UK ORNAMENTAL HORTICULTURE - SUPPLY CHAIN MANAGEMENT

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1.0 Executive summary

For the UK ornamentals industry, the principal concerns regarding plant handling, transport and distribution are rising costs against a continuing backdrop of declining returns. In order for growers to address this and take advantage of the opportunities cited in this report, they must begin to communicate more closely with one another, particularly in areas where they are non-competitive such as transportation, purchasing and distribution.

Case studies highlighted during this project illustrate how other industries, for example in fresh produce, brewing and manufacturing, have responded to similar issues and re-structured to consolidate their supply chains, reduce costs and improve service levels. The fresh produce sector has also embraced the concept of lean management and value chain analysis to challenge current practices, identify and reduce waste and so in turn, cut costs. To a degree, the ornamentals industry has also begun this process but greater emphasis needs to be placed on applying this thinking to the supply chain as a whole.

Historically, there has always been a tendency in the UK for growers to work as individuals. Some still see their immediate neighbours as the main 'threat' rather than the wider market with its increasingly global perspective. Such views can be 'blinkered' and have led to European competitors gaining a strong foothold in the UK marketplace. This has been especially evident in the garden centre market where European suppliers appear better able to supply a wide range of plant products with almost immediate availability, through well organised and highly integrated supply chain structures. Increasingly, the UK market requires and expects an immediate response to sales and growers who work within a well organised and integrated supply chain structure are more able to meet this demand. In turn, this has led to more UK buyers considering continental sources of supply.

It is not impossible for UK growers to satisfy this demand too but they need to consider different ways of working in order to be more efficient and deliver the service levels required in a cost effective way. There are good opportunities for UK growers to collaborate more in sales, purchasing and promotional activities to mutual benefit, by developing more robust grower led business co-operatives of which regional transport hubs are likely to be an important part. Transport hubs enable freight to be consolidated more efficiently and offer genuine opportunities for growers to significantly cut transport management costs, particularly in areas where there is a dense population or cluster of growers who can work together and share costs. Whilst this system may still feature a degree of competition in the marketplace amongst those growers using a hub, it is a concept that could be developed in the UK, for example through a network of regional hubs. This would provide even greater economies of scale and efficiency.

To varying degrees, growers in the UK have been working together for some time through the formation of local or regional grower groups but it is clear from this study that there is a need to build on these initiatives, integrate more fully and consolidate further.

Such schemes should also consider extending co-operation to deal with common non-competitive issues such as purchasing, dealing with waste disposal, recycling and pooling of labour resources to share costs. UK growers also need to scale up their level of mechanisation and make better use of advanced technology to reduce handling costs.

The industry also needs to give further consideration to adopting a greater degree of crop specialisation, which enables production units to streamline costs and focus resources cost effectively. This concept lends itself well to automating and mechanising production further, to reduce labour costs, and may need to be considered more fully by growers wishing to merge or form group nursery structures where the guiding principle is one of members growing complementary, non-competing crops. Hence, a degree of sacrifice may be required.

Further opportunities to reduce transport costs and develop new markets may exist for some growers on a local basis given the increasing interest in local procurement and support for rural economies. However, for this concept to progress, a promotional strategy is needed which highlights the benefits of buying British and locally grown plants. Current market testing work will help to inform current thinking about future market prospects.

The principal conclusions of this study are that if UK growers are to compete in today's increasingly global market, they will need to re-structure their supply chain arrangements and work more closely together to deliver the service levels now required by their customers. Joint ventures and co-operative working need to be embraced more fully, particularly in non-competing activities such as transport and procurement. There are also good opportunities to collaborate further on sales and marketing, perhaps through the formation of regional service centres, linked to a network of transport hubs.

The potential of electronic trading to ease and speed product sourcing and order processing should also be explored further, perhaps linked to the formation of a UK sales desk or bureau. There are a number of established models, which could be used as a guide, for example the SIBA Direct Delivery Scheme developed by the brewing industry. There may also be opportunities to link this to an enhanced marketing function, perhaps along the lines of the Flower Council of Holland, to promote UK ornamentals more generically and strengthen links across the supply chain.

In summary, growers need to look carefully at their business, their market place and their competitors to identify the best way forward, in co-operation with other suppliers. Although it is unrealistic to think that UK supply chains will ever completely mirror those of European suppliers and in particular, the highly integrated auction structures of Holland, there are important lessons to learn, particularly in respect of marketing co-operatives, transport planning and logistics. Whilst it is also unlikely that UK production will become as specialist or automated as Holland, it does need to become less fragmented, more co-ordinated and certainly more international in its outlook. Put simply, the industry needs to stop competing with itself and work together much more.

2.0 Background

Supply chain management can be defined as the integration of supplier, distributor and customer logistics into a cohesive process which embraces customer demand, planning, forecasting, raw material procurement, allocation of products, marketing, order fulfilment, transport, storage and delivery of products. A good, cost effective and efficient supply chain hinges on the integration of a business' internal functions and those of their suppliers and customers.

The UK ornamentals industry has seen continued and substantial sales growth in recent years. However, competition is fierce, particularly from exports, and costs continue to rise, placing considerable downward pressure on nursery margins. Transport and labour costs are a particular concern. Also, buyers are increasingly seeking to consolidate their supply base and demand high service levels. In turn, this has led to more UK buyers considering continental sources of supply, most notably from Holland.

In response to this, the industry has begun to rationalise, pool resources and adopt a more specialist approach in line with continental trends, though not to the same extent. The supply base continues to become more polarised: typically, 90% of total nursery stock output now comes from less than 10% of the total number of producers. In line with global trends, there are now more larger producers and fewer small ones. This is likely to continue as major customers seek to consolidate their supply base. Greater production capacity, economy of scale and improved logistical frameworks have helped enable larger organisations to develop and strengthen their position in the market.

