160, 1997

MUNK-RIIS, Annemarie. (p) Towards a New Rationale for Universal Service. (co-author: Francois Bar). *Communications and Strategies* 26 (2<sup>nd</sup> quarter): p.186-206, 1997

NYMARK, Søren. (p) Ledelsesudvikling i praksis: Fokus på åremålsansættelse i den offentlige sektor. *Nordisk Administrativt Tidsskrift*, vol. 78, nr. 3, pp. 250-262.

### ***b. Articles in other journals***

ERNST, D. International Production Networks and Local Capabilities. How Globalization Affects Industrial Upgrading Strategies. A research note. *SSRC Newsletter, the Social Science Research Council (SSRC)*, New York, September

GELSING, Lars. Comments on results from evaluation studies on the USnet program, To be printed in *Firm Connections*, vol. 5, no. 6 Nov./Dec, 1997.

MASKELL, Peter. L'apprendimento nell'economia-villaggio della Danimarca. *Sviluppo Locale* IV, 4:54-79.

LORENZEN, M. (p) Knowledge-guided action: Stability of knowledge and patterns of co-operation amongst furniture producers in the district of Salling, Denmark. *Academy of Entrepreneurship Journal* 3/1:57-81

*c. Articles in refereed books*

ANDERSEN, E.S. Introduction to Innovation Systems: Evolutionary Perspectives. In Edquist, C. (ed.) *Systems of Innovation: Technologies, Institutions and Organisations*. Pinter, London, 1997, pp. 174-179.

ANDERSEN, E.S. (1997) An Evolutionary Approach to Structural Economic Dynamics. In Conte, R., Hegselmann, R., and Terna, P. (eds.):, *Simulating Social Phenomena, Lecture Notes in Economics and Mathematical Systems*. Vol. 456, Springer, Berlin, pp. 287-293.

ANDERSEN, E.S. Neo- and Post-Schumpeterian Contributions to Evolutionary Economics. In Reijnders, J. (ed.), *Economics and Evolution, Belgian-Dutch Association for Post-Keynesian Studies*, Elgar, Cheltenham, 1997, pp. 109-135.

ANDERSEN, E. S. & LUNDVALL, B.-Å. National Innovation Systems and the Dynamics of the Division of Labour. In EDQUIST, Charles (red.) *Systems of Innovation; Technologies Institutions and Organizations*. London, Pinter –Cassel Imprint, 1997, 242-265 p.

CHRISTENSEN, J. F. and Foss, N. J. (1997) Dynamic Corporate Coherence and Competence-based Competition: Theoretical Foundations and Strategic Implications. In: A. Heene and R. Sanchez (Eds.): *Competence-Based Strategic Management*. New York: Jon Wiley & Sons.

ERNST, D. Partners in the China Circle? The Asian Production Networks of Japanese Electronics Firms, in: Barry Naughton (ed.): *The China Circle*, The Brookings Institution Press, Washington, D.C., 1997

ERNST, D. Globalization, Convergence and Diversity: The Asian Production Networks of Japanese Electronics Firms, forthcoming in Borrus, M., D. Ernst and S. Haggard (eds.), *Rivalry or Riches: International Production Networks in Asia*, Cornell University Press

ERNST, D. Externationalization and inter-organizational networks. How globalization transforms the Japanese model, forthcoming in: Daniel Dirks (ed.): *Between External Shocks and Internal Evolution: Towards a New Phase in Japanese Management Practices*, Springer Verlag, Berlin, London

ERNST, Dieter and Bengt-Åke Lundvall. Information Technology in The Learning Economy - Challenges for Developing Countries., in: Erich Reinert (ed.): *Evolutionary Economics and Spatial Income Inequality* , Cambridge University Press

ERNST, D., L. Mytelka and T. Ganiatsos. Technological Capabilities in the Context of Export-Led Growth - A Conceptual Framework", chapter I in: Ernst, D. ; T.

Ganiatsos and L. Mytelka (eds.): *Technological Capabilities and Export Success in Asia*, 1997 Routledge Press, London etc.

ERNST, Dieter and Lynn Mytelka. Catching up, keeping up and getting ahead: the Korean model under pressure, chapter III in Ernst, D. ; T. Ganiatsos and L. Mytelka (eds.): *Technological Capabilities and Export Success in Asia*, Routledge Press, London etc.

ERNST, D. The Korean Model in the Electronics Industry - The Dynamics of Change, to appear in: Jens Eric Torp and G. Jakobsen, *Understanding Business Development in Developing Countries*. Submitted to Sage, London

FOSS, Nicolai J. Resources and Strategy: A Brief Overview of Themes and Contributions. I: FOSS, Nicolai J. *Resources, Firms, and Strategies: A Reader in the Resource-Based Approach*. Oxford: Oxford University Press.

FOSS, Nicolai J. Resources and Strategy: Problems, Open Issues, and Ways Ahead I: FOSS, Nicolai J. *Resources, Firms, and Strategies: A Reader in the Resource-Based Approach*. Oxford: Oxford University Press.

FOSS, Nicolai J. On Austrian and Neo-Institutionalist Economics. I: Willem KEIZER, Rudy VAN ZIJP and Bert TIEBEN. *Austrian Economics in Debate*. London: Routledge.

FOSS, Nicolai J. Evolutionary Economics and the Theory of the Firm. I: Jan REIJNDERS. *Economics and Evolution*. Aldershot: Elgar.

JOHNSON, Björn & EDQUIST, Charles. Institutions and Organisations in Systems of Innovation, in Edquist (ed.): *Systems of Innovation- Technologies, Institutions and Organisations*. Pinter, 1997, 41-63 p.

JOHNSON, Björn. Systems of Innovation: Overview and Basic Concepts, in Edquist (ed.): *Systems of Innovation- Technologies, Institutions and Organisations*, Pinter, 1997.

LUNDEVALL, Bengt-Åke & Foray, Dominique. Une introduction à l'économie fondée sur la connaissance, in Guilhon, Bernhard (red.) *Economie de la Connaissance et des Organisations*. Paris, l'Harmattan, 1997, 16-38 p.

LUNDEVALL, B.-Å. Emploi et Chomage dans une 'Economie qui Apprend', in Meulders et al., *Pourquoi la Science?* Champ Vallon, 1997, 147-163 p.

MASKELL, Peter. Apprendimento localizzato e competitivita' industriale (Co-author: A. Malmberg) p. 112-133, in Alberto Bramanti & Mario A. Maggiono (eds.) *La dinamica dei Sistemi produttivi Territoriali: teorie, tecniche, politiche*. Pages Angeli, Milano

MASKELL, Peter. Localised low-tech learning in the Furniture Industry. In Eskelinen, H. (ed.) *Regional Specialisation and Local Environment - Learning and Competitiveness*. NordREFO Report 1979:3, Stockholm: NordREFO pp. 145-170.

MUNK-RIIS, Annemarie. (p) The Information Welfare Society: An Assessment of Danish Governmental Initiatives Preparing for the Information Age. National Information Infrastructure Initiatives. In (B. Kahin and E. Wilson (ed.): *Policy and Visions*. Cambridge, Mass., MIT Press, p. 424-456.

#### *d. Articles in other books*

CHRISTENSEN, Poul Rind. Generic Routes to Subcontractors Internationalisation. co-author: Ph. H. Andersen, The Århus Business School. In: I. Björkman, M. Forsgren (eds.): *The Nature of the International Firm*. pp. 231-257. Copenhagen Business School Press. Copenhagen, 1997

FOSS, Nicolai. To Økonomiske Strategiteorier: Om Porter og Ressourceperspektivets Relationer og Praktiske Implikationer. I: Nicolai FOSS og Laurids HEDAA: Teori for Praksis. København: Handelshøjskolens Forlag.

