

Summary of Report 60: Together smarter in supply chains

Competences in supply chain management as a competitive factor for Dutch companies

Request for advice

At the end of 2003, the Minister of Transport, Public Works and Water Management asked the Advisory Council for Science and Technology Policy (AWT) for advice about strengthening the capacity for logistical innovation in Dutch businesses. The Ministry's *goods transport and logistics policy* aims to make an explicit contribution to the performance of the Dutch economy as a whole. The following questions are central to this advice:

What is the position with regard to the quality and use of logistical expertise in our country (the capacity for logistical innovation)?

What are its strengths, weaknesses, and what are opportunities and threats for developments?

What can the government do to improve the quality of education and research, as well as improve the use of logistical expertise by Dutch companies?

Analysis

In its analysis of the Dutch capacity for logistical innovation, the AWT used the Ministry of Economic Affairs' model of the dynamic innovation system as the basis. Broadly speaking, it came up with the following matrix of strengths and weaknesses, opportunities and threats for the various players involved.

Demand side. Markets change, the influence of customers continues to grow: there is further individualisation and the market is increasingly customer-driven. In addition, the pressure on storage costs has led to a reduction in stock levels and a shift towards more frequent, just-in-time deliveries. Finally, there is also the internationalisation of production and trade; the process of scaling-up in many sectors, including the retail sector; the accessibility of more technologically advanced ICT; the growth of e-business. However, these trends are not equally important to *all* business-to-business and business-to-consumer markets. Consequently, it would also be an exaggeration to state that logistical expertise will be *the* competitive factor for all businesses. However, efficient logistics is certainly a precondition for participating in international competition.

Cost savings remain an important motivation for logistical innovation, but they are certainly not the only argument. The quality of service – speed of delivery, flexibility and reliability – are at least as important. Businesses also recognise the increased (strategic) importance of logistics. This can be seen, for example, in the rise of logistics managers to the level directly under the board of management.

Corporate structure. The main problems surrounding the capacity for logistical innovation lie with the business sector. Many of the companies are relatively small in size, employ relatively few highly-qualified personnel, and are typically highly operationally-oriented - innovation occurs in small steps. The limited size of Dutch companies makes them vulnerable. This is particularly the case with logistical service providers, who can be squeezed out of the market by large foreign-based service

providers with generous budgets that enable them to invest in the required advanced ICT systems.

Besides the limited capacity for innovation of many individual companies, the conclusion is that cooperation between companies is difficult to get off the ground. Cooperation between companies occupying different positions in the production chain still works relatively smoothly; cooperation between logistical service providers is regarded as the most difficult. What also plays an important role is the fact that service providers are quick to perceive developments as a potential competitive advantage over their rivals, and see little room for cooperating in matters in which they have a common interest. All in all, the conclusion is that cooperation over fairly large parts of supply chains will only be achieved if a company is involved that has the commercial strength to organise supply chains and compel innovations. Cooperation between companies, the sharing of information, is, however, at the core of supply chain management. Increasing the willingness to cooperate is, in the opinion of the AWT, therefore also the most important theme to tackle.

It is widely believed that there is a great deal of unutilised potential in the cooperation between producing and receiving companies, and that the cooperation could be achieved more easily. Not only is there less sensitivity about competitiveness among haulage companies which cooperate with one another, these kinds of strategic alliances can have a large impact, as the producing and receiving companies also direct the logistical service providers.

Research. Research carried out into logistics by Dutch universities is of a high quality, but is characterised by a heavy emphasis on the 'hard' side - infrastructure and planning models - whereas it is actually the knowledge of the 'softer' sides of logistics which is of crucial importance in strengthening the capacity for logistical innovation. Think, for example, about the skills that are needed to facilitate inter-company cooperation. Some progress has in fact been made recently in this area. Points of special interest include the further strengthening of research into strategic alliances, and the integration of the various disciplines, leading to the multidisciplinary approach that is required in supply chain logistics.

The Ministry poses the question about whether the development of knowledge should be pursued at a national level. The development of knowledge is international; no single country can still completely dominate an area of research. It is therefore important that Dutch knowledge institutions participate actively in international networks. This appears to be the case. However, the utilisation of knowledge needs to be organised properly at a national level. The educational function of knowledge institutions plays an important role in this regard. They supply people with the new knowledge obtained internationally, and the skills with which to apply that knowledge.

Education. Logistics education is, in itself, of a high standard, but an overhaul is desirable, so that particularly the integration of the 'softer' aspects can receive extra attention. Business schools and institutions of professional education (*hogescholen*) appear to be more flexible in establishing multidisciplinary training programmes than the regular universities. The structure of the new Bachelor-Masters degree programmes at universities offers a good opportunity to develop a Masters degree in Supply Chain Management. Logistics is grappling with an image problem. The expected intake of students is distinctly lower than the anticipated demand.

Intermediaries. There are already a number of parties – both public and private – who act as an intermediary and, in doing so, enable businesses to apply

knowledge. However, these intermediaries seldom offer a total solution; companies wishing to innovate in the area of supply chain management have to combine the required knowledge disciplines themselves. An intermediary is needed who can decide these combinations for them; this is partly because of the huge gap between the knowledge developed in universities and the highly operationally-oriented knowledge demands of companies. However, in the opinion of the AWT, the solution does not lie

in customer-driven research or in Public-Private Partnerships. The gap between the development of knowledge and the demand for knowledge is too wide for that.