Future prospects for small and medium scale ornamentals producers (over 50% of holdings are less than 1 ha in size despite recent consolidation) appear particularly difficult unless they are able to consolidate, join forces and / or develop niche market opportunities (e.g. direct sales of locally branded product). Profitability for many suppliers is now quite marginal as demand has levelled off and so even small cost increases (e.g. labour, energy, transport) may lead to a further fall out. This is reflected in the fact that several producers have left the industry in recent years and more may follow.

Nevertheless, the industry is resilient and in recent years has shown the greatest growth in value compared with other horticultural sectors. It is estimated that the UK cut flower and indoor plant market for example is now worth over £1.5 billion at retail level (UK Flowers and Plants Association), up from an estimate of £1.3 billion in 2003. The UK plant market is also robust and now worth £1.8billion (HTA *Garden Industry Monitor* data, 2006) at retail level: though sales had been in decline since 2003, there was an upturn during 2006 and, 2007 began well. Sales through core garden centre outlets have remained steady and the market remains reasonably strong.

Clearly, the UK garden market does have potential for continued development. However, for growers to sustain past growth, they will need to reduce costs and consider opportunities to work more closely together by pooling resources.

Industry consolidation and more effective co-operative ventures are pivotal to the industry exploiting new business opportunities and building a sustainable future in a more globally competitive market place. Linked to this, is the need for the industry to embrace more fully the benefits of advanced technology and automation across the supply chain. Activities such as materials handling, transport and distribution each attract considerable costs, particularly during peak periods yet there is scope to reduce these costs.

A number of leading UK growers have already made significant efficiency gains through combining transport, sales and labour resources, in order to help secure their position in the market. Several are now outsourcing their logistics requirements to specialist carriers, which enables them to focus their resources more efficiently and in turn, significantly reduce costs. Some are seeking further efficiency gains and developing the use of transport hubs to consolidate freight and share costs.

It is now important to build on these initiatives and establish a clear understanding as to how supply chain management can be improved further within the UK industry. This report, commissioned by the HTA, HDC and Defra details the findings of a recent study into supply chain management in the ornamentals sector servicing the retail garden market and provides recommendations for next steps and future industry strategy.

3.0 Project objectives

The project aimed to fulfil the following objectives;

- To review supply chain management within the UK ornamental horticulture industry, with particular emphasis on the retail garden market and hardy nursery stock sector, comparing it with overseas suppliers that have managed to successfully penetrate the UK market (most notably, Holland)

- To examine key areas, particularly the potential for joint ventures and distribution hubs, and report on how such collaboration can reduce costs and improve security of supply

- From the information obtained, to identify opportunities for improvement, providing recommendations to improve supply chain strategies and logistics for UK growers

A work programme was devised which is outlined below, in key steps.

- A series of face-to-face and telephone discussions with stakeholders throughout the supply chain and, outside the industry. This will include raw material suppliers, growers, growers associations, transport companies, transport associations e.g. the Freight Transport Association (FTA), packers, retailers, foreign exporters and, depot operations

- A literature search on published case studies of supply chain management across a number of other industries with similar characteristics

- An analysis of exporter's (to the UK) supply chains, identifying key factors they have had to address in becoming successful and how this has been achieved. To compare this with the current UK grower supply chain servicing the retail market

- A comparison of the UK ornamentals industry with other UK industries that have established effective supply chain operations, the potential for sharing logistics information with them and the possible benefits of such an approach

- An outline appraisal of the potential for national or regional distribution hubs, incorporating 'lessons learnt' from co-operative and regional initiatives within the UK industry

- A report collating and summarising the findings, with recommendations for future development

4.0 Principles of successful supply chain management

4.1 General

Effective Supply Chains are the “lifeblood” of most organisations and provide businesses with a clear competitive edge. However, there have been a number of high profile examples where this has not been recognised and, as a result, there have been serious impacts on business performance. And indeed, where due attention has not been given during the significant change processes often required with effective successful supply chain management.

In most industries, effective supply chains share similar aims, most notably these are to:

- Produce, maintain and supply consistently high product quality
- Provide high levels of service
- Minimise costs and wastage
- Contribute to maximising profits

To a major extent, success depends on these objectives being carefully prioritised to minimise any conflicts between them. For example, if absolute minimum cost is the aim, then quality and service may not be maximised and so suffer. The guiding principle of successful supply chains common to most industries is to optimise the individual results from each of the key stages to achieve the best overall outcome. This may mean it is necessary for some stages to operate below maximum individual effectiveness to avoid one impacting adversely on the other and so in turn, the end result.

Common issues and difficulties include:

a) a lack of clarity concerning the key objective(s)

b) attempting to maximise results from each individual stage of the chain rather than focusing on achieving the best overall result

These two issues frequently result in conflict and failure to achieve the best overall performance. They can be resolved by clear strategic direction i.e. clearly establish lead objectives at the outset and ensure that each stage of the chain effectively contributes to a ‘best overall’ outcome rather than compete to achieve maximum performance at each stage. If high service levels and quality are the lead objectives, then the target should be to achieve the required standards at the minimum cost: this is quite different to achieving the minimum costs per se.

Achieving the optimum results can be complex, due to the number of traditional functions involved and “trade-off” aspects requiring careful attention. ‘One-size’ does not fit all operations.

However, those organisations that give due attention to the relevant areas normally gain benefits from the process, over those that do not.

Supply chain management is often an area that will benefit from independent specialist attention being given to it from outside the individual organisations concerned. If done correctly, this should identify opportunities for consideration that may be missed by natural internal questioning.

