

The Innovation Alliance: Succeeding in an Evolving Global Economy

A Collaboration between

Denmark: FORA, DAIMI, The Innovation Council

Finland: ETLA, TEKES, Office of the Prime Minister

California, USA: BRIE, Bay Area Economic Forum, CITRIS

How do wealthy regions stay wealthy in a tumultuous and ever changing global economy? Three such economic regions: Denmark, Finland, and the San Francisco Bay Area in the United States are trying to answer the question together. This collaborative effort is the Innovation Alliance. The Innovation Alliance consists of three sets of activities: connecting policy discussions; providing analytic research; and joining in technological development. Policy discussions on connecting the debates allow the three regions to learn from each other. Analytic research will address critical policy and business challenges such as outsourcing, entrepreneurship, and education strategies. This research of publishable quality will provide substantive input to policy discussions and the technological program. Technology development will focus on joint efforts to create collaboratively new innovative technology and applications.

It has become conventional to observe that we live in a new economic era that is both global and digital. Throughout the economy the revolution has been transformative, changing the character of product, process, marketplace and competition. A set of distinctive tools – such as Information Technologies (IT) - have altered the way companies and countries compete. A sequence of national innovations - from Japanese lean production through Indian software outsourcing - have continuously jolted established competitors and trade/investment relationships. The “global” and the “digital” constantly shift the levers of advantage in value creation, whereby traditional strengths no longer suffice. All of this tells us that globalization and IT alter the economy, but not how companies might take advantage of the process or governments might act to capture gain for their communities. What must be done to adapt to a rapidly evolving global and digital economy? Will corporate strategy and policy planning be enough? Will experimental corporations in an experimental economy be required?

The three regions have very successfully, but in quite different ways, based their success on innovation. Denmark and Finland are two countries that are, by every count, at the top of the world's wealth, competitiveness and innovation rankings. California is one of the world's wealthiest regions; its prosperity is built on ongoing innovation. Although success has been achieved by all, their paths, policies and technology trajectories have differed strikingly and have thus generated different concerns about how to succeed in the future. For Denmark the question is, can the Danish model of innovation in small and middle-sized companies be sustained? Denmark has for more than a century successfully imported commodity products – be that grain or electronic components. On that basis, Danish companies have consistently defined high value products, added design, assured quality and exported into niche markets. For Finland, in the 1980s and 1990s, its image shifted from a Soviet supplier and exporter of forest products to that of a telecommunications leader and sophisticated equipment producer. The shift was not an accident; Finland raised the level of R and D spending from approximately 1.5% of GDP to 3.5% of GDP. But now is a new era. The two pillars – ICT and Forest products – may not be sufficient to sustain growth and employment. Can Finland replicate Nokia's success or grow beyond the example? For California, will old "Silicon Valley System" strengths suffice for a new era? The Innovation Alliance is a way through which the three regions can grapple with these questions, invest in the future by learning from each other and generate new policies and technologies.

I. Relevance of the Innovation Alliance

First, these three regions are sophisticated, technology-rich and high wage regions that have succeeded in the past decades. They have done so by effectively applying and developing advanced technology as well as sustaining productivity in more traditional sectors. All must now adapt to radical changes in the global economy. Thus these regions share the problems faced by high tech communities and the task of defining the next generation of innovations that will allow them to maintain their success.

Second, these three regions are extremely good at the development of technology in ways quite different from one another. The policy requirements of their several different, but successful, strategies are quite useful to each other. These countries are amongst the real leaders worldwide in the development and application of digital technology. Note that Linux, the open source

operating system that has become significant, is of Finnish origins. Nokia is also a Finnish company that reflects a redirection of that country's economy. Danish companies like NOVO, B&O and LEGO are internationally renowned for their ability to create uniquely designed, high quality products combining new technology and functional excellence. There are clear indications of fundamental innovations in production organization in the Nordic countries that have significance for the development of high-technology applications in advanced industrialized economies. For decades, Silicon Valley has been home to ICT market makers, hi-tech companies and world renown research and development facilities. After the burst of the dot.com bubble and the emergence of innovative capacity across regions of the world, Silicon Valley is revisiting its core capacities and looking to develop its future collaboratively.

Third, the Finns and Danes have self-consciously used policy to establish a range of institutions such as the Danish Technology Institute (DTI) and the Finnish National Technology Agency (Tekes) that have quite clearly supported the adaptation of their companies. California ICT policy has not necessary aligned with industry efforts and yet there is a growing realization that other regions have relied on a strong interrelationship between policy instruments and industrial innovation. Aligning California policy with Silicon Valley technology companies strengthens the regions' ability to experiment with new technologies and new markets.

