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Contributors

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KEY POINTS

PROGRESS THROUGH PARTNERSHIP



TRANSPORT



INFORMATION SERVICE
17 JUL 1995
Wellcome Centre for Medical Science

THE SECTOR

Our prosperity and well-being are founded on efficient access to goods, services, people and places. Technology can help us meet the growing demand for access and the growing desire for a clean and safe environment in new and better ways, opening up new commercial possibilities and giving a boost to the competitiveness of UK industry.

Access usually involves movement, and the growth of personal mobility in particular is a story of remarkable success for transport and expanding opportunity for suppliers and operators. It is a success which comes, nevertheless, at a price measured in congestion delays, pollution, noise and accidents which society is increasingly unwilling to pay. Tackling these problems opens up new opportunities for the application of technology.

The world of personal transport is dominated by the car. This is the yardstick by which our expectations about travel flexibility, comfort and security are set. The same is also true of freight transport where road is the main mode of choice. If other transport modes are to compete effectively they must strive to offer equivalent benefits to the immediate user. However, our love affair with the car is being cooled by the recognition that traffic growth at current rates, particularly in urban centres, cannot be sustained indefinitely. As a more mature transport market the UK is having to address these problems ahead of some emerging economies. There is thus huge export potential for effective solutions developed here.

THE FUTURE

Perhaps the most exciting technology trend is that taking transport into the Information Age. The traditional link between the demand for access and the need to travel might start to dissolve if the 'Information Superhighway' can connect us to the things we want without us having to move. But it goes much wider than this. Richer information about travel services and traffic movements will introduce an unprecedented degree of feedback for transport users, operators and policy makers, opening up new opportunities for managing demand, utilising the network capacity more efficiently and improving interfaces between different modes.

Information technology in the car will further improve control, comfort and safety. But the greatest technological challenges in transport lie in developing the radically more eco-friendly vehicles that will be needed if anticipated demand is to be met in ways which satisfy the price/performance expectations of end users while meeting society's environmental targets.

KEY RECOMMENDATIONS

The Transport panel recommendations address the technologies and research activities that will underpin progress in these areas. Many of these priorities have been focused in the following Transport Foresight Projects, conceived to encourage private sector investment by creating a stable climate, stimulating a critical mass of activity, and showcasing new, innovative ideas:

TECHNOLOGY Foresight

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- The Informed Traveller: designed to provide integrated real-time information, ticketing, booking and payment facilities seamlessly across all passenger transport modes.
- The Foresight Vehicle: designed to stimulate the UK automotive supplier base to produce vehicles which satisfy increasingly stringent environmental requirements while meeting mass market expectations for safety, performance, cost and desirability.
- Clear Zones: designed to provide a focus for the many disparate activities related to creating more liveable urban centres.

The panel identified a number of priority technologies for each transport mode, and from these it has highlighted the following technologies which are common across modes and, therefore, particularly important:

- High strength, lightweight materials;
- Safety critical systems;
- Fuel efficient, low emission power plants and energy recovery systems;
- Quieter vehicles;
- Accurate location systems;
- Pattern processing and recognition technologies.

The Panel believes that the distinction between access and travel is key to understanding the development of the transport sector. The Panel urges that research priorities should reflect the systems nature of transport and the important impact that interfaces have on transport system effectiveness. Accordingly, the Panel also recommends that the Research Councils and Government Departments consider these specific research priorities:

- to understand how the interfaces between, and within, transport modes could be made more effective;
- to understand more clearly why people travel;
- to study ways to improve public awareness and education in order to raise the level of the transport debate;
- to understand what will be the likely impact of telecommunications;
- to increase our understanding of human-machine interface issues;
- to develop better models of transport systems.

Foresight will be measured by the results it delivers and industry's willingness to commit to subsequent Foresight exercises will depend critically on the success of this round. The Panel recognises that its report does not cover everything of importance in transport. But, equally, we are confident that we have identified the 'top slice' of initiatives, particularly the Transport Foresight Projects, which are worth taking forward now. UK industry in partnership with Government could take a lead in show-casing international-standard solutions to world-wide problems. This is too good an opportunity to miss.

TECHNOLOGY FORESIGHT PROGRAMME

The purpose of the Technology Foresight Programme is to help business people, engineers and scientists become better informed about each other's efforts. It is bringing these communities together in networks - looking forward in partnership - which will help to identify emerging opportunities in markets and technologies. The Programme will also help to ensure that resources are used to best effect in support of wealth creation and improving the quality of life. The results of Foresight will inform decisions on spending by Government and industry. Foresight findings are available to small and medium sized enterprises which may not have the resources to undertake Foresight work on their own account.

The Technology Foresight Programme is co-ordinated by the Office of Science and Technology (part of the Cabinet Office). Foresight panels have been working in each of the following 15 sectors:

Agriculture, Natural Resources & Environment	Health & Life Sciences
Chemicals	IT/Electronics
Communications	Leisure & Learning
Construction	Manufacturing, Production & Business Processes
Defence & Aerospace	Materials
Energy	Retail & Distribution
Financial Services	Transport
Food & Drink	

Summary leaflets (like this one) are available for each sector. Copies of these documents are available from the Office of Science and Technology, Albany House, 84-86 Petty France, London, SW1H 9ST (Fax: 0171-271-2015). Full reports for each sector are available from Her Majesty's Stationery Office.