



# EFMN

[WWW.EFMN.INFO](http://WWW.EFMN.INFO) The European Foresight Monitoring Network

## Anticipating Change for Europe's Industries 2020 to 2025 Foresight Brief No. 4

**Authors:** Colin Blackman [colin.blackman@ntlworld.com](mailto:colin.blackman@ntlworld.com)  
**Sponsors:** The European Foundation for the Improvement of Living and Working Conditions  
The European Commission  
The European Council  
The European Parliament  
**Type:** European Union coverage of specific industrial sectors  
**Organizer:** The EMCC or European Monitoring Centre on Change [www.emcc.eurofound.eu.int](http://www.emcc.eurofound.eu.int)  
**Duration:** Phase I 2003-2005 **Budget:** N/A **Time Horizon:** 2020-2025  
Phase II 2005 and ongoing

---

### Purpose

Consistent with its overall mission to encourage a more anticipatory approach to dealing with change, the Industry Sector Futures initiative of the EMCC offers analyses and insights at a sectoral and European level on drivers of change, scenarios for sector futures and key policy issues and implications that will affect the future of industry sectors in Europe.

---

### Part I: Background & Approach

In November 2002, the European Foundation for the Improvement of Living and Working Conditions launched the EMCC - European Monitoring Centre on Change - web portal, an information resource focusing on aspects of economic and social change. Established at the request of the European Social Partners and with support from the European Commission, the Council and the European Parliament, the EMCC is a place for exchanging practice, information and ideas on the management and anticipation of change in companies and industry sectors.

Sector Futures - an initiative launched by the EMCC in 2003 - provides insights at the sectoral level on the future of Europe.

The broad objectives of the Sector Futures initiative are to:

- Understand drivers of change as they apply to specific sectors of the European economy,
- Highlight possible scenarios and probable futures on a sector by sector basis,
- Provide information and links to access additional information and data at sectoral level,
- Identify and highlight topics and issues for debate in relation to the changing futures of sectors, for the companies and individuals who work in them and depend on them.

#### The Approach

For each sector, three 'bulletins' or articles were written by independent researchers and published on the EMCC web portal. The first sketches a broad picture of the changing dynamic of the sector, the second one presents future scenarios and the third draws out key policy issues for EMCC stakeholders. The articles are based on secondary sources and

The EFMN is financed by the **European Commission Directorate General for Research** as part of a series of initiatives intended to provide a **Foresight Knowledge Sharing Platform** for foresight practitioners and policy makers in the European Union. More information on the EFMN and on the Foresight Knowledge Sharing Platform is provided at [WWW.EFMN.INFO](http://WWW.EFMN.INFO)



include findings from existing foresight studies, scenario work and innovation studies. These are combined with some analysis from the researchers. In its first phase, the project covered the following sectors:

- Information and Communication Technology
- Financial Services
- Health and Social Services
- Publishing and Media
- Automotive
- Textiles and Leather
- Food and Drink Manufacturing
- Transport

- Knowledge Intensive Business Services

At the time of writing, the EMCC is planning a second phase of work with the intention of covering:

- Childcare services,
- Hotel and catering,
- Chemicals,
- Performing Arts,
- Defense Industry,
- Biomedical health.

## Part II: Drivers of Change and Sectoral Scenarios for Europe

By the spring 2005 the Sector Futures project of the EMCC had explored the future of eight industry sectors in Europe. The findings for these completed sectors can be summarized as follows.

### Information and Communication Technology

The main technological drivers of change in this sector are:

- Miniaturization and new materials,
- The Internet & Wireless
- Convergence of Telecoms, IT and Broadcasting,
- Ubiquitous computing & ambient intelligence.

The main economic drivers are the:

- Falling cost of telecoms,
- Liberalization of markets, and
- Regulation.

The Social drivers are:

- Personalization,
- Flexibility, and the
- Digital divide.

Two opposing Future Scenarios have been put forward:

**1 - Stumbling Along:** A world characterized by continuing innovation in ICT at a moderate pace and with moderate levels of social and economic resistance to new technology. Communication costs have not fallen dramatically, and there are continuing problems to do with security, privacy and social inclusion.

