

Furthermore, we would not count licensing agreements as technology consortia since their primary purpose is the transfer/sale of existing technology rather than the creation/acquisition of new technology.

2.3 The Pros and Cons of Consortia

It has been noted by a number of authors that, quite contrary to what one might expect, R&D consortia often comprise firms which operate in direct competition in product markets. What incentives lead competitors to cooperate in their R&D?

One of the reasons postulated to explain this phenomenon is that in high-technology industries, characterized by high fixed costs in research and development and a tendency to high market concentration, a company is likely to find partners with comparable research capabilities and complementary technology among its competitors.

The Pros

Among the benefits of cooperation are ¹⁸:

- a) **Risk Management:** collaboration permits the sharing of R&D costs of high risk technologies, the so-called "high impact" technologies such as superconductivity, and femtosecond technology.¹⁹ Thus it spreads the risk over a larger number of investors.
- b) **Project Management:** collaboration reduces some of the duplication of effort that would occur if competitors were to pursue their own lines of enquiry. It therefore promotes the development of synergies among participants, thereby reducing costs. By pooling their resources, the cost of doing R&D is reduced for each participant. In other words, collaboration can facilitate the

¹⁸ These benefits are derived from a report on a seminar on Consortia in Canadian Business held in Banff in April 1992.

¹⁹ Femtosecond technology is research concerning ultra-fast phenomena around 100 femtoseconds or shorter. It includes but is not limited to electro-optic sampling, soliton transmission, and several other femtosecond regime electronics and optics. It is expected that the femtosecond technology will contribute to the future information society as one of the infrastructures.