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Digital literacy and ICT competence

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A changed economic environment: do we still need to worry about e-skills?

I have spent the last 10 years arguing for measures to enhance European competitiveness: for measures that would enable European business to innovate in face of challenge; and for development of our education and training systems to meet the needs of a global, competitive and fast changing world.

The past year has challenged many of our economic assumptions.

For tomorrow, all bets are off. The only thing certain is that we are in a long, deep recession.

Even if policy for the real world of business, innovation, jobs and the skills and education that they need, is not made for , banksters, we need to make a sober assessment of the real situation and review our policy in that light.

In my view, the policy concern that we expressed when we brought forward when the European Commission adopted its communication on e-Skills for the 21st Century still apply. Indeed, if anything it is now more pressing.

The Commission's assessment in its communication was that there was a high risk of shortfall of some half-a-million people with advanced ICT qualifications.

Although the bursting of the bubble and the economic recession may have brought some change to the labour market, the shortages, gaps and mismatches are still there.

Since 2000, the supply of ICT graduates has been in serious decline.

The British experience highlights two striking figures.

- 1) Since 2003, the number of students taking advanced computing courses has dropped by 50%.
- 2) Applications for places to take ICT degrees have halved in 5 years. Less than 1 in 10 of those following ICT courses is a woman.¹

To what is this lack of interest attributed:

- To negative images of the teaching of ICT.
- To doubt as to whether a career in ICT is really interesting.
- To curricula that fail to inspire?

I can cite family experience in support.

My own son took a bachelor's degree in computing and business. He went on to take a master's in design. He now says that his only regret was to have followed the computing courses, which he described as dull and uninspiring, teaching things that he would have been able to pick up later in the normal course of events.

Today he is making a career in the fashion business. And I have heard how companies in that business, some of them household names, seem to have done little more than to nod at changing their business models to make full use of ICT. The reason? Certainly

¹ Figures cited in the New York Times of 10 November 2008, by Karen Price, CEO e-Skills UK.

part of it is that dialogue between computer specialists and managers is inhibited by lack of skills.

If, in Europe, we are falling farther behind in e-skills, we should beware. Our trading partners are less dilatory. Perhaps it is because the prospects of a bonus-rich banking career have diminished, but we read of increasing enrolments for computer science courses in the US.² Enrolments for courses in US universities are up by over 6% in 2007. Interestingly, this is not just for undergraduates, but also for PhDs in computer science.

Even as we plunge into the worst recession that any of us can remember and as job prospects darken all around, we still cannot meet the demand for e-skills.

For those worried about their employment prospects, it is a call for serious reflection.

The European e-Skills Agenda

The problem of delivering the needed supply of e-skills can be met by European action alone.

The biggest responsibility lies fair and square among the Member States, to ensure that the presentation, teaching and training, curricula and image for ICT studies and qualifications are adapted to the needs of the situation. It is primarily at the national level that pupils and students can learn the strong reasons for following such courses and acquiring e-skills.

At European level, it is more a question of background and co-ordination than of detailed delivery.

But there are a number of important points at which we need to work together at European level. I want to highlight 3 of these, on which useful progress is being made.

1. The development of **multi-stakeholder partnerships** has been an important step. The temptation to neglect co-operation is a bad one. It would only undermine the efforts of individual stakeholders.

The challenge is to ensure sufficient co-operation between the many stakeholders in the field so that their actions pull together and do not pull apart.

The establishment of the **e-Skills Industry Leadership Board** was an important step to ensure that industry puts its weight behind this work.

2. An important technical step has been achieved with the adoption of the **European e-Skills Competence Framework, e-CF**. This is a co-operative achievement in which all the main groups of stakeholders were represented.

This enables employers to specify their staffing requirements in terms that can be understood across the EU in terms of commonly defined areas, competences and proficiency levels.

Let me pause for a minute on this admirable piece of work, on which there has been very broad co-operation.

The e-CF identifies 5 ICT business areas. These relate to the planning, building, running, enabling and managing of ICT business.

² Article in the Financial Times, 17 March 2009, by John Markoff.

32 ICT manager and practitioner competences are identified and classified according to which competence area they relate to.

5 proficiency levels are in turn specified and applied to these competences.

Guidelines have been developed for the use of the e-CF.

The e-CF is, in turn, related to the European Qualifications Framework. For the moment it is compatible with it as regards formal qualification. But the EQF also provides for the recognition of competences that are acquired informally or non-formally. Work to enable the e-CF to be fully compatible on this point, too, is in hand.

By achieving this technical reference framework, the sector has been provided with a tool to enable common understanding of the requirements of different employers and the delivery of learning outcomes by different educational and training providers.

A common understanding of what is required by a job needs to be matched by common understanding of learning outcomes achieved in different courses – what an individual knows, understands and can do. These are in turn attested to by different qualifications.

The e-CF is an important step towards increased transparency in the ICT job and skill market.

When I was chairing the E-Skills Forum in Thessaloniki in 2006, I asked a distinguished panellist what single achievement would be most significant in progressing the e-Skills agenda. He answered, adopting the e-CF.

We are there! Significant progress has been achieved.

And there is more in the pipe. Because work is in hand, led by INSEAD, to develop European e-Skills Curriculum Development Guidelines. This work should report by the end of 2009 and will be another important step.