4.2 Horticulture

Several important features differentiate and characterise the horticultural industry so far as supply chain logistics are concerned:

Product handling – live plants require quite specific and careful handling during loading, transit and delivery, i.e. they need to be suitably protected from damage during these activities. The nature of the products involved can also create more demanding requirements for handling. Horticultural products vary considerably, from seedlings / transplants to large established trees and as such, the handling requirements are potentially more complex than for those industries with a more uniform product base. Delivery vehicles often need specific securing equipment, particularly for wheeled trolleys. Temperature control may also be required.

Seasonality – significant peaks and troughs in demand due to production and sales cycles create logistical challenges so far as load planning / back-loading and utilisation are concerned. Currently, many delivery movements are unbalanced, requiring less efficient 'one-way' movement of plants.

Trolleys – usually, a common pool of trolleys can be broken down when empty for return to the hub / supplier. However, this tends to mitigate against effective back-loading from alternative sources, for vehicles delivering full loads on outward journeys and higher costs can result. Trolleys are also quite expensive and need managing to ensure safe return, otherwise they have to be replaced, which can be costly. Tracking and identifying trolleys can also be a problem: I.D tags are available that can be scanned but this is seldom used at present.

Inexperience – within the logistics industry, there is presently only limited experience of the specific needs of horticulture. Historically, this has led to many suppliers operating their own delivery fleets but this can be costly and inefficient: under utilisation of expensive equipment particularly during off-peak periods coupled with an inability to achieve economies of scale lead to greater unit costs. This can be as much an issue for logistical specialists as growers operating their own transport fleets.

Several approaches can be considered by growers and transport operators to address these points. One of the most crucial is to clearly understand the future direction of the business, likely trends and potential options. Key points to consider include:

- Size of operation – single or multi-site, local, regional or national spread

- Production – in-house or bought in or combination thereof
- Customers – range, locations, seasonal needs and potential volumes
- Seasonality – likely peaks and troughs
- Lead customer offering – i.e. service, quality, cost etc
- Competitors – do they have a competitive advantage in terms of product handling and distribution and, are there opportunities to collaborate?

Activities within the overall supply chain need to be reviewed carefully to ensure they produce the 'best overall' performance and result. In particular, this process should assess whether delivery activities should be treated as part of the core business. Size of operation, production strategy, customer group(s) / lead offer and, seasonality are frequently inter-related and so impact on each other during the review process.

The outsourcing of inbound and outbound deliveries needs to be examined during the review, either in part or as a total entity. In horticulture, usually such activities are undertaken either independently or through growers operating on a local group basis. The most appropriate approach to this will normally be determined by several factors:

- Size of operation
- Size of individual deliveries
- Geographical spread and density of deliveries
- Access at delivery points
- Compatibility with products of other suppliers in the same sector, including confidentiality of business levels, commercial terms and livery requirements
- Variation in seasonal volumes

If outsourcing is pursued, it should be approached as an evolutionary process to enable outsourcing partners to gain sufficient experience of the sector. One this has been gained, good logistics providers will usually independently recommend improvements that will benefit both parties. This could also include management and control of trolleys.

When outsourcing logistics requirements, it is essential to maintain an effective management relationship with the third party service provider. If this aspect is neglected, there is a high risk of incurring problems that could otherwise be avoided.

5.0 UK Hardy nursery stock

5.1 Economics

Although the ornamentals sector has shown the greatest growth in value in recent years and nursery stock has seen the biggest increase despite intense market pressure, operating margins have declined. They continue to be under constant pressure as costs, most notably labour costs, energy and transport rise further still.

Nursery stock does however have the advantage of relatively low energy consumption that to some degree shields it from further hikes in fuel oil prices. In contrast, the protected ornamentals sector is now feeling the true impact of higher energy costs and, cheap imports, underlined by the recent decline in UK poinsettia production due to its high energy requirements. Labour costs are one of the most challenging issues for nursery stock but there is scope to manage these better, with improved planning, materials handling and automation. Increased use of low cost, flexible migrant labour is likely to continue.

Growth in the nursery stock sector (current farm gate value approaching £475m) does appear to have peaked, placing further pressure on margins and limiting opportunities for new entrants, although trade during 2006 showed signs of recovery and 2007 began well. Many growers have cut production volumes in response to poor returns and difficult trading conditions. Rising costs are also eroding margins.

The squeeze on margins of UK nursery stock growers is illustrated by figures from the HTA Nursery Business Improvement Scheme (NBIS). Table 1 for example, shows that during 2004 and 2005, returns / m^2 and, in turn, surplus monies available for re-investment, fell significantly below those of previous years (2004 was a particularly difficult period for nursery stock growers). Whilst slow trading conditions during this period were undoubtedly a contributory factor, high costs also placed added pressure on business margins.

Table 1. Hardy nursery stock - costs as a percentage of output (UK)

	Return / m^2	Labour	Distribution	Plants	Pots / packing	Overheads	Surplus monies
2002	£14.10	33.8	10.1	32.3	8.5	10.7	4.5
2003	£19.30	34.0	8.70	29.9	10.7	10.9	5.8
2004	£7.40	39.2	10.9	29.9	8.0	13.5	-1.5
2005	£7.40	36.2	10.0	28.6	8.6	13.6	3.0
2006	£10.40	35.3	9.2	24.1	8.4	13.0	9.9

Source: HTA Nursery Business Improvement Scheme – 12 months ending 31st December 2006.

In 2006, returns / m^2 recovered and with them, surplus monies for re-investment. There was also a reduction in costs, although this was due more to nurseries being more efficient than unit costs actually falling. Clearly, the nursery stock market is susceptible to change and even small fluctuations can have a considerable impact on the profitability and sustainability of nursery businesses. This underlines the point that for UK nursery businesses to protect operating margins and remain competitive, their priority must be to reduce costs and improve efficiency.