Preconditions and infrastructure. Companies analyse a country's 'business climate' when making their investment decisions. The position of the Dutch government is perceived as unclear: what is the ambition of the government in the area of logistics; under what conditions can a business activity be established or expanded? Companies are calling on the government to give them an insight into the agenda. Besides this general component of the climate for establishing a business, companies also mention a number of more specific issues. They point to the importance of standards, particularly for the exchange of information between companies. Companies ask for a more pro-active approach by the government at national and international level in the development of standards. **Radio Frequency Identification (RFID)** – a system of tracking and tracing consignments – can make an important contribution to innovation in the area of logistics. Individual companies will, however, not invest in the infrastructure that is needed to implement RFID effectively. There appears to be a role for the government here too.

Subsidy schemes for logistics projects place a heavy emphasis on parts of projects, particularly 'sustainability'. This problem is particularly noticeable in the way that pilot projects are funded. These projects are an important step for implementing new logistical concepts, but no integral funding possibilities are offered.

Sustainability of business activity has become an increasingly important theme. A number of developments in the area of logistics that are of commercial interest are likewise appealing from a sustainability point of view, such as (i) transport savings through greater cooperation between companies, (ii) geographical concentration of activities, and (iii) tracking and tracing, particularly of hazardous substances. It is precisely this match of interests which offers excellent opportunities to combine the strengthening of companies' competitiveness and 'sustainability'.

Context: internationalisation of trade flows. The Netherlands is well positioned for attracting European distribution centres. That is made doubly attractive because of upgrading of employment around those distribution centres (supply of higher-quality service activities); moreover, the centres are often the first step towards the establishment of further business activities, such as service centres or head offices. The Netherlands' position, is, however, not unchallenged. The accession of countries from Eastern Europe to the European Union could make Germany more attractive for establishing European distribution centres. But there are opportunities in the Netherlands too. The logistical expertise now available and the availability of excellent mainports, can be an opportunity to achieve an even higher quality of service. The greater the distances become and the more production is contracted out to low-wage countries, the more complex the supply chains will become, and the greater the need for expertise in supply chain management. The Netherlands could try to claim that position by using precisely its good position in interchange logistics

as a basis for further developing its position in supply chain management. However, that will require a further professionalisation on the part of the logistical service providers.

All in all, the above analysis provides an answer to the request for advice on 'what is the position with regard to the capacity for logistical innovation', which is: besides strong and positive points, it is possible and desirable to improve and strengthen several areas. Prior to stating its recommendations in this regard, the Council would like to explicitly address the role of the government.

Role of the government

The starting point for the AWT is that companies are and will remain primarily responsible themselves for maintaining or improving their competitiveness, which also includes the required logistical expertise. In addition, however, the government also has a role to play. The rationale for its role can be found in the importance of innovative business activity for the Dutch economy, and therefore for our prosperity *and* welfare. Future growth will increasingly have to be achieved through improved productivity based on increases in added value. Logistical innovations can make a fundamental contribution to this process.

It is clear that the government, i.e. the Ministry of Transport, Public Works and Water Management, should not – and is not able to – take the place of the entrepreneur, by, for example, choosing or deciding what innovations should be developed further. In general terms, the role of the government is primarily one of providing support: organising, facilitating, and generating enthusiasm, to enable innovations to be realised. It is important to realise in this regard that innovation – and certainly logistical innovation too – is more than just knowledge: the development of knowledge is only the first step in the innovation process; the next steps involve converting that knowledge into practical applications and then introducing those applications onto the market.

Issues concerning logistical innovations increasingly overlap the policy domains of other departments. That is why the AWT does not advocate the Ministry of Transport, Public Works and Water Management having its own incentives policy and tools for stimulating innovation in supply chain management. Besides having its own responsibilities on the infrastructure front, the Ministry of Transport, Public Works and Water Management will chiefly have to focus on 'promoting' the desired activities in other Ministries.

Recommendations

Based on the above analysis, the Council has drafted the following recommendations to the Minister of Transport, Public Works and Water Management.

1. Focus on strengthening inter-company cooperation:
 - Provide and support neutral 'brokers and facilitators' who can bring together the parties in a supply chain.

- Follow a thematic approach for stimulating innovation, using themes – chosen after consultation with companies – that are in line with the principal interest of companies: i.e. the strengthening of their competitiveness.
- Actively publicise successes, provide information and dissemination of knowledge and experience that has been gained.
- Utilise the potential for cooperation between producing and receiving companies.
- Carry out well-organised pilot projects.

2. Increase the level of knowledge in companies:

- Stimulate the recruitment of more highly-qualified personnel into (temporary or permanent) logistics jobs in companies.
- Enhance activities connected to traineeships from universities of professional education (*hogescholen*) and regular universities in logistical projects.

3. Promote multidisciplinary research and education:

- Stimulate multidisciplinary research in the area of supply chain management, and pay special attention to the 'softer' knowledge aspects, such as strategic-alliance-forming skills.
- Stimulate new curricula in education, centred on the multidisciplinary character of supply chain management.

4. Improve the links between knowledge institutions and the business sector:

- Work to improve the links between the development of knowledge and the demand for knowledge; employ a 'phasing-in model' for this purpose and, for the time being, avoid (more) tightly demand-driven research, or a heavy emphasis on Public-Private Partnerships in research.

5. Set good preconditions:

- Develop, together with the other Ministries, regional authorities and companies concerned, a clear vision and ambition for logistical developments, and publicise that vision.
- Adopt a pro-active position at both national and international level, for establishing standards, in order to promote Dutch interests.