FOSS, Nicolai J. (med Bo ERIKSEN). Styring af strategiske optioner: et redskab til dynamisk kompetenceudvikling. I: Nicolai FOSS og Laurids HEDAA: Teori for Praksis. København: Handelshøjskolens Forlag.

JOHNSON, Björn & GREGERSEN, Birgitte. The Role and the Potential Diversity in the European Integration Process. Paper presented at the international conference on “*Technology Policy and Less Developed Research and Development Systems in Europe*”, arranged by UNU-INTECH in Seville, 17-18 October, 1997, 18 p.

LAURSEN, Keld, (p) , DALUM, Bent, & VILLUMSEN, Gert. Is here such a thing as a ‘good’ export specialisation pattern? - A European perspective. Paper given at *EU/TSER-TEIS seminar* in Naples November 20-21, 1997, 25 p.

LORENZEN, M. (p) *Specialisation, low-tech competitiveness and localised learning in the European furniture industry*, in Lorenzen, M. (ed.) (forthcoming 1998)

LORENZEN, M. (p) *Communicating and learning a basis for trust. Danish furniture producers in the Salling district*, in Lorenzen (ed.) (forthcoming 1998)

LUNDEVALL, Bengt-Åke. “Reflections on how to analyse national systems of innovation” in: KUUSI, Oslo (red.). *Innovation systems and competitiveness*, Helsinki, Taloustieto Oy, 1996, 17-25 p.

NYMARK, Søren. (p) Læring, forandring og organisation – et kritisk perspektiv, i Christensen A. (red.), *Den lærende organisations begreber og praksis. Læring-refleksion-ændring*, Aalborg: Aalborg Universitetsforlag, 1997, pp. 59-79.

#### **e. Refereed books**

ERNST, D., T. Caniatsos and L. Mytelka (eds.) *Technological Capabilities and Export Success in Asia*. Routledge Press, London, etc. 1997

FOSS, Nicolai J. *Resources, Firms, and Strategies: A Reader in the Resource-Based Approach*. Oxford: Oxford University Press.

MASKELL, Peter. *Competitiveness, Localised Learning and Regional Development - Specialisation and Prosperity in Small Open Economies* (co-authors: H. Eskelinen, I. Hannibalsson, A. Malberg and E. Vatne), London: Routledge. 1997 275 p.

#### **f. Other books, including research reports**

FOSS, Nicolai & Bo ERIKSEN. *Dynamisk kompetenceudvikling -- en ny ledelsesstrategi*. København: Handelshøjskolens Forlag.

FOSS, Nicolai & Laurids HEDAA. *Teori for praksis II -- Strategi og organisation*. København: Handelshøjskolens Forlag.

GJERDING, A. N. (red); KRISTENSEN (p), F. S; LUNDVALL, B.-Å; NIELSEN, P; JØRGENSEN, (p) K. M; LUND, R; MADSEN, P.T., NYMARK, S. (p), *Den fleksible Virksomhed – Omstillingspres og fornyelse i dansk erhvervsliv*. København, Erhvervsudviklingsrådet, 1997, 179 p.

GJERDING, A.N. *Technical innovation and organisational change. The innovation design dilemma revisited*. Aalborg: Aalborg University Press, 1996, 25 p.

GREGERSEN, Birgitte & JOHNSON, Björn. *European Integration and National systems of Innovation*. Report within the ISE research project, European Commission, 1997, 76 p.

GREGERSEN, Birgitte & JOHNSON, Björn. *How do innovations affect economic growth? - Some different approaches in economics. Report within the ISE research project, European Commission, 1997, 25 p.*

LORENZEN, M. (p) (ed.): *Specialisation, low-tech competitiveness and localised learning. Six studies on the European furniture industry*. CBS Press. Copenhagen (forthcoming 1998)

MASKELL, Peter. *Erhvervslokalisering og vækst* (Co-authors: T.P. Jensen, S. Arnberg, M.B. Hansen og T. Ranis) AKF-rapport, København: AKF, 1997, 112 p.

MUNK-RIIS, Annemarie. (p) *Driving Technology: Do We Need Government Support for High Technology Sectors? The Case of Supercomputers*. Copenhagen Business School Press

**g. Working papers**

DALUM, Bent; LAURSEN, Keld (p) & VILLUMSEN, Gert. *The Long Term Development of OECD Export Specialisation Patterns: De-specialisation and "Stickiness"*. DRUID, 1996, 29 p. 96/14.

DALUM, Bent, LAURSEN, Keld (p) & VERSPAGEN, Bart. *Does specialisation matter for growth?* MERIT RESEARCH MEMORANDA, 1997, 18 p. 007.

DREJER, Ina, (p), KRISTENSEN, Frank Skov (p) & LAURSEN, Keld. (p) *Studies of Clusters as a basis for industrial and technological policy in the Danish economy*. DRUID, 1997, 42 p. 97/14.

DREJER, Ina (p) & LAURSEN, Keld (p) *Do inter-sectoral linkages matter for international export Specialisation?*. DRUID, 1997, 28p. 97/15.

FOSS, Nicolai J. *The Resource-Based Perspective: an Assessment and Diagnosis of Problems* (Working Paper 97-1, Danish Research Unit for Industrial Dynamics).

FOSS, Nicolai J. & Richard N. Langlois. *Capabilities and Governance: the Rebirth of Production in the Theory of Economic Organization* (Working Paper 97-1, Danish Research Unit for Industrial Dynamics).

FOSS, Nicolai J. *The New Growth Theory: Some Intellectual Growth Accounting*. (Working Paper 97-2, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. *On the Relations Between Evolutionary and Contractual Theories of the Firm*. (Working Paper 97-3, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. *Austrian Insights and the Theory of the Firm*. (Working Paper 97-4, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. *The Boundary School*. (Working Paper 97-5, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. *Understanding Business Systems* (Working Paper 97-6, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. og Tom ELFRING. Renewal of Capabilities through Internal Corporate Venturing and spin-offs: Perspectives from Organizational Economics (Working Paper 97-7, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. On the Foundations of the Strategic Theory of the Firm (Working Paper 97-8, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. An Interview With Brian J Loasby (Working Paper 97-9, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. Real Options and the Theory of the Firm. (Working Paper 97-, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. Equilibrium versus Evolution in the Resource-Based Perspective: the Conflicting Legacies of Demsetz and Penrose. (Working Paper 97-10, Danish Research Unit for Industrial Dynamics).

FOSS, Nicolai J. Incomplete Contracts and Economic Organization: Brian Loasby and the Theory of the Firm. (Working Paper 97-11, Danish Research Unit for Industrial Dynamics).

FOSS, Nicolai J. Edith Penrose and the Penrosians -- or, why there is still so much to learn from *The Theory of the Growth of the Firm*. (Working Paper 97-, Department of Industrial Economics and Strategy)

FOSS, Nicolai J. (with Mikael IVERSEN. The Corporate Headquarters as Sponsors of Synergies: An Exploratory Discussion. (Working Paper 97-, Department of Industrial Economics and Strategy).

FOSS, Nicolai J. (with Mats Forsgren and Torben Pedersen). Accounting for the Strengths of MNC Subsidiaries: the Case of Foreign-Owned Firms in Denmark (Working Paper 97-12, Department of International Economics and Management)

GJERDING, A.N. *Organisational innovation in the Danish private business sector*, DRUID, 1996, 42 p. 96/16.

GJERDING, A.N & LUND, R. *The flexible company. Innovation, work organisation and human resource management*, DRUID, 1996, 58 p. 96/17.

KRISTENSEN, Frank Skov. (p) *A study of four organisations in different competitive environments*. DRUID, 1997, 29 p. 97/13.

KRISTENSEN, F.S. (p) & LUNDEVALL, B.-Å. *Organisational change, innovation and human resource development as a response to increased competition*. DRUID, 1997, 28 p. 97/16.