Whilst container production now accounts for >50% of total nursery stock value and has historically yielded high gross margins, it is more intensive than field production and usually attracts higher capital costs. Irrigation, container beds, protected structures and ancillary equipment, each of which require periodic renewal, account for a high proportion of these costs. Not all businesses have invested sufficiently in nursery infrastructure to keep pace with modern demands, particularly in terms of materials handling, transport and mechanisation (e.g. potting, propagation, order collation and despatch being especially labour intensive). The diverse crop range and disjointed, inefficient layouts of many container units exacerbate this problem and make it difficult to focus resources cost effectively.

Specialisation provides scope to improve production economics. Costs can be streamlined more efficiently and wastage reduced when resources are targeted at one particular crop (e.g. roses, clematis) or groups of crops with similar requirements. Quality standards also improve and there is more scope to mechanise and automate, as evidenced by developments on the continent and especially, Holland. Economically, it is more difficult for large, diverse production units to control costs and compete with specialists. Although specialisation amongst UK producers is unlikely to ever match that of Dutch growers, there has been a trend in recent years for some nurseries to move this way (e.g. liner production, more outsourcing of young plants / finished product). This concept also links well with current initiatives towards greater industry consolidation and co-operative ventures.

One of the disadvantages of specialising however, is that unlike businesses with a more diverse market offer, it can be difficult for specialist units to change tack quickly should market trends shift away from their core product. Arguably, the diversity of UK production is its unique selling point and it is this diversity that is attractive to foreign markets. For the UK industry, it's a matter of striking the right balance. In terms of the current UK retail supply chain whereby most growers still sell and deliver plant products directly to garden centres, it is the diversity which provides the necessary volume for this to be economic. If UK growers specialise more, they will also need to co-operate and consolidate deliveries much more.

Mergers, acquisitions, plant trading and contract growing have also emerged as clear trends in recent years as the sector seeks to pool resources, rationalise and cut costs.

Contract production and trading by larger, traditionally diverse businesses provides greater flexibility and so allows them to respond quickly to changing market requirements.

However, operating margins are frequently tight with contract growing and disciplined control of costs and wastage are crucial if it is to work for all parties. Plant trading has increased dramatically in recent years and will gain further momentum as suppliers outsource more of their own production to cut costs, flex with the market and meet the demands of major retailers, who are seeking to consolidate their supply base.

Polarisation of the UK supply base is likely to continue as smaller nurseries without niche markets struggle to compete against larger, more professional and internationally aware businesses that are able to mechanise more and with economy of scale. Such businesses are better able to satisfy the needs of the major retail groups who are likely to exert even greater influence in the years ahead, alongside any potential expansion of niche markets.

Transport and distribution costs are a particular concern to many businesses. Distribution costs will be influenced by rising fuel prices and are likely to increase, although retail consolidation and the development of regional hubs has helped to contain costs in recent years. The challenge for the ornamentals sector is to contain these costs further, particularly given the fragmented nature of its customer base: high UK distribution costs and poor integration currently make it difficult to compete with Dutch supplies.

The Future of UK Horticulture study for the National Horticultural Forum (January 2006) reports '…alongside distribution costs, supply chain logistics are a major issue facing the HNS sector. There is a pressing need to ensure that costs are competitive in relation to import costs'. It goes on to say '…on a UK retail level, centralised distribution depots have resulted in a productivity gain and there is an opportunity to further maximise the effectiveness of regional distribution hubs'. One of principal weaknesses highlighted by a SWOT analysis undertaken during the same study, was that the UK HNS industry is distanced from the end consumer by the retailer and there is a need for better information flow and supply chain communication. Rising transport and energy costs (particularly for protected ornamentals), waning consumer demand and fierce import competition (lower production costs and climatic advantages) were highlighted as critical weaknesses.

The study concluded that '…without cost reduction and the removal of non-value adding processes, there can be no future. Nonetheless, if supply chain efficiencies are achieved, cost structures addressed and sales and marketing strategies reassessed, then there is an opportunity for future successes.

For most UK growers, transport costs are not as high as heating costs so it is more cost effective to procure at least some product from continental sources of supply. A number of leading growers here have also established satellite production bases in southern Europe (or have contracted suppliers) in order to satisfy market demand for year 'round product at a lower cost.
Major retailers also supplement UK supplies with imports, prompting UK suppliers to out-source product from the continent, with the distribution costs absorbed into the overall value of the retail account, traded against the benefit of securing further business with the retailer.

There is a particular issue here however with bulky HNS product such as bare-root trees and specimen grade stock which are less cost effective to ship over longer distances, as compared to say cut flowers or pot plants.

For the ornamentals sector, one of the principal future challenges will be the efficient management of transport and product distribution from several destinations. However, a number of the larger players are responding well to this challenge and using logistics specialists (e.g. nursery stock and patio plants are now frequently shipped to the UK from satellite nurseries situated in Spain and Portugal).

Ready access to a pool of trained labour, experienced and skilled in plant care is a distant memory for many UK nurseries. European suppliers have responded to similar skill shortages by embracing new technology and mechanising more for high input tasks such as potting, order collation and despatch. UK nurseries will need to do the same. Similarly, rising energy and transport costs are leading many producers to review their approach to plant handling and distribution: freight consolidation and co-operative ventures do provide genuine opportunities to reduce such costs but for many, this requires a change in culture to succeed. There is also interest amongst producers of heated crops in alternative energy sources.

Going forward, cost control and margin pressure is likely to be one of the biggest challenges facing growers. Pressure on costs is driven primarily by competition, particularly from strong exporting markets operating from a low cost base: further enlargement of the Euro-zone is likely to exacerbate this in the longer term. Globalisation of the horticultural market means that consolidated and powerful retail customers can readily source product from low cost suppliers and it will be difficult for UK (and, other Western European suppliers) to compete solely on price. Whilst tight control of costs and wastage (including over-production) will remain key, innovation, product availability, quality, customer focus and service will be equally if not more important.

