Report on

Think-in

Department of the Taoiseach June 21.st

"Dublin in the Knowledge Age-Creating the Worlds Most Intelligent City."

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Structure

The think-in was a morning event from 9.0 am to 1.0 pm.

It was chaired by Ms. Miriam O'Callaghan RTE.

The opening talk by Ms. Mary Hanafin, Minister for E Government.

There were presentations by

Professor Luc Soete. Director Merit Institute, Maastricht, Belgium.

Dr. Chris Horn. Chairman Iona Technologies.

Mr. Philip O Connor. Director Dublin Employment Pact.

Participants.

There were 32 invited participants-from Central and Local Government, Government development agencies, private and public sector businesses, education, trade unions, community sector.

Context.

The context of the think-in was that there is a new information based economy emerging globally. This economy is fundamentally different than the earlier industrial economy. The sources and nature of employment will be more knowledge and relationship intensive. Any realistic strategy on employment for Dublin in the future must be based on an analysis and understanding of what this knowledge economy will mean for jobs and skills. The think-in was organised to bring attention to this transition in employment and the economy and to identify initiatives which could be taken to prepare Dublin for this change and ensure it becomes a world-leading city in knowledge creation.

"A new type of society is being formed. These new societies can be labelled post-industrial to stress how different they are from the society that preceded them. In this society economic growth depends more directly than ever on knowledge and hence on the capacity of society to call forth creativity. Knowledge, its development and dissemination have become the basis of business in society. In industrial society the economic base was seen as manufacturing industry and derived its wealth from its ability to produce marketable manufactured products. The economic base and organising principle of this emerging society is knowledge /information. Knowledge is the resource and the product which is traded". (Alan Touraine, French Sociologist)

"Industrial society is the co-ordination of machines and people for the production of goods. Post-industrial society is organised around knowledge for the directing of innovation and change"
Daniel Bell, Post Industrial Society

Opening.

The think-in was opened by **Ms. Patricia Potter,** Chairperson of the Pact who welcomed participants on behalf of the PACT.

She invited the Minister of State for E-Government Ms. Mary Hanafin to give opening address.

Minister Hanafin opened her talk by congratulating the Dublin Employment Pact and everyone involved with the organisation of the meeting and hoped the interactions would be fruitful.

She expressed the view that the important thing about the information society was to clarify and specify what this means in practise for ordinary people and to ensure that this new technology is available for people in ways that are of use to them and involves them rather than alienates or frightens them.

The Minister felt that that there was considerable confusion about the meaning of the knowledge society and that it would be a great service to all if the meeting could clarify what is meant by the term. It is important that we take as much mystery out of the term as possible and also from the technologies so that people are inclined to use the technologies to reap the benefits for themselves and the society. A real measure of us as a society in relation to the information society will be the degree this technology is used to benefit the lives of the people in their everyday lives.

Presentations.

The first presentation was given by **Professor Soete** who gave an overview of the theoretical context of the knowledge economy. His presentation focussed on the distinguishing characteristics of the knowledge age under 4 headings.

1. The Emerging Digital/Knowledge Economy

2. The Systemic Features of Knowledge Creation and Diffusion.

3. The Local/Regional Growth pattern in Europe.

4. The Impact of ICT on Regional/Local development.

1. The Emerging Digital/Knowledge Economy.

The presentation began by outlining the process of transformation from an industrial economy to a knowledge economy.

In the industrial economy machines made machines and in knowledge economy knowledge makes knowledge. Information is the raw material of the knowledge economy. Information and communications technology and the resulting creation of the Internet enables the sending of information without any loss of energy which is very different than the industrial system where transmission of electricity involved loss of energy over distance transmitted. This put geographical limits and constraints on the system and the process of production. With the Internet, and the nil loss of energy, the geographical constraints on the use and transmission of information is removed. The result is that distance becomes irrelevant and there are no physical limits to the production and communication of information-"any place any where information is in the air." This is resulting in a truly global economic production process which operates on 24-hour time zone.

