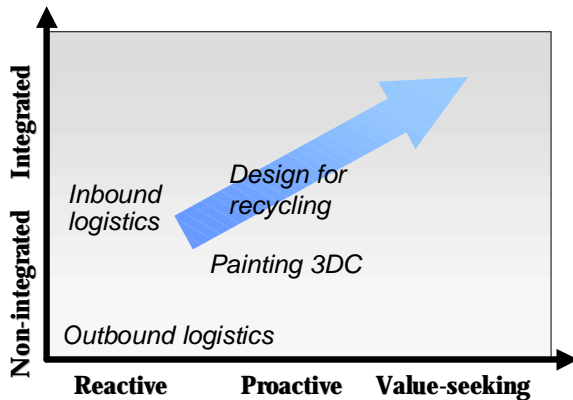


- The delivery of new vehicles to customers within one day will increase the kilometres driven for delivery per car.
- Design factors will impact on the recyclability of the product, both positively and negatively.

These conclusions were verified at a sponsor conference workshop.

The chart below shows the current approach taken by players to the major processes affecting the 3DayCar.



For 3DayCar to proceed whilst minimising impacts, activities should follow the direction of the arrow and case studies will be developed to show how this can occur.

FURTHER RESEARCH

The next stage of research will assess how a 3DayCar could be implemented in terms of environmental management. It will:

- Examine how the 3 approaches - reactive, pro-active and value-seeking - may be applied to a 3DayCar and how integration of activities across organisations can be of benefit.
- Understand the barriers to integration which hinder the implementation of a 3DayCar under the 3 approaches.
- Identify measures to align actions with goals, taking into account the cost emphasis required by 3DayCar sponsors, and how these vary depending on the environmental approach taken.
- Focus on the main areas identified during the 3DayCar workshop session.

This research will deliver 3 possible approaches to the 3DayCar that account for the environment in a reactive, pro-active or value-seeking way. It will concentrate on an integrated value-seeking approach.

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EXECUTIVE BRIEFING

Green approaches to the integrated supply chain

By Joe Miemczyk, MSc

To achieve a 3DayCar without damage to the environment requires an integrated, value-seeking approach across the whole supply chain.

This briefing shows the current progress of the different players in the supply chain towards such an integrated greening approach. It highlights specific areas of the 3DayCar which are environmentally sensitive.

ENVIRONMENTAL APPROACHES

Approaches to environmental issues vary widely across the vehicle supply chain. These approaches have been assessed on the basis of a framework developed by Bath and Cardiff Universities (assisted by Prof Remko van Hoek).

The framework consists of two types of classification:

1) Is the company:

- Reactive - complying with the minimum standards set in regulation, any investment payback being on the shortest timescale?
- Pro-active - meeting and exceeding regulation, using environmental management systems and designing products to account for recycling and future legislative requirements?
- Value-seeking - using environment as a differentiator to gain profit opportunities over and above future legislative requirements

2) Does it take:

- An integrated approach; whereby players across the supply chain collaborate or form alliances to reduce the cumulative impacts of environmental problem areas?
- A non-integrated approach; operating purely on their own?

Research at 12 companies in the automotive supply chain has been used to determine where the approaches of manufacturers, component suppliers, logistics companies and dealers fit into the framework.

CURRENT APPROACHES

The main findings of research to date are:

- Vehicle manufacturers themselves are proactive to varying extents, driven by legislation and by pressure to perform as an environmentally responsible firm in the eyes of stakeholders.
A typical UK manufacturer is certified to ISO14001, and is reducing waste through recycling. Water-based paint has been adopted and vehicles are designed with recycling in mind. Activity tends to be site based.
- Suppliers are generally reactive in response to their customer, i.e. vehicle manufacturer requirements and legislation, with some action to reduce cost through recycling.
Many suppliers have ISO14001 but only recently and they only look at site issues. Product design is still the domain of the manufacturer.
- Logistics providers are at the beck and call of the manufacturer, but their approach is hardly even reactive, with little environmental action so far.
Only one logistics company has ISO14001 but could not address its most significant effect, fuel use, due to the relationship with its customers. There has been little suggestion by customers that logistics should take account of the environment.
- Other players in the UK distribution channel such as dealers are equally reactive in their approach to greening, and are carrying out little environmental work.
Although the impacts are less significant site by site, cumulatively they are large. Only one

manufacturer is requiring dealers to comply with ISO14001. The franchise structure means an integrated approach can be more effectively implemented (shared systems etc).

There is little evidence of collaboration between players on environmental grounds. The manufacturer, the main power in the supply chain, requires others to achieve prescribed standards, i.e. ISO14001 or material restrictions. Recycling requirements are driving a more integrated approach but this is still in the early stages.

In general, companies are more active in Continental Europe and there are some instances of a value-seeking approach being taken there. There is a history of more stringent regulation (especially in Germany and Sweden).

3DAYCAR IMPACTS

The 3DayCar programme aims to develop a process framework through which a new car can be ordered, manufactured and delivered in just three days. This will require a number of changes which will have a significant impact on environmental management. The major areas of change will be:

- The number of deliveries to assembly plants will increase to permit product flexibility without holding significant stocks.
- Batching for paint must not constrain vehicle assembly. Ideally the paint process must be capable of colour batch sizes of one. This will increase pollution and waste from changeovers using current painting systems.