Production and marketing efficiencies linked to clearly defined business strategies will be pivotal to future success, particularly for those suppliers servicing the mass retail market. As joint ventures evolve, they are also likely to embrace the sharing of sales and marketing resources between businesses, as is now happening with freight consolidation and the development of distribution hubs.

There is potential too for extending the scope of freight consolidation and co-operative ventures in the UK to include sharing or centralising of sales, buying, marketing and labour resources. The *Scion* initiative developed successfully by several producers in the south-east, whereby a regular pool of agency labour is shared and trained to the required standard of the nursery group provides a useful insight into how this can work.

Co-operative working also provides greater scope for innovation and exploiting market opportunities provided by new products, for example, the Jubilee strawberry variety recently developed by Berry Gardens (formerly KG Fruits) and only available from them.

Similarly, the Farplants Group is able to finance its own breeding programme and so continues to develop and market new lines of ornamental plants under their own brand. *Spireae* Magic Carpet and *Nemesia* Amelie are leading examples.

Such initiatives are particularly attractive to major retailers, who continually seek new plant products to stimulate interest and drive sales. The high level of innovation that characterise the Dutch flower and plants market are particularly attractive to UK buyers and frequently provides their suppliers with a competitive advantage.

5.2 Industry perspective

Many UK growers recognise that they are at a crossroads, that present ways of conducting business cannot continue and that the main competition is now from imports. This has been highlighted through the recent formation of groups such as the HTA Retail Suppliers Group, whose members are seeking strategies that would help their businesses overcome the constant pressure on prices and margins.

The existing pressure on retail prices from the major suppliers is expected to continue. Some businesses have chosen to merge or relocate in order to survive, moving to an area with better transport links, but not all growers are able to invest the money to do this.

There are several geographical clusters of nurseries in the UK who work together successfully to improve their supply chain arrangements, for example, the Midland Regional Growers (MRG) group, the Anglia Group from the eastern counties and Sussex based Farplants Ltd. Such regional initiatives illustrate the value of nurseries pooling their resources, principally with sales, marketing and product distribution to reduce supply chain costs and raise service levels. The MRG group recently hosted their first Open Day for garden centre buyers, operated along the lines of a trolley fair and bringing together local suppliers and buyers under one roof. The event was held at the group's distribution hub near Pershore, Worcstershire in partnership with local haulier Rick White Logistics and Storage, and such was its success, further Open Days are planned during the year.

The 'Future of UK Horticulture' study highlighted earlier, effectively serves as a 'state of the industry' report, commissioned to point the way forward. In highlighting the many competitive issues now facing the industry, it comments that the report '…should be seen as something of a wake up call for players in UK horticultural production that have not already achieved a high level of professionalism through the supply chain'. It also states that key future success criteria will include '…more willingness to use advanced technology and automation where applicable' and, '..further consolidation of the industry combined with better co-operative ventures'.
Also, that '..the future of UK horticulture will inevitably be based on a smaller group of players but one which is more professionally run: better educated: more internationally aware: more attuned to market needs: more environmentally aware and more grounded in added value activity.

Production of commodities in the UK will have a limited future. Strong supply chain relationships will be of paramount importance'.

Whether or not this analysis proves to be correct, only time will tell but it is indeed a wake up call and there is little doubt that the industry does need to rationalise, work together more and reduce its costs if it is to be competitive and sustainable. More specifically for the nursery stock sector, the report makes the following recommendations for the industry to remain competitive:

- Improve management of market information and production planning in association with key customers

- Develop a more co-operative minded spirit in the sector vis-à-vis production, marketing, planning and logistics in the future

- Compete more effectively with foreign imports (rather than against each other)

- Seek further supply chain efficiencies to control transport and logistics costs

- Focus on application of new technology to reduce production costs

- Work on educating and marketing to the consumer

- Lobby for an industry wide approach to soaring energy costs: tax relief would be advantageous and exploration of alternative energy sources

It also forecasts further, major import competition across the ornamentals sector, most notably from the Netherlands and rising energy costs will pose a particular threat to producers of protected ornamentals.

Introducing greater efficiencies into the ornamentals supply chain through further industry consolidation and joint ventures is clearly considered pivotal to improving industry competitiveness though for some UK producers, this may prove uncomfortable and require something of a culture change.

Some recent industry initiatives however have been encouraging: HDC project CP 22b undertaken by Warwick University and reported in 2005 considered opportunities for an industry standard returnable container pooling system managed by a third party logistics provider for the amenity supply sector to reduce handling costs. In this particular case, most amenity suppliers did not have sufficient order quantities in suitable primary packaging or appropriate delivery profiles to participate sufficiently in the proposed pooling system for it to be viable. Change management issues were also considered to be significant for some of those involved (e.g. supplier co-ordination, adapting to standard reporting and communication systems).

Whilst a cheaper, non-returnable container may prove to be a more viable option for this sector, the project highlighted in principle, the potential for freight consolidation to yield significant savings where it can be successfully integrated with current industry systems.

Another project, being developed by the Midland Regional Growers in conjunction with the Freight Transport Association, aims to establish a regional hub for nursery stock growers in the Worcestershire area.

Early results are encouraging and it is hoped other growers will also participate to increase utilisation, trolley volumes and improve cost effectiveness. Retailers have responded positively too although loading / unloading facilities need to improve at some garden centre locations: lack of vehicle space, parking and health & safety considerations are a concern.