Fourth, the three regions can collaborate across sectors to spur innovative technologies beneficial to respective economies. Much of the policy research underpinning the Alliance will support technology creation and will facilitate greater linkages to the public and private sectors.

II. The Innovation Alliance Defined

The project's substance comes in three initiatives: public policy discussions, research efforts, and technology creation. The Innovation Alliance is envisioned as an ongoing set of policy and research discussions with the objective of constructing actionable policy initiatives for the three regions. Aside from policy prescriptions, the Alliance will also generate real technologies stemming from collaboration on core research clusters: learning, food/food processing and technological devices. More specifically, teams of researchers drawing on the intellectual resources of the three regions will address issues including outsourcing and off-shoring, next

generation telecommunications networks, embedded and wireless technologies, the evolving role of the research university in innovation policy, and the creation of value in a digital era.

i. Public Policy Discussions

The Alliance will use its research to develop public policy proposals that may be deployed in the three regions. The Finns and the Danes each have national initiatives looking at their future in the global economy, and have decided to build into their efforts joint discussions of the policy questions that emerge from the common issues they face. The two groups have been linked together by ties to the University of California. The Finnish and Danish groups have also pledged to continue funding for the next year to assure those joint discussions, and have sought to involve the California Consortium in their policy discussions. A rotating series of meetings in California, Denmark and Finland are planned for the next year. Those discussions are built around significant policy documents from each region.

ii. Analytic Research Efforts

On the policy research side, the Innovation Alliance will specialize in four areas, working jointly on some issues while learning from each other's work on others. First, at the core, we will address the question of how to create value in the digital economy. Among many crucial developments, the rise of open source production systems and service-sector off-shoring across national borders have called into question old models for gaining competitive advantage on the part of companies and industries in the countries of the innovation alliance. Addressing both of these changes separately, we will try to sketch the outlines of new experimental strategies of creating lasting economic value.

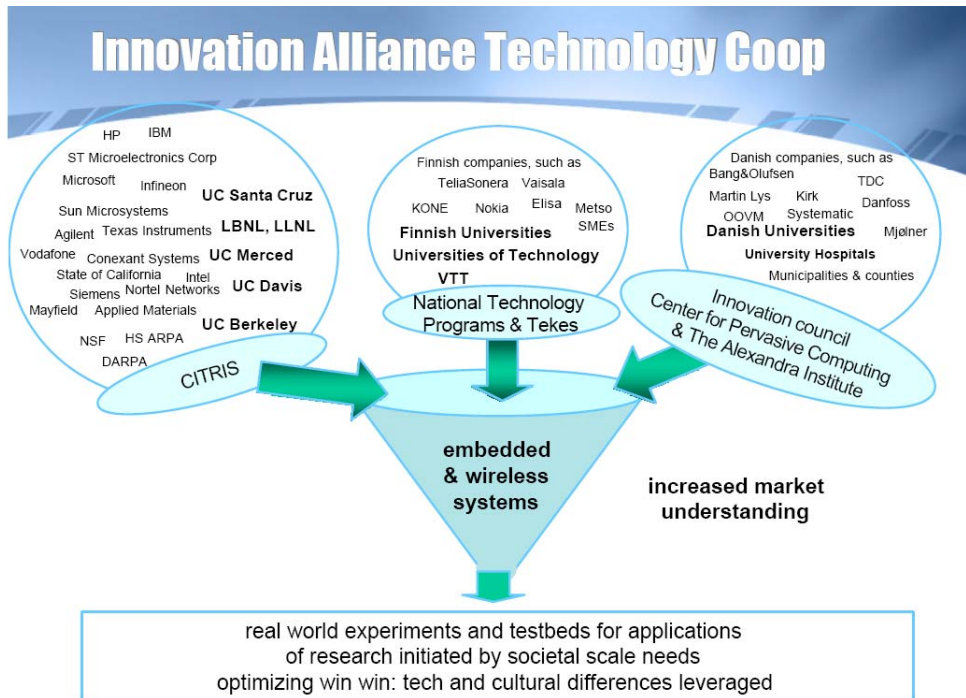
Second, we examine national strategies and dynamics behind next-generation telecom/data network deployments in Asia. This region is of interest to participants of the Innovation Alliance because in the context of the digital economy. There is the possibility that new, high-performance network environments in Asia may shift the location of innovation in particular services and technologies away from Europe and the US. We are also interested in how emerging markets may shift and affect the technologies that are developed by existing leaders. In this segment, we focus on Japan, South Korea, China, and other Southeast Asian countries.