LUNDEVALL, Bengt-Åke & ERNST, Dieter. *Information Technology in the Learning Economy - Challenges for Developing Countries*. DRUID, 1997, 50 p. 97/12.

MAHNKE, Volker. (p) *The nature of Knowledge - Intensive Business*. WP 3/97, St. Gallen

MAHNKE, Volker. (p) *The Field of Strategic Management in the Search for Inspiration*. WP 10/97, St. Gallen

MAHNKE, Volker (p) & Aadne, John Harald: *Speed and Potential Breakdown in the Process of Strategic Renewal*. IVS, WP 97-10

MAHNKE, Volker. (p) *Can contractual theories of the firm explain the existence of knowledge-intensive firms?*, WP 97-11  
(Department of Industrial Economics and Strategy)

MASKELL, Peter. *Subcontractors and Subcontracting Relationships in Danish Manufacturing Industry 1995 - Some preliminary observations*. Statistics Denmark (Danmarks Statistik) Report to EUROSTAT.

VILLUMSEN, Gert; LAURSEN, Keld (p) & DALUM, Bent. *The Long Term Development of OECD Export Specialisation Patterns: De-specialisation and "Stickiness"*. DRUID, 1996, 29 p. 96/14.

#### ***h. DRUID Working Papers by international scholars***

97-2 Langlois, Richard N. & Foss, Nicolai J.: *Capabilities and Governance: the Rebirth of Production in the Theory of Economic Organization*. (ISBN 87-7873-020-1)

97-4 Richardson, George B.: *Economic Analysis, Public Policy and the Software Industry*. (ISBN 87-7873-023-6)

97-5 Borrus, Michael & Zysman, John: *You Don't Have to Be A Giant: How The Changing Terms of Competition in Global Markets are Creating New Possibilities For Danish Companies*. (ISBN 87-7873-024-4)

97-6 Teubal, Morris.: *Restructuring and Embeddedness of Business Enterprises- Towards an Innovation System Perspective on Diffusion Policy*. (ISBN 87-7873-025-2)

- 97-7 Ernst, Dieter & Guerrieri, Paolo: *International Production Networks and Changing Trade Patterns in East Asia: The case of the Electronics Industry*. (ISBN 87-7873-026-0)
- 97-8 Lazaric, Nathalie & Marengo, Luigi: *Towards a Characterisation of Assets and Knowledge Created in Technological Agreements: Some evidence from the automobile-robotics sector*. (ISBN 87-7873-027-9)

***i. Contributions to conferences***

ANDERSEN, Esben S. (1997), Multisectoral Growth and National Innovation System, Paper presented at the workshop "*Innovation, Policy and Society*" arranged by the Nordic Journal of Political Economy, Oslo, 5-6 December 1997. Submitted to Nordic Journal of Political Economy.

CHRISTENSEN, Jesper. A two-sided view on financing innovative, small firms, Paper for *The Second International Stockholm Seminar on Risk Behaviour and Risk Management*, Stockholm 9-12 June 1997, 15 p.

DALUM, Bent, LAURSEN, Keld (p) & VILLUMSEN, Gert. Is here such a thing as a 'good' export specialisation pattern? - A European perspective. Paper given at *EU/TSER-TEIS seminar* in Naples November 20-21, 1997, 25 p.

FOSS, Nicolai J. Incomplete Contracts and Economic Organization: Brian Loasby and the Theory of the Firm. I: Proceedings from "Conference in Honour of Brian Loasby", University of Stirling, August 27-29.

FOSS, Nicolai J. Toward a Strategic Theory of the Firm: Governance, Capabilities, or Both? (Rotterdam School of Management, Erasmus Institute for Advanced Studies in Management, Management Report 16-13) ( pp 27).

GELSING, Lars & NIELSEN, Kent. Promoting Inter-Firm Networks in industrial policy – Danish Evidence. *DRUID winterconference, 8th.-10th. January 1997*.

GREGERSEN, Birgitte & JOHNSON, Björn. The Role and the Potential Diversity in the European Integration Process. Paper presented at the international conference on "*Technology Policy and Less Developed Research and Development Systems in Europe*", arranged by UNU-INTECH in Seville, 17-18 October, 1997, 18 p.

JØRGENSEN, Kenneth M. (p) *Information Technology and Organisational Learning*, 24 p.. Konference i Budapest, Organizational Responses to Radical Environmental Changes: 13<sup>th</sup> EGOS Colloquium.

LUND, Reinhard. Experiences Regarding Efforts Towards Integrating Different Functional Sections within Firms., in: *1<sup>st</sup>. International Conference on Technology, Policy and Innovation*. Macau, 1997, 8 p.

PRÆST, Mette. (p) The dynamics of capability groups and firm behavior: Short and long run reaction patterns, *R&D Management in the 21st Century: Theory and Practice*, conference held in Manchester, UK, July 1997, 39 p.

PRÆST, Mette. (p) A dynamic approach to the accumulation of technological competencies, *7th International Forum on Technology Management* conference held in Kyoto, Japan, November 1997, 231-239 p.

## Section II: Ph.D-activities

### II.A: Ph.D.-Students

There are 15 students connected to the DRUID project. All of them have participated in activities organised by DRUID and all (with the exception of Annemarie Munk-Riis) have DRUID-seniors as supervisors. Their stage of study and other relevant information has been gathered in the table below.

Table: *Ph.D-students connected to DRUID (stage of completion, theme of dissertation, participation in training, affiliation, including international affiliation and source of finance).*

	Period	Dissertation theme	Participation in training	Affiliation – Stay abroad	Finance
Andersen, Maj M.	January 95 - July 97	Interorganisational learning in the green transformation.	DRUID-conference W97, S97 Participated in 1 Ph.D.course	ILT - CBS	Ph.D.-stip. FFL
Bonilla, Segura Olman	June 96 – May 1999	Sustainability and Competitive-ness of Forestry in Central America	DRUID-conference W97	IES – AAU Universidad Nacional Costa Rica	Financed by special grant
Drejer, Ina	February 96 – January 99*	Technological Interdependence - Knowledge flows and Interaction	DRUID-conference W97, S97 ETIC Fall 1996	IES – AAU Université du Québec a Montréal	Ph.D.-stip. FFL.
Iversen, Mikael	December 96 - December 99	Organization of Synergies	DRUID-conference W97, S97 Participated in 3 Ph.D.-courses	IES - CBS	Ph.D.-stip. FFL
Jørgensen, Kenneth	May 96-October 99	Information technology and organisational change	DRUID-conference W97, S97 ETIC Fall 96 and Spring 97	IES – AAU Stanford University**	Ph.D.-stip Min. of Ind.
Kristensen, Frank Skov	May 96 – April 99*	Innovation in services – taxonomy and analysis	DRUID-conference W97, S97 ETIC Fall 96	IES – AAU Sussex University**	Kand. stip. Min. of Ind
Køster, Nana	August 95 - August 98	Related Diversification in Medium-Seized Firms: Internal Growth and Acquisition	DRUID-conference S97	IVS - CBS	Ph.D.-stip. FFL
Laursen, Keld	February 95 - August 97*	Technology and Trade Specialisation	DRUID-conference W97, S97 Training	IES – AAU Sussex University	Ph.D.-stip. FFL.

			completed Sept. 1996.		
Lorenzen, Mark	September 95 - September 98	Evolution in a localised production system	DRUID-conference W97, S97 EAEPE Summer School, Crete	ILT - CBS	Ph.D.-stip. FFL
Mahnke, Volker	October 97 - August 98	The Firm, Knowledge and Value Added	DRUID-conference S97 Participated in Ph.D.course: Theories of the Firm	IVS - CBS	Ph.D.-stip. CBS/DRUID
Munk Riis Annemarie	December 94 – November 97	Economic and social effects of universal services	DRUID-conference S97	INT - CBS University of Cal. Berkeley	Ph.D.-stip. FFL
Nymark, Søren	February 96 – January 99.	Understanding Organizations	DRUID-conference W97, S97 Participated in 7 different Ph.D. courses	IES – AAU University of Cambridge	Ph.D.-stip. FFL.
Præst, Mette	April 95 – October 98*	Mapping technological opportunities in telecom.	DRUID-conference W97, S97 Training completed Sept. 1996.	IES – AAU Fraunhofer Institut	Ph.D.-stip. FFL.
Schmidt, Anders McIlquham	May 97 - Maj 2000	Strategic Management and Performance	DRUID-conference S97	IVS - CBS	
Valente, Marco	Marts 97 – August 99	Evolutionary modelling of market processes	DRUID-conference S97 ETIC Spring 97 and Fall 1997	IES – AAU University of Milan	Kand. stip. FFL.