Similarly, Dudley Horticultural Transport Ltd was established six years ago as a Division of Kinglea Nursery Ltd, suppliers of bedding, plug plants and pot plants to independent garden centres and major retailers. Originally, the transport department for the nursery, the company now provides nationwide transport services for other growers too and has set up a successful distribution hub in Essex, on the same site as the nursery. They also have established links with Dutch logistics provider Van der haas, who use the hub for outbound logistics to UK growers. Van der haas have recently entered into a new business venture with the Logistic Flower Centre in Aalsmeer (see www.lfcbv.nl) to develop and expand their logistics services. These include spacious new premises and cross-docking facilities near Boskoop.

Other businesses are struggling to see a way forward and responding to present trading difficulties in different ways. Some are reducing production volumes to help offset the effects of oversupply whilst others are seeking to reduce the number of lines produced, use more traded stock, sub-contract certain crops or increase promotion. The potential of improvements to the supply chain in reducing distribution costs and improving service delivery for UK growers and the challenges in setting up and promoting such logistical change have, for the most part, been largely unexplored.

6.0 Review of the ornamentals supply chain in the UK

6.1 Market place – customer

The ornamentals market is broadly divided into two sectors: retail and amenity.

The retail sector comprises:

- Independent garden centres (single sites or chains)
- DIY multiples / food retailers
- Retail nurseries with sales direct to the public
- Mail order

The amenity sector is made up of sales to landscapers and local authorities.

There is also an increasing market for trade sales (liners and finished stock) as UK suppliers seek to rationalise their own production and contain costs. A significant proportion of the demand for traded product is now met by imports.

6.1.1 The retail sector

Currently, there are around 2,500 garden centre outlets in the UK including retail nurseries. Most of these are independently owned and approximately 75% of retail plant sales take place during the spring months despite several, largely unsuccessful trade initiatives to extend this. Many sales are impulse buys and this tends to favour spring and summer flowering plants. Traditionally, the independents have catered more for the enthusiast, or hobby gardener, whilst the multiples have proved popular with those seeking to combine plant or sundries purchasing with other DIY products i.e., so called ‘marginal gardeners’. However, in recent years, garden centres have seen a considerable increase in the number of ‘marginal gardener’ visits.

The total garden products market in the UK, including growing stock, is estimated to be worth around £5 billion at retail level. Plant sales (which includes bedding, pot plants and hardy nursery stock (trees, shrubs, roses, herbaceous perennials etc but excluding cut flowers) account for around 40% (<£2b) and although the majority of this is still produced in the UK, an increasing volume comes from imports. The balance is covered by manufactured goods such as tools & sundries, growing media and garden furniture / buildings. The retail value of the UK cut flower market is now over £1.3bn with supermarket sales responsible for much of the recent growth in this sector.

In terms of market share, garden centres including retail nurseries continue to enjoy the major share of plant sales (currently, 48% compared to 17% for DIY outlets) and still dominate so far as horticultural stock is concerned. However, the major DIY chains retain a larger share of the manufactured goods market (34% compared to 22% for garden centres and retail nurseries).

Despite long standing concerns that market share (horticultural stock) of independent garden centres / retail nurseries is under threat from the major retailers, there has been little change during the last six years. Many independents have developed niche market opportunities, raised service levels and diversified their retail base in order to sustain market share. However, supermarkets and other multiples also continually seek to expand their product range to complement fresh flower ranges and pre-packed merchandise.

Both the retail and amenity landscape sectors have expanded substantially during the last decade, despite continuing concerns over rising costs and diminishing returns: over-supply and import competition are a particular concern. The last three years have been especially challenging for those supplying garden centres and the ornamentals sector faces stiff competition for it's share of the 'leisure pound' against a backdrop of shifting consumer trends. More flexible opening hours amongst high street retailers, Sunday trading and the success of out of town retail shopping parks as 'leisure destinations' are providing more competition for garden centres.

Although gardening still enjoys quite a high public profile, prompted by the success of lifestyle media programmes and journals and, a continued trend towards outdoor living, consumer demand for plants has faltered. Sales values have shown a gradual decline since 2001. However, a strong start to 2007 boosted sales and provided the industry with renewed optimism although in real terms, this surge in demand was really making up for trade lost during previously disappointing seasons as opposed to producing significant growth.

6.1.2 Trends

One significant outcome from this so far as the mass market is concerned, is that the supply base for ornamental products has followed a similar path to fresh produce and become more polarised. The retail garden market has embraced a similar trend at the point of sale, as major retailers and garden centre chains have begun to dominate. Whilst garden centres and retail nurseries enjoy the majority share of total plant sales, the DIY multiples continue to attract more sales of manufactured goods, although this has fallen in recent years (5% since 2001). A number of leading suppliers have also rationalised their output and adopted a more specialist approach. These trends are likely to continue.

Holland, where production is entirely market driven, continues to be an important source of supply for nursery stock and pot plants to the UK, an increasing proportion of which is now sold direct to UK markets including garden centres. Bedding plants however still feature only limited import activity as they are high volume / low value merchandise and so costly to transport over long distances. This may change in future.

The UK industry is still largely geared to the home market with limited exports of economic significance. Total nursery stock exports are less than 10% of the sectors import value, although some UK suppliers are now seeking new markets to supplement a decline in the home market. The most successful promotional initiatives have involved joint ventures and group participation where several suppliers have linked up to share costs, for example the Association of Liner Producers (ALP).

The majority of DIY Sheds and Food Retailers are continuing to consolidate in their supply base and develop category management for their product supply. There are exceptions, and some major retailers still retain a broad network of suppliers.

The development of 'category management' has created the need for specific skills in the supply base, and in many instances the integration of software systems between customer and supplier. Some growers in the UK have seized on the opportunity to develop their business to meet this growing customer need and diverted resources into customer supply and satisfaction. This has seen a development and growth in 'traded products' and companies focusing specifically on marketing and product development, whilst crop production has been left to production nurseries, not unlike the Dutch system of growers and exporters. This has been most obvious in the UK pot plant sector and supply into the major food retailers, where a small number of companies now 'category manage' the plant product supply into their customers. Such companies are reliant on product development and supply, and products that can be sourced either from the UK or abroad.