2. The Systemic Features of Knowledge Creation and Diffusion.

Professor Soete pointed out that Ireland has come through the catching up phase in terms of economic development relative to mainland Europe. That was relatively simple. It now faced a much more serious challenge as it will have to maintain development as a developed European Economy. It also would have to depend less on transfers from Brussels and on FDI from USA and become an innovation rather than investment driven economy in creating its own products and markets.

 In creating this innovative driven economy the focus should be a clear recognition on the systemic nature of innovation rather than focusing on separate and specific aspects or separate firms. Innovation is a systemic process. He presented a number of detailed diagrams outlining the European innovative systems, the components of this system and the relative position of Ireland in these.

He suggested that in Ireland there should be a national integrated approach to innovation, which should be benchmarked under 4 headings.

a) The levels of social and human capital.
b) Research Capacity
c) Technological and Innovate performance
d) Absorptive capacity of the society to absorb new ideas and translate them into product.

 He made the point that just increasing the expenditure on research, as is happening in Ireland at present, may not produce any benefits other than raise the salaries of researchers if the economy and society cannot absorb ideas produced.

3. Regional Knowledge Landscape in Europe.

He outlined the reality of regional knowledge creation systems in Europe. These knowledge regions and networks were changing the physical map of Europe with these new growth poles replacing the older industrial growth centres and maps.
He gave detailed analysis of the regional innovation systems operating in Europe- a mosaic of regional growth poles with a network of so called motor regions-
Baden-Wurttemberg, Rhone-Alpes, Lombardia, Catatonia which are hubs of this innovation process.

The question for Dublin and Ireland is where they fit in regional networks of innovation.

4. Local and Regional Growth Patterns in Europe.

In relation to the effects of ICT on regional and local developments he pointed out that, despite the potential for dispersal and decentralisation of working patterns that the new technologies offered, in practise what is happening is a new centralising and concentration of economic activities. There are new concentrations and clustering of activities- membership of these clusters is very important for individual firms and the growth of these clusters is very central for the well being of regions, cities and countries. Cities which will prosper will be integrated into the networks of cities and regions which are centres of these new growth clusters.
"The more globalized the economy becomes, the higher the agglomeration of central functions in a relatively few sites, that is the global cities."
Saskia Sassen-The Global City.

The second presentation was given by Dr. Chris Horn, Iona Technologies.

Dr Chris Horn began by pointing out that we in Ireland had a national propensity to innovate and gave examples of innovators in music, literature, and soccer. This natural propensity to creativity which involved sharing learning and co-operating is a resource for the innovative society now emerging.

He described Irelands economy as the worlds most open economy in which exports make up 88% of GDP. Over the past 20 years the economy has gone from being high Quality, Low Cost, Medium Technical Competence to one of High Quality, Medium Cost ,High Technical Competence and High Reputation.

As a result of these changes in wages and the globalisation of production, we are now faced with the reality that much of our industry will not be sustainable as it cannot compete with countries in Eastern Europe and Asia, particularly China. In China manufacturing costs are 5% of ours and there is highly developed information technologies infrastructure and transport infrastructure. This will require big changes in our industrial and employment policies.

He felt that we are not sufficiently aware of this situation and the serious consequences it will have if we do not act quickly to change our policies and strategies on our role in the global economy.

He made two proposals in relation to this

E-Logistics Command Centre.

One way of positively relating to this process he proposed was to move from Ireland being a centre of manufacturing to make Ireland the global logistics organising and outsourcing centre for labour intensive manufacturing to East Europe and China. We should become a centre for the management of global production systems managing the global production and distribution of products and services, managing the production process in the most cost effective and productive parts of the globe and manage the distribution onto different markets.

Centre for Collaborative Research and Exploitation.

The other initiative he proposed was making Ireland a world leader for innovation and design and a high skilled centre; to achieve this it needs to become a world leading Centre for Collaborative Research and Exploitation.

He proposed two categories of **Research Centres –Basic Research Centres and Applied Research Centres.**

The basic research centres will be funded by the State. They will have full time staff. These are in the process of being established by the Science Foundation of Ireland.

The Applied research Centres would be funded by companies through membership fees and through supplying equipment. Companies could benefit from the research carried out.