ABBREV.: IES = Department for Business Studies, IVS = Department of Industrial Economics and Strategy, INT = Department of International Economics and management, ILT = Department for Logistics and Transport FFL= Financing: Ordinary budget

\*Includes period of leave from the grant.

\*\*Planned and agreed visit abroad

### ***II.B: Ph.D.-training activities organised by DRUID and DRUIDS***

There are two types of activities that are directly and exclusively aiming at Ph.D.-training to be reported here. One is the ETIC Ph.D.-training programme that goes on a regular basis with senior DRUIDs as co-organisers and the other is individual contributions to other initiatives in the field of Ph.D.-training. As mentioned in the Summary and Self Evaluation we regard the Annual Summer and Winter conference as an important instance of Ph.D.-training. D.-training.

## ***II.B1. Activities in the ETIC Programme***

### **1. The ETIC Autumn Session in Strasbourg, October 7th - 18th 1996**

#### ***'Micro-economics of innovation and theory of the firm'*** (first week)

Teaching staff :

Kristine BRULAND  
Patrick COHENDET  
Gilles LAMBERT  
Daniel LLERENA  
Patrick LLERENA  
Franco MALERBA  
Luigi MARENGO  
Marc WILLINGER?

#### ***'Evolutionary Modelling of Technical Change and Economic Dynamics'*** (second week)

Teaching Staff:

Esben Sloth ANDERSEN, IKE/DRUID, Aalborg (co-ordinator);  
Giovanni DOSI, IIASA, Vienna, and "La Sapienza", Rome  
Gerald SILVERBERG, IIASA, Vienna, and MERIT, Maastricht;  
Gisele UMBHAUER, BETA, Strasbourg.

### **2. The ETIC Spring Session in Maastricht, April 14th - 26th, 1997**

#### ***'Macrodynamics of Growth and Trade in Open Economies'*** (first week)

Teaching staff

Bent DALUM, IKE/DRUID, Department of Business Studies, Aalborg, Denmark (coord.)  
Bart VERSPAGEN, MERIT, University of Maastricht, The Netherlands  
Bruno AMABLE, INRA and CEPREMAP, Paris, France  
Jan FAGERBERG, NUPI and ESST, University of Oslo, Norway  
Mario PIANTA, ISRDS-CNR, Rome, Italy  
Katy WAKELIN, MERIT, University of Maastricht, The Netherlands  
Thomas ZIESEMER, MERIT, University of Maastricht, The Netherlands

#### ***'Systems of Innovation and Technology Policy'*** (second week)

Teaching Staff :

Bengt-Åke LUNDVALL , IKE/DRUID, University of Aalborg, Denmark  
Dominique FORAY, IRIS, University of Paris IX, France

Patrick LLERENA, BETA, University of Strasbourg, France (coord.)  
Frieder MEYER-KRAHMER, ISI, Karlsruhe, Germany  
Luc SOETE, MERIT, University of Maastricht, the Netherlands

### 3. The ETIC Autumn Session 1997 in Strasbourg, October 13-17

#### *'Evolutionary Modelling of Technical Change and Economic Dynamics'*

##### Teaching Staff

Esben Sloth Andersen, IKE/DRUID, Aalborg (co-ordinator);  
Giovanni Dosi, IIASA, Vienna, and "La Sapienza", Rome;  
Gerald Silverberg, MERIT, Maastricht;  
Gisele Umbhauer, BETA, Strasbourg.  
Murat Yildizoglu, BETA, Strasbourg.

#### *II.B2. Individual contributions to Ph.D.-training*

ANDERSEN, Esben Sloth:

"On Evolutionary Perspectives in Economics". Lecture for the PhD Course on Business Economics with Special Reference to Recent Research Traditions. Copenhagen Business School, Gilleleje, 6 November 1996.

CHRISTENSEN, Jens Frøslev:

Lecture at Ph.D. course in Methodology (The Ph.D. network "Technology and Society), Holbæk, August, 1997

Lecture at Ph.D.-course on "Learning to write", Copenhagen Business School, October, 1997

CHRISTENSEN, Poul Rind:

Contribution to the ECSB-Ph.D.- course in Växjö, April, 1997.

DALUM, Bent:

Member of the organising committee for ETIC, which is chaired by Prof. Patrick Llerena, BETA, University of Strasbourg.

LUNDVALL, Bengt-Åke:

Participated in Ph.D.-jury for Ms Laurence Tasson, Aix en Provence, November 27, 1996.

Lecture at Ph.D.-seminar of CORE (Copenhagen Research Project on European Integration), February 10, 1997, Department for Political Science University of Copenhagen.

Lectures at Ph.D.-course 'New Perspectives on innovation and technology' February 26-27, 1997 at Roskilde University.

### **Section III: Communication to users**

("(p)" indicates Ph.D.-student)

#### **III.A: Publications aiming at users**

CHRISTENSEN, J. L; TUNZELMAN, N. von & RAMA, R. *Innovation in the European Food Products and Beverages Industry*", European Commission. report for the European Commission, 1996, 146 p.

CHRISTENSEN, J. L. *Borrower-Lender interactions - Financial systems and innovation*. report for the European Commission, ISE, TSER, 1997, 166 p.

CHRISTENSEN, J. L. & KRISTENSEN, A. *Et historisk og internationalt perspektiv på innovation i dansk industri*. København, Erhvervsfremme Styrelsen, 1997, 76 p.

DREJER, Ina, (p) LAURSEN, Keld, (p) & KRISTENSEN, Frank Skov. (p) *Studies of Clusters as a basis for industrial and technological policy in the Danish economy*. DRUID Working Paper 97-14.

GJERDING, A.N., ed. *Den fleksible virksomhed. Omstillingspres og fornyelse i dansk erhvervsliv* (The flexible firm. Pressures for renewal and innovation in the Danish business sector), København: Erhvervsudviklingsrådet, 1997, 179 p.

GJERDING, A.N. *Udviklingen i nordjyske virksomheders konkurrenceevne* (The development of competitiveness in the North Jutland private business sector), NEP Publikationer No.3, Aalborg: Center for Internationale Studier, Aalborg Universitet, 1997, 32 p.

KRISTENSEN, Frank Skov, (p) LAURSEN, Keld (p) & DREJER, Ina (p) *Studies of Clusters as a basis for industrial and technological policy in the Danish economy*. DRUID Working Paper 97-14.

LUNDEVALL, B.-Å. & BARRAS, Susana. *The Globalising Learning Economy; Challenges for Innovation Policy* (Report based on contributions from 7 projects under the TSER programme), Bruxelles, DG XII, forthcoming 1998, 180 p.

#### **III.B: Events and individual interaction with users**

CHRISTENSEN, Jens Frøslev: Two lectures/talks at the Association of Engineers in Denmark, October and November, 1997

CHRISTENSEN, Jesper Lindgaard:

Gave presentation on The Role of Technological Service in Danish Manufacturing at a meeting arranged by "Institutrådet" and the Danish Association of engineers "IDA", House of Ing., Copenhagen, november 20<sup>th</sup>.