**2 - Grave New World:** A kind of 'futuristic dystopia' exists with fantastic technological possibilities but severe social and political problems. There has been a paradigm shift in innovation with convergence between ubiquitous computing, ubiquitous communication and intelligent user interfaces. The divide grows between the wealthy, educated, employed and information rich and the unemployed, uneducated poor underclass.

### Financial Services

The main drivers of change in the sector are sector restructuring such as the:

- Introduction of the single market,
- Mergers,
- Globalization,
- Niche markets).

IT is driving change via the introduction of

- E-Banking &
- Virtual money.

Social trends such

- Europe's 'pension time bomb' and the
- Role of the state,

Play an important role and the environment is a driver due to:

- Climate change.

Three scenarios are envisaged for this sector:

**1 - The 'Surprise-Free' Scenario:** A world where the single market and its common currency, continuing globalization, an extensive use of information technology and new employment opportunities shape the financial services sector.

**2 - The 'Alternative' Scenario:** The Euro has not been universally adopted following its rejection in a number of national referenda.

**3 - The 'What if?' Scenario:** This is characterized by a slow recovery in the stock market, increasing personal and government debt, and the domination of financial markets by derivatives, created an accident waiting to happen. A terrorist attack brings financial meltdown.

### Health and Social Services

The main drivers of change in this sector are:

- Demographic and societal change,
- Rising expectations and consumerism,
- Health Informatics and Telemedicine
- New medical technologies,
- Spiraling costs of health and social services provision.

The three scenarios for this sector are:

**1 - Best Guesstimate:** A vision in which many of the targets set today are met by 2015-2020. Life expectancy moderately increases, with some of this increase spent in good health. Individualism and consumption are stronger than today but society still holds together.

**2 - Problem Plagued:** Where today's reforms are ineffective and health and social services are in a state of perpetual crisis. Increases in life expectancy are low and are spent in bad health, with the elderly viewed as a burden on society.

**3 - Visionary:** Where life expectancy increases by 10 years, well beyond current projections. This is attributed to people taking more responsibility for their own well-being, as well as the development of new radical technologies, such as tissue engineering and anti-ageing therapies.

### Publishing and Media

The main drivers of change in this sector are economic and political drivers such as:

- Economic health,
- Competition and
- Regulation.

Technological drivers such as

- Digitization and convergence,
- Spectrum abundance,
- Continuing innovation in ICT.

Social and cultural drivers such as

- Personalization,
- Customization,
- Competing for leisure time,
- Global v local.

Two scenarios were put forward:

**1 - From Free to Paid-for Content:** After the bursting of the Internet bubble, there is a more realistic attitude towards financial sustainability. Revenues and profitability are now seen as fundamental to long-term sustainability,

**2 - Great Expectations:** here there are advances in delivery technologies and innovations in content combined with moderate governmental intervention.

### Automotive Industry

The drivers of change are:

- Increasing global vehicle fleet,
- Congestion,
- Changing patterns in vehicle production,
- Impact on the environment,
- Reliance on oil,
- Development of new fuels and
- New materials, safety, navigation.

The future scenarios for this sector area:

**1 - Safe and Sustainable Transport:** A scenario in which technological development by industry linked to good government policy has created a safer and more sustainable transport system. Individual personal transport - the car still plays a major role but is part of a more coordinated system.

**2 - Consumer Revolt:** In which the continuing availability of cheap oil has undermined the attempts of policy makers and manufacturers to promote alternatives to the internal combustion engine.

**3 - The Wild Card Scenario:** Rapid global warming leads to the acceptance of stringent emission reduction targets. Taxes on oil increase, the income being devoted to developing alternative technologies and alternatives to transport.

### Textiles and Leather

The main drivers of change here are international trade relations, organization and structure of the industry, new and emerging technologies, human resources and the enforcement of international rules and conventions.

Although no scenarios were available for this sector the standard forecast approach was employed. Developer by the IAF - Institute for Alternative Futures drivers are analyzed to deduce alternative futures according to three distinctive patterns of development:

- An Alpha Outlook representing 'business as usual', a
- Beta Outlook that considers in particular some of the many things that could 'go wrong', and a
- Delta Outlook that considering potential changes in direction.