The main criteria for product supply are price, availability and quality. To some extent, the development of industry certification schemes in the UK, for example BOPP and with certain plant lines, robust promotion of UK grown products (e.g. poinsettia), would appear to offer advantages for UK growers over European suppliers. However, European suppliers are also meeting these standards and in some respects, particularly concerning environmental issues, perhaps exceeding UK schemes (e.g. the Milieu Programme Sierteelt or 'MPS', a horticultural environmental programme established in the Netherlands in 1995 to promote and help implement best practice).

The independent garden centres whilst more fluid in their approach are also driven by sales and increasingly expect their suppliers to meet their needs promptly, offering fast service and delivery of a wide range of products. Garden centres and growers in the UK have reported increased activity from European sellers who are able to offer a wide range of products at one time, sometimes direct from lorries (the 'Flying Dutchman'), targeting this market. Garden centre chains however often have their products branded, with particular care cards and bar coding. As such, they cannot 'spot buy' product so easily, but do appear to be moving more towards 'category management' style product purchasing.

Future market demand in the garden market will be defined by consumer attitudes and trends, one of which is the recent and steady shift from DIY (Do It Yourself) to DFY (Done for You). Although this may present an opportunity for adding value and more robust pricing, it will however place additional pressures on the supply chain so far as demand for flowering products are concerned.

Looking to the future, it is also likely that greater consumer segmentation will evolve and so the retail market may see a decline in mass-market goods: middle income consumers for example are expected to shrink over the next decade whilst budget and high income consumers increase.

Although this trend is likely to have a greater impact with fresh produce, there are implications for ornamentals. For many producers, this change will involve dealing with at least three groups of customers each with distinct needs and desires: for budget customers, price will be the priority whilst wealthy consumers will seek quality, added value, new plants and product differentiation. High income consumer groups in particular are likely to attract the interests of more suppliers, leading to greater competition from a global market. Volume suppliers of commodity products will effectively be forced to service low income, market segments and low supply chain costs will therefore be essential.

The growth of niche markets such as organic produce, farmers markets and fair trade goods is likely to continue and there is some interest amongst ornamentals producers in moving towards organically grown crops, challenging though this may be. Recent moves towards biological pest control and integrated crop management to reduce pesticide use underline this change of thinking. Similarly, the growth of new routes to market such as internet based shopping systems is likely to increase.

For those servicing the retail garden market, understanding consumer behaviour will become increasingly important and require a new level of market awareness, supply chain management and skills analysis. Almost certainly, the ornamentals retail market will fragment further as the mass middle market declines and further consumer segmentation evolves. However, rather like food and drink which has seen considerable growth and consolidation in recent years, the ornamentals market may effectively evolve into high volume, mass market opportunities led by large scale, organised operators with well defined purchasing structures and customer relationships. And, niche market opportunities for smaller independent perhaps locally based businesses. Whilst this trend fits well strategically, so far as supply chain consolidation is concerned, for others, it is likely to impact on their ability to do this.

6.2 Market place – distribution and costs

6.2.1 Distribution

Many small / medium sized nurseries still operate their own ‘in-house’ vehicle fleet particularly for local deliveries and hire in vehicles during peak periods. Others prefer to outsource at least some of their requirements to a local haulier, sometimes sharing (usually, on an informal basis) with other nurseries or via a hub. For larger volumes and national deliveries, they may also use a specialist carrier. Many nurseries do share the same customer base and area but such joint working arrangements do require careful co-ordination. However, they provide greater flexibility and reduce in-house vehicle costs: during off-peak periods such vehicles (and, drivers) are frequently under used and so are particularly costly. Nurseries servicing the amenity and landscape sector where pallets are the favoured handling system, often use local hauliers to supplement their own transport during busy periods, some of which may be linked to a national pallet distribution network such as Palletline or Palletforce (see section 9.10, Pallet distribution networks).

Some nurseries do regard external hauliers and distribution hubs as costly and where possible prefer to make their own arrangements; some have trailer bases that can be left, loaded and collected as required by both supplier and customer. These are particularly useful for back-loading or where part-loads are involved.

There is some sharing of sales resources too, usually amongst small to medium sized nurseries but at the moment this is quite limited. However, as with shared transport, there are advantages in terms of cost savings and efficiency gains. There is scope to develop this further amongst UK producers. Such arrangements are commonplace on the continent, particularly in Holland. With larger nurseries spread over several sites, sales, order processing and collation are usually co-ordinated centrally. Some have recently invested in new despatch facilities to improve efficiency and help accelerate order processing.

Growers who supply major retailers such as B&Q and Homebase are usually required to use the retailer's distribution hubs where product is checked, sorted and collated before onward distribution to stores. B&Q use specialist logistics providers (Wincanton) for order collection from growers and onward distribution from their hubs (Manchester and Coventry) to stores. Homebase usually require growers to deliver orders into the hubs (Swindon and Northampton) themselves and specialist logistics providers TDG handle onward distribution to stores. Lorries are temperature controlled and usually branded with Homebase or B&Q livery. Tesco also have a distribution hub for horticultural products (Spalding) although some larger orders are delivered direct to stores from the supplier, usually by specialist haulier (Fowler Welch) who will sub-contract to other hauliers during peak periods.