DALUM, Bent:

Member of the Working Group that initiated and organise the Danish Business Policy Forum ("Erhvervspolitisk Forum"). Two meetings have been organised in this period of this report. At October 10, 1996 the annual Business Policy Report from the Ministry of Business was discussed. Main speaker Finn Lauritzen, Ministry of Business. BD was one of two the 'reviewers' of the report.

With two directors of the Aalborg University Science Park (NOVI) founder and organiser of a club, NorCOM, of firms (around 20), university departments in electronics and NOVI, which is host and in charge of the current organisation activities of the club. NorCOM, which is focused at the technology system of radiocommunications (mobile, cordless and satellite communications), has organised three meetings during 1997 with speakers from Ericsson, Nokia and Nera. During the meetings BD has delivered short briefings on e.g. "dual-band versus dual-mode phones".

Besides various newspaper articles the journal of the Danish Association of Engineers (IDA) "Engineering Weekly" ("Ingenioeren") has published a series of articles under the theme of "Mobilicom Valley" (about the electronics industry in North Jutland) during the autumn 1997.

Co-organiser of a seminar on "Business Policy" with focus of the Business Policy Report 1997 and the relation between high tech firms and the Danish venture capital market, November 27-28, 1997 in Hornbaek. The seminar was held by DJOEF-Efteruddannelse.

Member of an ad hoc group in Invest-in-Denmark that commented drafts for chapter 11 on foreign direct investments in Danish industry in the 1997 version of the Business Policy Report from the Danish Ministry of Business.

FOSS, Nicolai Juul.

Participated in the committee about the importance of the work of KonkurrenceRådet

JØRGENSEN, Kenneth M.:

Ph.D-student connected to the Ministry of Business November 1 1996 - July 1, 1997. Involved in the design of the LOK-project and participated in LOK-conference in Copenhagen October 6, 1997.

LAURSEN, Keld (p):

Workshop on Innovation Systems, OECD, Paris October 3, 1996,.

TSER-Policy Conference on Technology, Economic Integration and Social Cohesion, University of Maastricht, the Netherlands, April 18-19, 1997.

Seoul OECD-Workshop on National Innovation Systems in Catching-up Economies, Hotel Shilla, Seoul, South Korea, October 15, 1997.

LUNDVALL, Bengt-Åke

Has produced a major report and a summary policy document for EC-DG XII, aiming specifically at communicating results from TSER-research and other socio-economic research to policy makers in Europe (Innovation policy in the globalising learning economy). There have been two major meetings on the subject of Innovation Policy in Bruxelles in that context: April 25 and October 29-30, 1997. Both meetings had as exclusive purpose to discuss the design of the Lundvall-Barras report.

Presentation on 'Innovation and organisational change' at the annual 'Institutmøde' for the Danish Technological Institutes, Schæffergården, Gentofte, September 18.

MASKELL, Peter:

Presentation at Ministry of Environment Conference "Omdannelse af ældre erhvervs- og havneområder", March 1997, Eigtveds Pakhus, Copenhagen.

Participated in Scandinavian Academies for Management Studies' Round Table on the Øresund region, April 1997

Presentation on 'Competitiveness and industrial policy' at DJØF training course November 1997, Trouville, Hornbæk

Presentation on 'The international positioning of the Øresund region' Dansk Byplanlaboratoriums Danish Swedish Conference, Hotel Marienlyst, December 1997, Elsinore.

VILLUMSEN, Gert:

Organizer (together with Bent Dalum and Jørgen Basballe, managing director of NIVU) of a club, NorCOM, of firms (around 20), university departments in electronics and NOVI, which is host and in charge of the current organisation activities of the club. NorCom, which is focused at the technology system of radio communications (mobile, cordless, and satellite communications), has organised three meetings during 1997 with speakers from Ericsson, Nokia and Nera.

### ***III.C: Events and collective interaction with users***

In co-operation with the Board of Center for Industrial Economics and the Centre for Industrial Economics, DRUID organised the User Oriented Conference on Industrial Economics, Eigtveds Pakhus, October 31, 1996.

In connection with the DISKO-project DRUID has organised a number of user-oriented activities in collaboration with Erhvervsfremme Styrelsen and ErhvervsUdviklingsRådet: Meetings with a steering committee November 29 1996, August 27 and November 15 1997.

Specific meetings with users to discuss preliminary results from reports for sub-projects: June 18, 1997 on Organisational Change and Change in Qualifications, Schæffergården, Gentofte. November 27, 1997 on Knowledge-intensity and knowledge flows in the Danish Economy, Erhvervsfremme Styrelsen

In connection with OECD-activities in the field of innovation systems DRUID-projects have played a major role in representing Denmark and co-ordinating certain activities. DISKO/DRUID organised in collaboration with OECD a meeting in Aalborg 3.-4. April 1997. There have been a number of meetings in Paris: 19.-20. March 1997, 25 June 1997, 27.-28.th October 1997 & 11<sup>th</sup> December 1997.

## **Appendix 1**

("(p)" indicates Ph.D.-student)

### **DRUID Working Paper Series**

- 96-11 Maskell, Peter. Localised low-tech learning in the furniture industry. (ISBN 87-7873-011-2)
- 96-12 Laursen, Keld (p) The Impact of Technological Opportunity on the Dynamics of Trade Performance. (ISBN 87-7873-012-0)
- 96-13 Andersen, Esben S. The Evolution of an Industrial Sector with a Varying Degree of Roundaboutness of Production. (ISBN 87-7873-013-9)
- 96-14 Dalum, Bent, Laursen, Keld (p) & Villumsen, Gert. The Long Term Development of OECD Export Specialisation Patterns: De-specialisation and "Stickiness". (ISBN 87-7873-014-7)
- 96-15 Foss, Nicolai J. Thorstein B. Veblen: Precursor of the Competence-Based Approach to the Firm. (ISBN 87-7873-015-5)
- 96-16 Gjerding, Allan Næs. Organisational innovation in the Danish private business sector. (ISBN 87-7873-016-3)
- 96-17 Lund, Reinhard & Gjerding, Allan Næs. The flexible company Innovation, work organisation and human resource management. (ISBN 87-7873-017-1)
- 97-1 Foss, Nicolai J. The Resource-Based Perspective: An Assessment and Diagnosis of Problems. (ISBN 87-7873-019-8)
- 97-2 Langlois, Richard N. & Foss, Nicolai J. Capabilities and Governance: the Rebirth of Production in the Theory of Economic Organization. (ISBN 87-7873-020-1)
- 97-3 Ernst, Dieter. Partners for the China Circle? The Asian Production Networks of Japanese Electronics Firms. (ISBN 87-7873-022-8)
- 97-4 Richardson, George B. Economic Analysis, Public Policy and the Software Industry. (ISBN 87-7873-023-6)