He felt it was important that we distinguished between education and research.
He pointed out that Europe in general is good at science but poor at commercialisation the results. We need to build businesses models on commercialising research.

There is also a problem in Ireland of competition between Universities for research, which he felt, is very wasteful and should stop. This should be replaced by more co-operative ways of working between the Universities.

There is also a serious problem in relation to innovation and developing new products in Ireland caused by the very small market in which to test out new products.

The third presentation was given by Mr. Philip O Connor, Director of the Dublin Employment Pact on Why the Seminar.

Philip pointed out that the Pact views Dublin as Irelands sole Metropolitan centre; it is not just another region of Ireland. Dublin is the key economic driver –the economic engine -of the whole economy of Ireland - over 80% of financial services and software companies in Ireland are located in Dublin. Dublin accounts for 40% of total national Gross Value added. Encouraging the growth of Dublin economy should not be seen as at the expense of the rest of Ireland as is the present conventional thinking but should be seen as benefiting the rest of Ireland –what is good for Dublin is good for rest of Ireland.

Dublin has to compete as a city in a global context so it is vital for the development of Dublin and accordingly for the rest of Ireland that Dublin is at the front of technologies, skills and infrastructure needed for the knowledge age. This is a central issue for the think-in to identify the initiatives which will ensure Dublin is a global leader as a knowledge city. However it is recognised that equally important for the effective development of cities is that their development is a socially inclusive process and this is the other theme which concerns the Pact in relation to the development of Dublin and which the think-in should focus on.

Philip outlined a number of initiatives which the Pact had organised in relation to developing this coherent and new strategic perspective on development for Dublin and Dublin role in Ireland.

These were:

Drafting a discussion paper entitled **Marketing Dublin for Inward Investment.** Publishing of a report commissioned from Goodbody Economic Consultants-**Social Investment for Disadvantaged Areas in Dublin 2000-2006:**

Publication of a report commissioned jointly with the Dublin and Mid East Regional Authority **Analysis of the Economic and Social Profile of the Greater Dublin Region;**

Holding **Conference - "Doubling Dublin-Dublin in the Global Economy**." which was addressed by world leading experts on globalisation and cities. This Conference he felt had a major impact on thinking with regards to the future of Dublin.

These initiatives formed the context of the think-in.

The aim of the think-in he outlined was to concretely identify the key issues for Dublin in the Knowledge Age and tease these out in discussion within a representative gathering of key interests and expertise in the city. The pact is concerned with the employment needs of Dublin and the need for Dublin to be

strategically placed in the global economy in the 21st century and this think-in should help this process.

The Pact wanted to have the economic and social developments of Dublin go together-to create an affluent and socially inclusive city. The Pact was concerned that the development of the knowledge economy was not happening in an inclusive way-broadband access is developing in a very restricted way and e-access by communities and individuals is not getting high priority; e-learning and ICT access are very limited for most of the population of Dublin.

He pointed out that the average public primary school in Dublin might have two or three computers for hundreds of children while comparable schools in the USA have achieved a ratio of something like one computer to at most every three or four pupils. He hoped the think-in would not lose sight of these issues.

Discussion

The discussion did not have a specific agenda of points to be addressed by participants as the concern was to draw out the thoughts, initiatives and concerns which participants and their organisations had in relation to Dublin in the knowledge age.

 The form of the content of the discussion and participation was guided by Miriam O Callaghan. While many of the inputs by participants represented the position of their own organisations a number of themes of general concern clearly emerged. These were.

1. Education.

"An economy in which knowledge is becoming the true capital and traded wealth makes new demand on schools for educational performance. Many of the traditional disciplines of the schools are becoming sterile if not obsolete. We must face changes in what we learn and teach and indeed in what we mean by knowledge. There must be serious discussion of the social purpose and responsibility of education in the new reality of the knowledge society".
Peter Drucker-The New Realities.

Education was seen by many participants as a key issue in the move to a knowledge society.

