

# An essential springboard for tomorrow's growth

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**T**oday's fault lines – globalization, revolutions in digital technology, nanotechnologies, biotechnologies and the environmental challenge – will become the main driving forces in the world that emerges from this recession. Innovation will be the key to success in this new world order. High-performance computing (HPC) enables the most complex equations to be solved and highly sophisticated models to be analyzed; opening up new perspectives for companies, reaching out to all sectors, from healthcare to energy, agronomy to finance, transport to construction. HPC is proving to be an essential tool... provided that the three major obstacles to its development are overcome.

To begin with, this is a technological and industrial challenge. In the world of HPC, the appetite for computing power cannot be met by ever-larger architectures. Major companies' demands are evolving, and technology suppliers are constantly running to catch up.

**“Three major  
obstacles  
to overcome”**

## Creating a new European ecosystem

It's quite simple – the current performance of supercomputers is still not enough, despite the fact that demand for computing power is growing constantly, in line with the market. HPC is strategic when it comes to growth, innovation, even State sovereignty; and the Europe 'arm' of the global system cannot just rely on external know-how, it needs to actively assert its own technological expertise and come up with step-change solutions. Now is the right time to create a truly European ecosystem, bringing together suppliers of computing technologies, customers and users. The high-performance computing revolution needs to be a shared challenge, even more so in a 'systematized' global economy.

Then there is the financial and political challenge. One of the major differences between the USA and Europe

is that although European funding may be sufficient to equip Data Centers, it is still not enough to fund technological developments themselves. The European approach differs here from the American approach, in that the European Union's programs do not aim to fund research and development for industry at a European level, but simply to equip researchers with the computing power that they need. This is a critical situation, which could eventually destabilize the competitive equilibrium.

The final challenge is one of accessibility. The extraordinary potential of supercomputers may be available to major corporations, but it also needs to be accessible to smaller businesses and industries, with pre-integrated, high-performance turnkey solutions. But this technological revolution has to involve the SMEs themselves, in order to reach out to all sectors of the economy.

After all, HPC is an extraordinary tool when it comes to anticipating the future, offering many spectacular applications that will have a tangible impact on the future lives of our fellow citizens. By supporting the democratization and widespread use of HPC, the public powers in Europe could create a collective momentum in research and innovation. We are poised to take on the challenge; to enable France and the rest of Europe to cross a major technological divide, which will guarantee our industrial competitive position.



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