- 97-5** Borrus, Michael & Zysman, John. You Don't Have to Be A Giant: How The Changing Terms of Competition in Global Markets are Creating New Possibilities For Danish Companies. (ISBN 87-7873-024-4)
- 97-6** Teubal, Morris. Restructuring and Embeddeness of Business Enterprises-Towards an Innovation System Perspective on Diffusion Policy. (ISBN 87-7873-025-2)
- 97-7** Ernst, Dieter & Guerrieri, Paolo. International Production Networks and Changing Trade Patterns in East Asia: The case of the Electronics Industry. (ISBN 87-7873-026-0)
- 97-8** Lazaric, Nathalie & Marengo, Luigi. Towards a Characterisation of Assets and Knowledge Created in Technological Agreements: Some evidence from the automobile-robotics sector. (ISBN 87-7873-027-9)
- 97-9** Ernst, Dieter. High-Tech Competition Puzzles. How Globalization Affects Firm Behaviour and Market Structure in the Electronics Industry. (ISBN 87-7873-028-7)
- 97-10** Foss, Nicolai J. Equilibrium vs Evolution in the Resource-Based Perspective: The Conflicting Legacies of Demsetz and Penrose. (ISBN 87-7873-029-5)
- 97-11** Foss, Nicolai J. Incomplete Contracts and Economic Organisation: Brian Loasby and the Theory of the firm. (ISBN 87-7873-030-9)
- 97-12** Ernst, Dieter & Lundvall, Bengt-Åke. Information Technology in The Learning Economy – Challenges for Developing Countries. (ISBN 87-7873-031-7)
- 97-13** Kristensen, Frank Skov (p). A study of four organisations in different competitive environments. (ISBN 87-7873-032-5)
- 97-14** Drejer, Ina, (p) Kristensen, Frank Skov (p) & Laursen, Keld (p). Studies of Clusters as a Basis for Industrial and Technology Policy in the Danish Economy. (ISBN 87-7873-033-3)
- 97-15** Laursen, Keld (p) & Drejer, Ina (p). Do Inter-sectoral Linkages Matter for International Export Specialisation? (ISBN 87-7873-034-1)
- 97-16** Lundvall, Bengt-Åke & Kristensen, Frank Skov (p). Organisational change, innovation and human resource Development as a response to increased competition. (ISBN 87-7873-036-8)

## **Appendix 2**

### **Conferences**

#### **8th.-10th. January 1997. The DRUID Winter Conference**

##### Interactive Learning and the Theory of the Firm

Jens Frøslev Christensen: *The Dynamics of the Diversified Corporation and the Role of Central Management of Technology*

Discussants: Poul Rind Christensen and Massimo Colombo

Mikael Iversen: *Concepts of Synergies - Towards a clarification*

Discussants: Bengt-Åke Lundvall and Massimo Colombo

Mark Lorenzen: *The creation of routines in an interactive perspective*

Discussants: Nicolai Juul Foss and Massimo Colombo

Peter Maskell: *The Process and Consequences of UBIQUIFICATION*

Discussants: Klaus Lindegaard and Massimo Colombo

Lars Gelsing & Kent Nielsen: *Promoting Inter-firm Networks in Industrial Policy - Danish evidence*

Discussants: Kristian Philipsen and Poul Rind Christensen

Poul Rind Christensen og Poul H. Andersen : *The Pen & the Needle - Interorganizational dynamics of Combining Fields of Knowledge Lessons from Novo Nordisk*

Discussants: Frank Skov Kristensen and Staffan Laestadius

##### Organizational Change and Innovation

Reinhard Lund and Allan Næs Gjerding: *The flexible company. Innovation, work organisation and human resource management*

Discussants: Mikael Iversen and Charles Edquist

Reinhard Lund: *Flexibility, New Technology, Product/market innovation and organisational change in two economic sectors*

Discussants: Jens Frøslev Christensen og Charles Edquist

Bengt-Åke Lundvall, Poul Thøis Madsen, Frank Skov Kristensen: *Increased flexibility, innovativeness and human resource development as a response to increased competition*

Discussants: Poul H. Andersen and Charles Edquist

## Technological opportunities and International Specialisation

Bent Dalum, Keld Laursen and Gert Villumsen: *The Long Term Development of OECD Export Specialisation Patterns: De-specialisation and 'Stickiness'*  
Discussants: Esben Sloth Andersen and Lynn Mytelka

Keld Laursen: *The Impact of Technological Opportunity on the Dynamics of Trade Performance*  
Discussants: Peter Lotz and Lynn Mytelka

Peter Lotz: *Interdependencies between export specialisation, health care expenditures, and research activities*  
Discussants: Bent Dalum and Lynn Mytelka

Olman Segura-Bonilla: *Institutional Changes, Innovation and Forestry in Central America*  
Discussants: Maj Andersen and Lynn Mytelka

National Systems of Innovation, the Learning Economy and Economic Growth

Nicolai Juul Foss: *The Growth Theory: Some Intellectual Growth Accounting*  
Discussants: Keld Laursen and Jan Fagerberg

Esben Sloth Andersen: *An Evolutionary Model of Structural Economic Dynamics*  
Discussants: Bengt-Åke Lundvall and Jan Fagerberg

Birgitte Gregersen and Björn Johnson: *Learning Economies, Innovation Systems and European Integration*  
Discussants: Gert Willumsen and Jan Fagerberg

Ina Drejer: *The Knowledge Structure of the Danish Economy - does formal education matter in production?*  
Discussants: Mark Lorenzen and Dieter Ernst

Jesper Lindgaard Christensen and Ina Drejer: *Finance and Innovation System or Chaos*  
Discussants: Peter Maskell and Dieter Ernst

Maj Andersen: *Interorganisational learning in the green transformation - A Competence based explanation*  
Discussants: Björn Johnson and Dieter Ernst

List of participants:

Aalborg University:

Esben Sloth Andersen, Associate Professor  
Jesper Lindgaard Christensen, Research Fellow  
Bent Dalum, Associate Professor  
Ina Drejer, Ph.D.-student  
Lars Gelsing, Associate Professor  
Erling Jensen, Assistant Professor  
Björn Johnson, Associate Professor  
Kenneth Jørgensen, Ph.D.-student  
Frank Skov Kristensen, Ph.D.-student  
Keld Laursen, Ph.D.-student  
Klaus Lindegaard, Assistant Professor  
Reinhard Lund, Professor  
Bengt-Åke Lundvall, Professor, Research Leader  
Søren Nymark, Ph.D.-student  
Olman Segura-Bonilla, Ph.D.-student  
Gert Villumsen, Assistant Professor  
Mette Madsen, Secretary

Southern Denmark Business School:

Poul Rind Christensen, Professor  
Kristian Philipsen, Assistant Professor

The Aarhus Business School:

Poul H. Andersen, Assistant Professor

Copenhagen Business School:

Maj Andersen, Ph.D.-student  
Jens Frøslev Christensen, Associate Professor  
Nicolai Juul Foss, Associate Professor  
Michael Iversen, Ph.D.-student  
Nana Køster, Ph.D.-student  
Mark Lorenzen, Ph.D.-student  
Peter Lotz, Associate Professor  
Peter Maskell, Professor  
Anne Marie Munk Riis, Ph.D.-student  
Henrik Sorrn-Friese, Ph.D.-student  
Finn Valentin, Associate Professor  
Annelise Klüwer, Head of Section

Guests:

Bo Carlsson, Case Western Reserve University, USA  
Massimo Columbo, Professor, Politecnico di Milano, Italy  
Charles Edquist, Professor, University of Linköping, Sweden  
Jan Fagerberg, Professor, NUPI, Norway

Lynn Mytelka, UNCTAD, Geneva, Switzerland  
Dieter Ernst, Guestprofessor, Aalborg University  
Staffan Laestadius, Professor, The Royal School of Technology, Stockholm, Sweden

### **1st.-3rd. June 1997. The DRUID Summer Conference**

#### Competition and Industrial Dynamics

Chairman: Jens Frøslev Christensen

G. B. Richardson: *Competition, Innovation and Increasing Returns*

Discussant: Ed Steinmueller

Giovanni Dosi/Orietta Marsili: *Industrial Structures and Dynamics: Evidence, Interpretation and Puzzles*

Discussant: Michael Storper

Bo Carlson: *Competition and Industrial Dynamics - Innovation, Entry, and Spillovers*

Discussant: Esben Sloth Andersen

Benjamin Coriat: *Firms, competition and selection - Strengths and limits of the Evolutionary Approach*

Discussant: Patrick Llerena

Morris Teubal: *Restructuring and Embeddness of the Business Sector - A Systems of Innovation Perspective on Diffusion*