Participants felt there are serious problems arising in relation to education and its relevance for the knowledge age .A number of participants pointed their experience of a shortage of workers with adequate engineering and science training. One company reported they had to import 75 of the 80 engineers they recently employed. This was seen as potentially very damaging for attracting inward investment in the future.

The drop in numbers of young people studying science was seen as very worrying trend which needed firm initiatives by Government. There was a need to start the change in primary schools and continue right through. Science should be introduced at earliest levels and given more status. The methods of teaching should also be made more interesting and students should be made aware of the contribution science makes to improving the standard of life.

A challenge which science faced, according to Professor Soete, is that it requires hard and long commitment and the young people are not prepared for this as they can get more money easier in other sectors. One suggestion he made was to pay science teachers more money than teachers of other subjects-for example music.

A number of participants developed the point that the challenge we had was to develop education which strengthened and rewarded children's creativity abilities and skills. Jerome Morrissey of the National Centre for Technology pointed out that the real issue was not related to technology in the classroom or the teachers but to the learning/teaching paradigm which is in our method of education. We needed a different paradigm of learning which created learning environments. We need to create learning laboratories and put innovation at the front of the education process. Bill Reilly of Intel saw a need for a greater variety of learning experiences to move the whole country forward.

Loughlin Kealy, UCD School of Architecture felt that in creativity, people need to be able to harness their sensory as well as their intellectual abilities and these sensory abilities are not developed in our present education and the education system, at second level at least, is a mediocre preparation for the challenges brought by the digital age.

David Connolly of Inner City Partnership expressed concern in relation to the loss of potential from the large numbers dropping out and felt we needed new initiative to involve those dropping out to create knowledge and apply their knowing in productive way and benefit from this emerging economy.

Una Halligan of Hewlett Packard supported this point with the view that what was important was not the issue of creating the worlds most Intelligent City but to ensure that all children have the opportunity to be actively involved and skilled for this information society.

Joe O Toole ICTU felt that a major problem we faced in developing a more innovative economy and society is the fact that children are educated to absorb and regurgitate facts and the people who get rewarded are the ones who are best at this rote learning.

A number of participants made the point that our future depended on people being able to create and innovate, not on ability to passively absorb and reproduce information-computers can do this better than we can and education should be transformed to develop the skills, attitudes and ways of being creative. Children should learn to deal with failure, as this was part of innovative and creative living. The lack of space for children in the education process for children who thought differently was very worrying and was something which needed attending to in schools;appreciating difference and diversity was at core of creative awareness and should be taught to children from earliest years. The rote system and the conformity type of awareness inculcated by schools were obsolete.

While creating jobs by attracting new inward investment was obviously important, some business participants felt there was a need for more effort by Government agencies to ensure that companies already here stayed here and kept the workers they have. More active support was needed to help these companies upgrade workers skills and create new products and services.

2. Linkages/Research/Innovation.

Research and Innovation were seen as other key aspects in creating the infrastructure for the knowledge economy. Developing a strong system and awareness in relation to innovation was seen as critical to the future. This system of innovation should extend into all aspects of the economy and society. The quality of our researchers and our innovation systems will be at core of creating employment in the knowledge

industries and in attracting knowledge based inward investment. Building the innovative and research culture and capacity was now the urgent national challenge. We needed a shared understanding of the nature and definition of innovation. We tend to think of innovation only in terms of technologies while innovations in the social organisation of society are as important as any technical innovation. Applying technical innovation in society require changes in regulations, in skills, in organisational structures.

The Science Foundation of Ireland and the Higher Education Authority, both of which were represented at the meeting, have substantial state funding for research in third level facilities.

Dr. Chris Horn pointed out that we should distinguish between education and research. Research should be seen as separate activity than education. However Dr. Ferdinand von Prondzynski felt that the Universities should become more responsive to Dublin's labour market needs.

Dr. Bill Harris, Director of the Science Foundation of Ireland, felt it was important that we learn how to create environments which support research like Stanford and Cambridge. This will have to be learned it will not just happen; he is involved in discussion process with colleges and businesses to make informed judgement on the spending of Government research money which he is responsible for. Some participants felt that the process of providing resources for research was moving too slowly as the situation in relation to lack of research was very serious-too much time is being spent on discussions about the research and the urgency is for action.

