

EU Strategies for Research and Development

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1. Introduction

The purpose of this paper is not so much to describe the EU directives and Regulations, i.e. the tools that Brussels has designed in the field of research and innovation, as to go upstream and discuss the problems so as to understand why certain objectives and tools have been set.

The central point is that of industrial mutation. The debate on industrial mutation is a lively one, one that worries the European Ministers and a problem that is on the agenda of all Councils.

It is interesting to notice that in this decline there are some really worrying, but also some encouraging symptoms.

The three worrying symptoms are:

- the loss of foreign markets; Europe, which is the first exporting area in the world, still holds this position, but it has lost some market share;
- the loss of jobs, mainly due to the relocation of production;
- excessive automation of the production system, which has been leading to further job losses.

Though the picture is not positive there are signs of recovery and evolution towards a positive mutation, which is necessary and above all urgent, and even more importantly, is closely linked to research and innovation. This is the critical point: research/innovation, because innovation without research is likely to be not only insufficient, but even harmful.

2. The Mutation of the Economic System

What is the meaning of 'mutation'? In order to understand mutation one needs clear pictures of the starting and arrival points.

Today at the global level there are two perfectly active economic systems that, though having different basic characteristics, do co-exist and our challenge is exactly the change-over from one to the other. It is the change-over from traditional industry to a new industry, i.e. from a resource-based to a knowledge-based economy.

Traditional industry is predominant in Europe, where 80% of industry is traditional, therefore old, and adapted to an old pattern that is now changing. Its characteristics are clear: the first and most visible one is that of low value-added mass production. It is about low added-value mass products involving large physical investments, plants, assembly lines, and a lot of manpower, energy and pollution, but clearly based on the principle of Taylorism, i.e. on linearity.

All this is changing towards a new economy, with a different organisation, completely different production processes, different products, a completely different type of manpower and, above all, a different approach.

It is a very big revolution, where the real 'driver' of the new economy is an intelligent product that completes a service, a high value-added product that meets the consumers' needs and provides them with a service, because the real added value is in the service itself. Few industries follow this reasoning because, if they did, they would immediately re-organise their whole production system, their logistics and all their procedures: they would radically change their production patterns, abandoning the linear system and starting a totally new system where the number of products is limited but the added value is very high, and where the organisation is flexible and global. In fact, the big industries are dismantling their manufacturing plants to keep only assembly centres. The manufacturing system is no longer based on the assembly line, but on a network of sub-suppliers, thus causing terrible problems to the small and medium-sized European businesses because they lose their points of reference. To those that were in Fiat's supply chain or assembly line, the loss of Fiat as a reference point creates problems and practical difficulties in finding new reference points at a global level.

Large products are no longer manufactured but small ones. The trend is towards micro-products and micro-motors, where more know-how and less material are required.

It is interesting to have a look at statistical figures: in 1945 the know-how content of products was 5%, today it is 16% and the target is to reach 20-25% by 2010, which means that know-how has an increasingly large share in the products.

Where does this come from from? From people who produce know-how and do not work with their hands because the big difference between the previous and the new system is the utilisation of man: man is a part of the system, totally deprived of any responsibility, and the faults of Taylorism should be analysed. Taylorism has taken all responsibility away from individuals and has made it impossible for them to have a global system view, which is today's winning approach, requiring