*Policy*

Discussant: Björn Johnson

#### Competition and dynamics in IT-related sectors

Chairman:

Massimo Colombo (with Paola Carrone): *Capabilities in the Multimedia Regime -The case of Telecommunications*

*Operators*

Discussants: Robin Mansell/Bent Dalum

Ed Steinmueller: *The Evolution of Competitive Advantage in the Global Semiconductor Industry: 1947-1996*

Discussants: Massimo Colombo/Mette Præst

Robin Mansell: *Relocations of Competition in the field of Information and Communications Technology*

Discussants: Peter Lotz/Maj Andersen

Dieter Ernst: *High-Tech Competition Puzzles. How Globalization Affects Firm Behaviour and Market Structure in the Electronics Industry*

Discussants: Svend Hylleberg/Nana Køster

Globalisation and changing patterns of competition

Chairman: Peter Maskell

Michael Storper: *Social Impacts of Globalization - Production, Consumption and Inequality in Global Context.*

Discussants: Poul H. Andersen/Mark Lorenzen

Claude Serfati (with Francois Chesnais) : *Long Horizon Investment under a Globalised Finance Dominated Accumulation Regime. An Interpretation of the Levelling Off and Decline of R&D in the 1990s*

Discussants: Michel Delapierre/Jesper Lindgaard Christensen/

Lynn Mytelka & Michel Delapierre: *Industrial Dynamics, Knowledge-Based Networked Oligopolies and the Emergence of New Modes of Competition*

Discussants: Jens Nyholm/Olman Segura

Franco Malerba (with Timothy Bresnahan): *Industrial Dynamics and the Evolution of Firms' and nations' Competitive Capabilities in the World Computer Industry*

Discussants: Morris Teubal/Gert Villumsen

Stability and change in industrial structures

Chairman: Patrick Llerena

Esben Sloth Andersen: *The Schumpeterian Trade-off in an Evolutionary Model of Structural Economic Change*

Discussants: Bo Carlsson/Henrik Sorn Friese

Peter Lotz: *Stable Industries in Turbulent Environments*

Discussants: Dieter Ernst/Klaus Lindegaard

Bengt-Åke Lundvall: *Industrial Dynamics in a small open economy*

Discussants: Franco Malerba/Keld Laursen

Round table on the implications of globalisation, the learning economy and the information society for competition policy

Chairman: Bo Carlsson, Svend Hylleberg, Finn Lauritzen, G.B. Richardson, Ed Steinmueller, Bengt-Åke Lundvall and

Lynn Mytelka

List of participants:

Aalborg University:

Andersen, Esben Sloth, Associate Professor  
Christensen, Jesper Lindgaard, Research Fellow  
Dalum, Bent, Associate Professor  
Gelsing, Lars, Associate Professor  
Gregersen, Birgitte, Associate Professor  
Jensen, Erling, Assistant Professor  
Johnson, Björn, Associate Professor  
Jørgensen, Kenneth, Ph.D.-student  
Jørgensen, Martin, Ph.D.-student  
Kristensen, Frank Skov, Ph.D.-student  
Laursen, Keld, Ph.D.-student  
Lindegaard, Klaus, Assistant Professor  
Lund, Reinhard, Professor  
Lundvall, Bengt- Åke, Professor  
Madsen, Lars Peder, Ph.D.-student  
Præst, Mette, Ph.D.-student  
Segura, Olman, Ph.D.-student  
Valente, Marco, Ph.D.-student  
Villumsen, Gert, Assistant Professor  
Wittrup, Pernille, Secretary

The Aarhus Business School:

Andersen, Poul H., Assistant Professor

Southern Denmark Business School:

Christensen, Poul Rind, Professor  
Philipson, Kristian, Assistant Professor

Roskilde University

Susana Borrás Alomar, Ph.D.-student

Copenhagen Business School:

Andersen, Maj, Ph.D.-student  
Christensen, Jens Frøslev, Associate Professor  
Ernst, Dieter, Professor  
Foss, Kirsten, Assistant Professor  
Foss, Nicolai Juul, Associate Professor  
Iversen, Mikael, Ph.D.-student  
Køster, Nana, Ph.D.-student  
Lorenzen, Mark, Ph.D.-student  
Lotz, Peter, Associate Professor

Mahnke, Volker Ph.D.-student  
Maskell, Peter, Professor  
Schmidt, Anders, Ph.D.-student  
Sornn-Friese, Henrik, Ph.D.-student  
Thomsen, Steen, Associate Professor  
Klüwer, Annelise, Head of Section

Guests:

Carlsson, Bo, Professor , Case Western Reserve University  
Colombo, Massimo, Professor, Politecnico di Milano  
Delapierre, Michel, Professor  
Dosi, Giovanni, Professor, International Institute for Applied Systems Analysis,  
Austria  
Hylleberg, Svend, Professor, Aarhus University  
Lauritzen, Finn, Director Konkurrencerådet  
Llerena, Patrick, Professor, Beta ULP  
Loasby, Brian, Professor, University of Stirling  
Malerba, Franco, Professor, Università Commerciale Luigi Bocconi, Italy  
Mansell, Robin, Professor, University of Sussex  
Marsili, Orietta, Professor, University of Sussex  
Mytelka, Lynn, UNCTAD, Geneva, Switzerland  
Nyholm, Jens, Advisor, Ministry of Industry  
Rytter, Niels  
Richardson, G B, U.K.  
Serfati, Claude, Professor, Université de Versailles  
Smith, Keith, Professor, STEP-group, Oslo\*  
Steinmueller, Ed, professor, University of Sussex  
Storper, Michael, Professor, UCLA & University of Marne-la-Vallée  
Teubal, Morris, Professor, The Jerusalem Institute for Israel Studies

## **Appendix 3**

### **DRUID-seminars at CBS and AAU**

#### ***DRUID/IKE seminar (autumn 1996)***

18/9 Nils Karl Sørensen Danish Institute of Border Region Studies "Analysis of Regional Trade. Evidence from the County of South Jutland."

25/9 Olman Segura IKE Group Ph.D. work: "Institutional Changes, Innovation and Forestry in Central America."

30/10 Keld Laursen IKE Group. Ph.D. work: "The Impact of Technological Opportunity on the Dynamics of Trade Performance."

13/11 Kenneth Jørgensen IKE Group Ph.D. work: "Information Technology and Knowledge Creation at the Firm Level."

13/11 Dieter Ernst p.t. Dept. of Development & Planning & Dept. of Business Studies, both Aalborg University "Global Competition in the Electronics Industry: Implications for the Organization of International Production Report on some findings of a study done at BRIE Univ. Of California, Berkeley: The Sloan Foundation project on the globalization in the electronics industry.

20/11 Ina Drejer IKE Group Ph.D. work: "Knowledge and Interaction." Frank Skov Kristensen IKE Group. Work related to his Ph.D. project on theories and taxonomies of the innovation process.

27/11 Jesper Lindgaard Christensen & Lars Gelsing IKE Group "Et studie af den Nordjyske erhvervsudvikling."

4/12 John Zysman BRIE Univ. of California, Berkeley  
"Institutions, Market Logics and National Trajectories of Innovation."

11/11 Christian DeBresson Professor of Management and Economics of Technology at the University of Quebec, Montreal, Canada "Economic Interdependence and Innovative Activity: how to make Leontief models truly dynamic?"

18/12 Bent Dalum, Keld Laursen & Gert Villumsen IKE Group "Stability of International Specialisation Patterns."