3. There has been serious progress towards making information on skills and careers in ICT more readily available across Europe, by the development of a **European e-Skills and Careers Portal**.

This is already operational in pilot and, if all goes according to plan, should be fully operational in 2010.

30 ministries of education have been working together to get this project off the ground, along with ICT companies. But I want to express particular pleasure at the way the European Schools Net has participated.

Now we need awareness raising, so that this resource of information about competences, skills, jobs, careers and opportunities can be used to the best effect.

I have said nothing about the important technical studies that are in hand or achieved. That is not because they are unimportant, but because I have to select.

E-Skills looking Forward

Whatever the economic outlook, we need competitiveness to provide jobs and economic opportunities in the EU.

Whatever the economic outlook, innovation is one of the keys to competitiveness.

Innovation is achieved by the interaction of someone who sees an economic opportunity and someone who can see the technical solution to meeting that opportunity. It is about a solution meeting a need. Not just solutions, not just needs, but the interaction of the two.

That interaction presupposes the possibility of *dialogue*.

For innovation is more than just opportunity meeting technical solution. It is about the sustained interaction that enables a fully developed economic market to be satisfied by an equally developed capacity to deliver goods and service in a way that meets the needs of that market and that is commercially sustainable.

When an entrepreneur sees a business opportunity and finds a technician who can show her how to meet that opportunity, there is already the scope for innovation.

But more is needed. There needs to be real interaction between the market need and the technology, between production and delivery. That interaction needs *dialogue*. If dialogue is real, it creates *surplus of meaning*.

This may seem abstract. Let me explain.

Meeting a market opportunity is much more than a business decision. It is a narrative, a story of needs and their fulfilment in a commercially sustainable way. A narrative that draws in players, so we can say "I see myself in that story."

But the riches of that story does not just lie in market delivery. It lies in technical development. It lies in production management. It lies in management of finance and human resources.

Enriching the narrative comes about by human interaction between the different players in a project. What they can achieve by their dialogue, by the telling and retelling of their narrative, their story to each other is to increase its meaning, its real potential, by far more than any one could achieve alone. Dialogue generates meaning.

A necessary condition for *dialogue* is a *common language*.

Of course, that can be English or French or Latvian or whatever.

But language is also technical. For there to be a possibility for dialogue, the marketing manager must be able to speak with the engineer and with the production manager in a language that they can understand.

That may sound abstract, but it is not. A marketing woman may see certain features to an economic opportunity, but dialogue will open and enrich that understanding and take it beyond what either one or other could have seen alone.

One of the key areas for innovation, as we all know, has been in ICT. And we are also convinced that ICT remains crucial for many innovations that are to come. The capacity of the players in the market to dialogue effectively is crucial to harvesting the fruit of such innovation.

That is why the availability of key ICT skills is so important for the future of Europe. For ICT skills and competence constitute a language of dialogue. They do so just as much as do English, Swedish and Italian.

The challenge is often to speak in a language people can understand. Others have spoken of simplifying a process. The strategy of painting, of which I have understood a little while in Florence, is to reconstruct reality on the basis of a limited optical

alphabet: it yields more by handling less³. It is the opposite to an unskilled photograph which captures everything, but yields nothing: a line drawing by Picasso yields far more. Why? Because it engages the viewer to fill in the detail.

If only the technocrat speaks ICT, there will be no dialogue with management, with marketing, with finance. If there is no dialogue, there will be no surplus of meaning, no value added, by the listener or the reader. If I cannot “speak ICT”, I will not even be able to talk to my children!

That is why ICT skills have repeatedly been identified as a critical link in the chain of competitiveness and innovation for the European Union.

Can I comment on what seems to me to be the tragedy of the universities. They talk about ICT and about innovation: but their own business models largely fail to take ICT on board except as regards elementary applications like handling registration. Where are the new teaching tools, the distance learning systems, the interactive learning programmes? I conclude that part of the problem is the inability for the class of rectors to talk to their own ICT specialists: they do not speak ICT!

e-Skills for the 21st Century

Although the world has changed since *e-Skills for the 21st Century* was adopted, the European e-Skills Agenda can be seen to have been well conceived.

That is because European e-Skills Agenda was not just useful for the period of economic growth that was anticipated when it was adopted, and which seems to be slipping away from us. It also turns out to have been well-conceived for a period of economic difficulty.

Skills that are needed in good times to deliver new products and services are needed also in bad times, to deliver products and services more effectively and more efficiently.

Experience teaches us that there is an element of luck in economic opportunity (or at least, that economic opportunities are not all foreseeable). Those who are prepared are rewarded. So it is important to be fully equipped and ready to exploit whatever economic opportunity may arise. Irish experience is instructive: sustained training efforts through years of economic difficulty enabled it to exploit opportunity when it arrived.

Nothing suggests that ICT will cease to be a major driver of innovation and competitiveness. On the contrary, we can be sure that it will be in any phase of economic development that we can envisage. Innovation, that enables firms to prosper in the boom, also enables them to survive in times of crisis.

The momentum of the e-Skills agenda must be maintained and re-inforced. The results so far are encouraging. We must keep our eyes on the ball.

³ Paul Ricoeur *Interpretation Theory* provided this neat summary.