Third, multi-national research teams will research government policies to stimulate entrepreneurship in the knowledge economy. We will separately focus on policies to stimulate the founding and the growth of new companies. Issues such as labor markets flexibility, potential disincentives inherent in personal taxation regimes and bankruptcy legislation affect firm strategy and will be addressed in our research. Furthermore, we will study the habitat that provides start-ups with access to new technology, risk capital, consultancy services on business planning and technological development. Special attention will be given to the role of partnerships between industry and research universities, design academies and other research institutions that drive regional growth.

Fourth, we are planning to develop indicators for innovation capacity, which will greatly increase the comparability of the separate country studies on which we are drawing and help to identify best-practice policies.

iii. Technology Creation

The technology side of the Alliance will select particular areas where substantive collaboration developing technology and product is possible. One initial instance is the application of embedded micro systems in the area of health and elderly care. Other clusters being considered are Food and Food/processing and Learning.



The first of these domains is underway and will generate high-tech medical electronics to serve the elderly. The above figure illustrates how companies and research organizations from the three regions will combine their strengths in the embedded and wireless systems into joint research that can lay the ground for new, technologically advanced healthcare products. ElderCare, the first of these efforts, aims to improve the potential for better quality of life for elder citizens through enabling technologies, including embedded software systems and architecture, wireless sensor and other systems and design methods and usability. Enhancing self-care and preventative efforts also includes safety and security at home, cooperation and services monitoring health, medication, transportation and mobility and social awareness. This project, the first of many, provides a unique opportunity to promote a key feature of the innovation alliance: combining social science and technology research to generate real applications and policy prescriptions.

A second possible focal area, learning, combines the search for a better understanding of the learning organization, learning as a business and actual products that constitute “Tools of Thought.” The three regions are faced with meeting the learning challenges of the knowledge-based economy and at the same time becoming global leaders within the industry of learning.

The third area of focus is of utmost importance to the three regions: food/food processing. This cluster will take a deeper look at what constitutes health food as well as define a variety of agro-food chains and the role of embedded systems in food and food processing. For example, how do the regions develop a generation of health food products that may contribute to increased health and wellness and disease prevention? Again, there are a wealth of opportunities for the regions to collaborate and learn from each other.

IV Conclusion: Guaranteeing Innovation by Learning from Others

The Alliance partners are well situated to learn from and assist one another. Leveraging the combined strength of the three research teams, the Alliance will prove instrumental in developing a policy-oriented innovation strategy and actual innovative technologies that will guarantee the prosperity of these experimental economies in the coming decade.

APPENDIX:

Conferences Held:

Planning and Development Meeting, August 5, 2004

Prime Minister's Office, Helsinki, Finland

- *Strengthening Competence and Openness – Finland in the Global Economy: Interim Report I (Unofficial Translation)*
<http://brie.berkeley.edu/~briewww/research/innovation/Finland%20report%20-%20final.pdf>

Innovation Alliance Conference, August 23, 2004

University of California, Berkeley

- All papers and agenda can be accessed at
<http://brie.berkeley.edu/~briewww/research/innovation/index.htm>

Danish Innovation Council, October 26, 2004

Monday Morning, Copenhagen, Denmark

- *Innovation Monitor: An Assessment of Denmark's Innovation Capacity*
<http://brie.berkeley.edu/~briewww/research/innovation/InnovationMonitor%20Final%20Engl.%20Version.pdf>

Organizations Involved:

Finland:

- ETLA, Research Institute of the Finnish Economy: <http://www.etla.fi>
- Prime Minister's Office: <http://www.vnk.fi>
- TEKES, National Technology Agency of Finland: <http://www.tekes.fi>

Denmark:

- DAIMI, Department of Computer Science, University of Aarhus: <http://www.daimi.au.dk/>
- FORA, Danish Ministry of Commerce Research Unit: <http://www.foranet.dk>
- House of Monday Morning: <http://www.mm.dk>

Bay Area:

- Bay Area Economic Forum: <http://www.bayeconfor.org>
- Gordon and Betty Moore Foundation: <http://www.moore.org>
- Semiconductor Association: <http://www.sia-online.org>
- University of California, Berkeley: <http://www.berkeley.edu>
 - BRIE, Berkeley Roundtable on the International Economy: <http://brie.berkeley.edu>
 - CITRIS, Center for Information Technology Research in the Interest of Society: <http://www.citris.berkeley.edu>