#### ***DRUID/IKE seminar (spring 1997)***

5/2 Dieter Ernst Visiting Fellow, Aalborg University. "Partners for the China Circle? The Asian Production Networks of Japanese Electronics"

5/3 Staffan Laestadius Department of Industrial Economics and Management, Kungliga Tekniska Högskolan, Stockholm. "Competence Requirements in Low Tech Firms"

19/3 Esben Sloth Andersen IKE/DRUID. "Evolutionary growth Theory and Innovation Systems"

2/4 Marco Valente IKE/DRUID. PhD work - An Object-printed Approach to Evolutionary Economic Modelling"

30/4 Ina Drejer IKE/DRUID. "PhD work - Innovation Activity and Interaction in the Danish Economy" - Preliminary results from an OECD project on interdependence in National Innovation Systems

7/5 1) Mette Præst IKE/DRUID. 2) Brian Wixted Department of Primary Industries and Energy, Canberra, Australia 1) "PhD work - Dynamic Capabilities and Technology Strategies" 2) "User- Producer Relations in Australia and Denmark: An input-output and trade perspective"

13/5 Staffan Jacobsson and Magnus Holmén Dept. of Industrial Management and Economics, Chalmers University of Sweden, Gothenborg. "A Method for Delineating a Knowledge Based Cluster"

14/5 Hans Westling Promandat and Nutek "Procurement and User Involvement as Technology Policy"

14/5 Bengt-Åke Lundvall & Dieter Ernst IKE/DRUID & Visiting Fellow, Copenhagen Business School, respectively "Information Technology and Economic Development"

27/5 Christian DeBresson University of Quebec, Montreal, Canada "Innovative Activity in the Learning Economy: A comparison of systems in some OECD Countries"

***DRUID/IKE seminar (autumn 1997)***

1/10 Laursen IKE/DRUID. The Importance of Differentiated Types of Technological Activities on International Export Specialisation

22/10 Professor Jane Marceau Univ. of Western Sydney, Australia. The Australian Medical Device Industry

29/10 Mette Praest IKE/DRUID. Accumulation of Technological Competencies: Who Perform Better in Turbulent Environments

12/11 Bengt-Åke Lundvall IKE/DRUID. Innovation Policy in the New Context. Discussants: Keld Laursen and Bent Dalum

26/11 Jesper Lindgaard Christensen IKE/DRUID Invisible Angels in search of Non-existing Equilibria. Discussants: Martin Jørgensen and Staffan Gullander (to be confirmed)

10/12 Bent Dalum, Keld Laursen & Gert Villumsen IKE/DRUID. Is There Such a Thing as a "Good" (Trade) Specialisation Pattern? Discussants: Mette Præst and Esben Sloth Andersen

***DRUID/IVS seminar (autumn 1996)***

9/10 Tom Elfring: "Schools of Thought in Strategic Management"  
Discussants: Nicolai Juul Foss, Finn Valentin

23/10 Tom Elfring: "Entrepreneurship and Strategic Management"  
Discussants: Nicolai Juul Foss, Henrik Bang

6/11 Bart Nooteboom: "Towards a Cognitive Theory of the Firm"  
Discussants: Finn Valentin, Jens Frøslev Christensen

7/11 Luigi Marengo: "Organizational Toutines: Some Theoretical Modelling and Experimental Issues"  
Discussant: Jens Frøslev Christensen,

20/11 Per Vejrup: "Jobomsætning, Personmobilitet og Ledighed"  
Discussants: Peter Maskell, Peter Lotz

4/12 Jens Frøslev Christensen, Peter Lotz og Kirsten Foss: "Teknologisk Service i Danmark - Dilemmaer og Perspektiver"  
Discussants: Finn Valentin og Nicolai Juul Foss

18/12 Nicolai Juul Foss: "Capabilities and Governance"  
Discussants: Povl Erik Jensen, Kenneth Husted

***DRUID/IVS seminar (spring 1997)***

26/2 Annemarie Munk Riis (INT): "From Welfare to Innovation: Toward a New Rationale for Universal Service". Discussants: Mikael Iversen (IVS), Peter Lotz (IVS)

12/3 Arnold Boon (IVS): "The Economic Organisation of Innovation: Strategies and Structures in New Agri-Industrial Industries". Discussants: Kirsten Foss (IVS), Peter Lotz (IVS)

9/4 Dieter Ernst (AAU): "Dynamics of Change of International Production Networks: The Case of Japanese Electronic Firms". Discussants: Peter Maskell (ILT)

16/4 Nicolai Juul Foss (IVS): 'Noget om Business Systems' Discussants: Steen Thomsen (INT)

23/4 Mark Lorenzen (ILT): Ph.D. projekt: "Learning in Space: Some Properties of Knowledge, Interaction, and Territory in Neo-Institutional Geography" Discussants: Kirsten Foss (IVS)

7/5 Howard Rush (University of Brighton): "Innovation Management in Complex Product Systems"

14/5 Steen Thomsen (INT): "An Empirical Test of a Corporate Life-Cycle". Discussants: Per Vejrup (IVS), Mikael Iversen (IVS)

21/5 Christian Knudsen (IVS): "Om behavioralismen" Discussants: Henrik Lando (FI), Jens Frøslev Christensen (IVS)

28/5 Jan Fagerberg, NUPI, Oslo: "Technology, Growth and Unemployment across European Regions" Discussants: Peter Maskell (ILT),

18/6 Ron Sanchez, University of Western Australia, Australia: "Product and Process Architectures in the Management of Knowledge Resources & Ron Sanchez & Joseph T. Mahoney: "Modularity and Dynamic Capabilities".

***DRUID/IVS seminar (autumn 1997)***

18/8 Richard Langlois, University of Connecticut, USA: "Scale, Scope, and the Reuse of Knowledge"

9/10 Povl-Erik Jensen (IVS): "Kompetencer i brug, et eksempel". Discussants: Nana Kjøster (IVS), Anders McI Schmidt (IVS)

30/10 Anoop Madhok, David Eccles School of Business, University of Utah: "Knowledge, Value and Interfirm Collaboration". Discussants: Jens Frøslev Christensen (IVS), Volker Manke (IVS)

07/11 Luigi Orsiengo: “The Dynamics of Knowledge and The Evolution of an Industrial Network: The Case of Biotechnology”. Discussants: Kirsten Foss (IVS), Rikard Stankiewicz (IVS)

19/11 Volker Manhke (IVS): “Knowledge-intensive Business as Puzzlement for The Contractual Theories of the Firm: Potential Solutions”. Discussants: Nicolai Foss (IVS), Dieter Ernst (IVS)

03/12 Jens Frøslev Christensen (IVS): “The Dynamics of the Diversified Corporation and the Role of Central Management of Technology”. Discussants: Christian Knudsen (IVS), Kenneth Husted (IVS)

3/12 Rikard Stankiewicz (IVS): “The Concept of "Design Space"”. Discussants: Finn Valentin (IVS), Jens Frøslev Christensen (IVS)

## ***Appendix 4***

### **Guest professors**

Lucy First, Brisbane, Australia. Sep. 1996

John Zysman, University of California, Berkeley, California.  
November-December 1996.

Chris DeBresson, University of Quebec, Montreal, Canada. 4-15 December, 1996

Staffan Laestadius, Department of Industrial Economics and Management, Kungliga  
Tekniska Högskolan, Stockholm. March, 1997.

Brian Wixted, University of Western Sydney, Australia. 3 - 9 May, 1997.

Hans Westling, Nutek, Stockholm. 14 May, 1997.

Bengt Staffan Jacobsson, Department of Industrial Management and Economics,  
Chalmers University of Technology, Göteborg, 12 -16 May, 1997.

Chris DeBresson, University of Quebec, Montreal, Canada. 26 - 31, May 1997.

Professor Jan Fagerberg, NUPI, Oslo, May, 1997

Professor Richard Langlois, 17-19 August, 1997 and 22-25 August, 1997

Jane Marceau, University of Western Sydney Macarthur, Australia. 17-22  
October, 1997.

Professor Kristine Bruland, Historisk Institutt, Blindern, Norway. 11-12  
November, 1997.