The Sixth Framework Programme of the European Union which begins in 2003 would also be important source for finding and for network of relationships.

3. Collaboration/Competition.

A striking impression of the standard of the overall discussion in the meeting was the lack of interactive communication between participants, with each presenting their own organisations view, independently of previous comments.

This mirrored a theme which a number of participants focussed on –the lack of collaboration and communication between Government Agencies, between these Agencies and Businesses and between the companies both the multinationals and the indigenous ones. There is also the lack of co-operation between colleges and the local authorities.

The general organisational culture seems top be one of organisations maintaining very tight boundaries and a culture of competitiveness towards other organisations and general lack of culture or skills in collaboration between organisations - each organisation exists in its own reality being very closed to outside with very tight boundaries. This will be very damaging for future employment creation.

The reality is that Ireland is a very small place and we will need all the creativity and resources we have to survive and prosper in this global based economy-our ingenuity will have to overcome our lack of scale. Sharing resources and open communication between organisations will be an essential part of building a new type of competitive advantage in a world where economies will require flexibility, rapid change and continuous innovation, the ability to see and respond rapidly to opportunities will be key skills. Our small size and the physical proximity of everyone can be an advantage in facilitating this flexibility but only if there is very effective and active communication and co-operation. Organisations with very closed boundaries and poor listening skills or commitment to innovation are not effective learning systems - they were suitable for a world where maintaining an inherited way of doing or production of inherited product was the task.

The knowledge based society is one of continuous change and we will need organisations which are open to new ideas and information and which respond rapidly to change. This culture of openness and change needs to permeate the whole culture.

This closed and competitive organisational culture is very worrying for a learning society in which the key skill for organisations is openness to new information and a key skill for the society is the ability of its organisations to cooperate and share resources, skills and information. Mr. Colm Butler, of the Department of the Taoiseach, expressed the need for organisations to collaborate as a major national

challenge-"doing right by the citizen" rather than being concerned only with their organisation as now. The obsession with competition needs to be balanced with the co-operation. The energy which is wasted in competition in Ireland means resources are not available for new creativity or competing with rest of world. Michael Gibney of Trinity College pointed out that this cooperation needs to also take place within Universities between Departments which at present operate very separately and competitively; cooperation was needed across the boundaries of the different sciences and we need inter subject cooperation for research projects.

4. Dublin/Ireland.

There was a disagreement between participants on the issue of dealing with Dublin as an entity in itself and those who felt that Ireland is too small to be dealt with in parts and that we should focus on the Republic as one unit.
Philip O Connor emphasised that Dublin is the motor of the Irish economy and its development needs to get primary attention to become a world leading Knowledge City.

Peter Finnegan of Dublin City Development Board emphasised the development of the City Council website as being an important resource for the city. John Fitzgerald expressed desire for more active interaction and communication between the different organisations operating in Dublin and the City Council. A particular area was the failure of the Universities to engage in discussion with the City Council.

There was a general concern that Dublin and its preparation for the Knowledge/Digital Economy and society needed special attention in ongoing way as a global city.

"I posit the view of the possibility of a systemic discontinuity between what used to be thought of as a national growth and the forms of growth evident in global cities since the 1980s. These cities constitute a system rather than merely competing with each

other. What contributes to growth in the network of cities may well not contribute to the growth in nations."
Saskia Sassen-The Global City

5. Digital Divide.

A number of participants drew attention to the digital divide between Ireland and other countries and also within Ireland. Concern was expressed at the lack of provision of broadband and DSL in Ireland and the high costs of accessing Internet in Ireland. We have lowest provision of broadband in OECD. The level of use of Internet is also very low and has stalled at 30%. Philip O Connor pointed out that Ireland has very low numbers of computers in schools in relation to student numbers and compared this to USA- "The average national school in Dublin may have two or three computers for hundreds of children while comparable schools in USA have achieved a ratio of one computer to every three children".

