

# Creating an Innovative Europe (the “Aho Report”)

The Aho report highlights that the EU countries only spend 2.7% GDP on ICT compared to 3.3% (US) and 3.4% (Japan). The report identifies a net flow of expertise from the EU to the US – a major challenge for the EU is to increase the proportion of GDP spent on ICT and to reverse this trend. Europe has huge strengths in enterprise IT but is also well-placed to take a leadership role in other areas such as ICT in environment, healthcare and digital media – this would argue for an increased spend on The Internet of Things and 3D-Internet.

The report also correctly identifies European world leadership in a number of areas from both the main Framework programme and also the Future and Emerging Technologies stream. One noticeable omission is the area of high integrity software – faulty software contributes to the unreliability of the products in which it is embedded and is a source of significant recurring costs and delivery delays. Leading researchers in the UK, France, Germany and the US have recently launched “The Verified Software Initiative: A Manifesto”, a bold vision for a fifteen year programme in this area. Although the Aho report identifies parts of the telecoms spectrum as European strengths, it could be argued that we have strengths across the whole spectrum from silicon photonics through to value chain engineering. It is important that the correct policies are put in place to enable us to consolidate and sustain our lead in these areas. For example, in the case of high integrity software, software companies should carry liability for errors, including for direct consequential damage from, for example, egregiously poor development practices such as buffer overrun errors. Then the market (through insurers) will drive the development and use of better methods and tools.

Innovation typically happens through small companies, but the important contracts are often so large that these companies cannot bid in a credible way. So, although Europe has many of the best small companies for doing dependable software development, a market failure is blocking them from competing effectively and growing. EU procurement rules actually make this worse, because the rules motivate public sector organisations to place fewer, larger contracts. We need a mechanism that makes it easy for an ICT contract to be let in two tranches, one for the architecture and one for the development, with the architecture part not subject to the lengthy procurement rules, so long as the bidders are SMEs.

Whilst there may be some questions over whether Joint Programming is relevant to the ICT area, there are an increasing number of bilateral agreements between national research councils which allow money to follow the researcher. This kind of agreement enhances the mobility of researchers and thus facilitates the creation of critical mass “clusters of excellence”.