### Food and Drink Manufacturing

The main drivers of change include economic trends such as:

- Globalization and Regionalization,
- Competition and Consolidation,
- A desire for cheap food,
- Engel's Law &
- New delivery methods.

Technological drivers include:

- Novel foods,
- GMOs &
- ICT.

Demographic and social change drivers through:

- Population dynamics,
- Market segmentation and
- Dashboard dining.

Safety and environmental trends that affect this industry include:

- Food safety,
- Sustainable development,
- Green procurement,
- Diet, nutrition and consumer demand.

The three scenarios that emerge are as follows:

**1 - The Production Paradigm:** Driven by the 20th century's need to produce more food but increasingly leading to public health problems including heart disease, obesity, cancers, diabetes, and diet-related diseases.

**2 - The Life-Science-Integration Approach to Health:** The focus is the individual, the personalization of diet, and the exercise of consumer choice. Food manufacturers and retailers test for predisposition to diseases and offer personalized medicine and diets through the growing science of nutrigenomics.

**3 - Ecological Integration:** The concerns of nutritionists and environmental scientists have been heeded and a broader approach has been taken to harnessing the food system in pursuit of improving human and environmental health as a whole.

## Transport

The main drivers of change in this case are economic drivers such as:

- Activity Patterns,
  - Access, Spatial structure & Organization.
- Science and technology drivers that relate to the
- Environment & Energy;
- As well as political and institutional drivers such as:
- Demography,
  - Attitudes & other social developments.

There are two main scenarios:

**1 - Business as Usual:** In this case society is characterized by medium economic dynamism and accompanied by comparable technological progress however there is little public support for the excessive promotion of a sustainable society.

**2 - Unrestricted Growth:** Society is characterized by high economic dynamism and rapid technological progress. There is little public support for the excessive promotion of a sustainable society. The maximization of income is the guiding principle for the whole of society.

---

## Part III: Policy Issues

This work on Sector Futures concludes with a discussion of the main policy issues raised by the scenarios for each sector. The exploration of policy issues is largely based on secondary sources. These discussions attempt on a sector by sector basis to outline major policy issues of concern in the future. Although there are no overarching policy conclusions, the detailed discussion for each sector is contained in the sector reports available as listed below.

Given that this work was based on secondary sources, the findings and depth of coverage varies considerably from sector to sector. We found that for some sectors such as:

- Textiles and Leather,
- Financial services, as well as
- Food and drink manufacturing,

There was surprisingly little published work to draw upon in terms of proper foresight exercises, futures research or sectoral scenarios focusing on the future of the sector in Europe.

In other cases, most notably Information and Communication Technologies, the opposite was true. Moreover when sectoral studies were available, they were often limited in their usefulness for various reasons. For example foresight studies in relevant sectors were available but were not conducted for Europe. Many studies were conducted very broadly across more than one sector, or within a very specific context for example to explore only environmental implications. Many did not consider aspects of particular concern to the EMCC such as impact on employment and working conditions.

The project suggests that even though there has been growing interest in foresight in Europe in recent years, there is a gap in terms of relevant primary research and considerable scope for improvement in the existence and availability of foresight relevant research.

---

## Sources and References

By spring 2005 the Sector Futures project of the EMCC had explored possible futures for eight sectors in Europe and

created 24 separate articles covering trends and drivers, scenarios and policy implications. These articles are all available at [www.emcc.eurofound.eu.int/sector\\_futures.htm](http://www.emcc.eurofound.eu.int/sector_futures.htm).

---

**About the EFMN:** Policy Professionals dealing with RTD, Innovation and Economic Development increasingly recognize a need to base decisions on broadly based participative processes of deliberation and consultation with stakeholders. One of the most important tools they apply is FORESIGHT. The EFMN or European Foresight Monitoring Network supports policy professionals by monitoring and analyzing Foresight activities in the European Union, its neighbours and the world. The EFMN helps those involved in policy development to stay up to date on current practice in Foresight. It helps them to tap into a network of know-how and experience on issues related to the day to day design, management and execution of Foresight and Foresight related processes.