There is need for more urgency in dealing with these issues to get wider public realisation that we are in this knowledge based digital age and we are falling behind in Europe. We also have growing a digital divide within Dublin and Ireland - that lack of e-literacy and access to new technologies is creating serious social exclusion.

 There is urgent need for action by Government to upgrade the availability of broadband to organisations and for communities, particularly poorer communities, to get lower costs for internet access, to improve e-literacy and the availability of computers in schools and community centres. There is need to ensure that everyone of all ages have access to digital world-if we put services on line and people do not have the literacy or the technology to access these services then the results can be even worse than the previous situation in terms of exclusion.

The Digital technologies open new possibilities in relation to the organisation of the economy and society. However this does not automatically mean that this enables the people of Dublin to have better lives. New technologies do not of themselves create better living standards or egalitarian societies. Values have to be integrated into the process of managing these technologies and their application in society.

"The force of technological change sets the challenges which society has to face; but there is nothing inevitable about the way society then orders itself. Technological change is paradoxically villain and hero; on the one hand destroying jobs and firms and entire industries and ways of life; on the other creating vast new opportunities ands solving intractable problems of urban society."
Peter Hall-Cities in Civilisation.

Closure.

There were a few brief closing remarks from Mr. Paddy Walley . He gave the foundation for his thinking of this process as the old idea of Ireland as island of (saints) and scholars which can be a competitive resource in the learning society now emerging globally.
 He congratulated the Pact on being open to this idea and gave this as example of the type of learning organisations we will need for the future learning society.

The meeting was closed by Ms. Miriam O Callaghan.

Future Initiatives.

Participants felt that the issue of the think-in was very important and should be developed further. A practical suggestion for continuing the debate would be for the Dublin Employment Pact to manage a web based debate around the issue of the challenges involved for Dublin in the Knowledge Age - Creating the Worlds Most Intelligent City.

Government

1. Colm Butler, Head of Information Society Unit, Department of the Taoiseach
2. Eileen Kehoe, Principal, Social Policy Unit, Department of the Taoiseach.
3. Roger O'Connor, Director of Business and Technology, Department of Public Enterprise

Education & Research

1. Ferdinand von Prondzynski, President, Dublin City University
2. Owen Lewis, Dean of Architecture and Engineering, University College, Dublin.
3. Loughlin Kealy, Professor of Architecture, University College, Dublin
4. Fergal Costello Head of Policy and Planning, Higher Education Authority.
5. Joyce O'Connor. President, National College of Ireland
6. Bill Harris, Director, Science Foundation of Ireland
7. Michael Gibney, Dean of Research, Trinity College

Companies

1. Bill Reilly, Head of Public Affairs, Intel
2. Soula Evans, Director, Business & Product Portfolio, Eircom
3. Una Halligan, Public Relations Manager, Hewlett-Packard
4. Rosanne Kelly-Head of Investment Funds, Irish Stock Exchange
5. Michael Daly, Director of Global Services, IBM
6. Gerry Fahey, Director of Strategy , Vodaphone.

7. Aidan Ryan, Maguire McClafferty, Solicitors
8. Tom Haughey, Director of Strategy, Aer Rianta.
9. Susan O'Donnell, Models Research

Statutory Agencies

1. Declan Hughes, Manager, Infrastructure Enterprise Policy, Forfás
2. Eve-Anne Cullinan, Director of Executive Services, Digital Hub
3. Jerome Morrissey, Director, National Centre for Technology & Education/Digital Hub
4. Patricia Potter, Director, Dublin Regional Authority.
5. Eamon Sheehy, Education & Skills Research Division, IDA
6. Michael Kenna, Digital Media & EBusiness Education, Enterprise Ireland
7. Tony McQuinn, Comhairle

Local Authorities

1. John Fitzgerald, Dublin City Manager
2. Peter Finnegan, Dublin Development Board.

Partnership

1. David Connolly, Manager, Dublin Inner City Partnership.

Unions

1. Joe O Toole, President, Irish Congress of Trade Unions

Employers

1. Michelle Quinn, Executive, ICT – IBEC
2. Declan Martin, Director of Policy, Dublin Chamber of Commerce