6.2.2 Transport

Many of the larger, more specialist hauliers use a range of vehicles depending on requirements: curtain sided, boxed and temperature controlled (e.g. for cut flower product). Ornamental products differ from edibles in that they are usually finished and ready for sale when collected with limited shelf-life in transit whereas fresh produce is frequently still ripening and confers a little more flexibility. In order to even out peaks and troughs, some freight companies are seeking alternative horticultural cargoes such as sundries, fertilisers, composts and garden furniture. The variety of plants and packing are a concern to hauliers, the latter often taking up valuable space: narrower product bands usually means better utilisation. During busy periods, many hauliers will sub-contract some of their deliveries to other hauliers. Over-loading of trolleys by suppliers and hauliers and, potential plant damage caused by careless handling are also a concern. Very high trolleys can be slow, difficult and dangerous to unload and, a safety hazard to staff, particularly where off-loading facilities are limited.

6.2.3 Cash & carry

Some customers prefer to select and collect their orders direct from the nursery. This arrangement provides advantages to both parties and some nurseries offer discounts for order collection.

Cash ‘n carry sales have also increased dramatically in recent years and are particularly popular with landscapers, who often prefer to choose and collect their own plants to save time. For some nurseries, this arrangement works very well, reduces transport costs and provides ready cash. However, such facilities do need to be serviced and kept tidy. Several larger nurseries now have cash ’n carry sites that also function as distribution hubs, in different parts of the country. These are often located near to major road networks and customer bases. Several importers have similar facilities located in the UK. Some customers collect their orders but prefer the supplier to lift and collate it.

In Holland, Waterdrinker (see www.waterdrinker.nl) run a huge warehouse style cash ‘n carry / export market place located next to the Aalsmeer auction. Most products are bought through the auction, ‘under the clock’. It is an increasingly popular source of supply with UK garden centres and buyers will typically visit each Tuesday and place orders, usually on account, for delivery on Thursday. This then allows time for the plants to be readied for weekend sales. Waterdrinker is effectively a one-stop shop for an exceptionally wide range of plants and so is attractive to many buyers, who visit from as far afield as Croatia, Zagreb and Russia. Transport and distribution is handled by logistics providers and orders are usually paid for in cash or an account, having been checked, scanned, shrink-wrapped and packed onto trolleys before being despatched.

6.2.4 Costs

Surveys of HTA NBIS (Nursery Business Improvement Scheme) members show that transport costs currently average 10-12% of output (sales) when growers use their own transport supplemented by external hauliers, as most nurseries now do, particularly during busy periods. In contrast, the average cost of using a carrier is currently 5-6% of output – a significant difference, but one that will usually involve full loads and single runs.

The higher cost of nurseries using their own transport is due largely to the fact that nursery transport is frequently idle for part of the year and at other times it is used inefficiently, with lorries carrying only part-loads. However, reliable transport companies who have experience of handling ornamental plants and can deliver goods at short notice can be difficult to find. A nursery with its own transport has more control and should be able to offer a higher service level to its customers, but this does cost significantly more. It is also difficult to pass this cost onto customers, in what is a highly competitive and increasingly price sensitive market.

Costings data for transport hubs, whereby freight from different suppliers is consolidated and linked together into full loads (see section 9.1 Freight consolidation) is not yet available but they are currently thought to be similar to nurseries using their own transport or hauliers, probably slightly less. However, as their use and, in turn, the volume of goods delivered through them increases, there will be opportunities for significant savings through economies of scale and improved efficiency. Conversely, nursery transport costs will almost certainly rise and so hubs are likely to be the way forward, particularly in areas where there are geographical clusters of growers able and willing to share transport.

A further and significant saving for growers using hubs lies in the outsourcing of the transport management function and its (considerable) associated costs, most notably, labour, lorries and transport planning. There is also an important environmental dividend resulting from less traffic and fewer 'plant miles' as a result of using hubs.

The benefits of using transport hubs are discussed in more detail in section 9.1.2 (Advantages of consolidation) but central to their success are the efficiency gains achieved through much better utilisation of lorries and despatch resources. Potentially, they provide genuine opportunities for growers to share costs and make significant savings, whilst providing improved service levels to customers (fewer deliveries to handle and process). Going forward, a national network of regional hubs run by professional carriers would be able to provide a readily available and reliable delivery system for ornamental plant products. However, volume is the key to efficient utilisation and ultimately, their success. At present, many growers are reluctant to abandon their present transport arrangements until hubs have proved they can cope with all their deliveries. As such, they are only using them during busy periods rather than committing volume to them for the whole season. As their use increases, significant savings for growers will accrue.

So far as nursery transport is concerned, for small to medium sized nurseries typically using a new 7.5T delivery lorry, the purchase cost is likely to be around £32K, usually written off over a five year period (approximately £6K / year). Resale value after five years will be around £12K. Road tax and insurance are in the region of £800 / year with MOT / servicing costs running at around £2K / year. Fuel costs will vary but have risen by around 20% during the last eighteen months or so. Typically, they are likely to average 30p / mile, based on 15 mpg. On average, the total running cost for this type of vehicle is in the region of £15 / hour, all costs, including driver (or, in terms of cost per annum for keeping such a vehicle on a 3-5 year lease on the road, circa £10.5K).

Driver costs are more difficult to measure and will vary depending on whether they are employed directly and do other work too or, are an agency driver employed as necessary but usually full-time during peak periods: costs for agency drivers are typically £10 / hour.

Charging mechanisms for out-sourced or contract transport using carriers vary. Some hauliers and suppliers negotiate a flat charge out rate depending on vehicle size, typically between £400 - £450 / day. Other hauliers work on a rate per trolley, which reduces as volume, and in turn utilisation, increase. This encourages growers to be efficient and group together where possible. Some hauliers charge a fixed trolley rate, based on mileage or post code or the anticipated or agreed number of weekly 'drops': e.g. for a weekly drop of 100 trolleys, the rate is likely to be around £40 / trolley to anywhere in the UK. This can be reduced down to £25 / trolley where delivery requirements involve fewer drops and can be linked with other suppliers, principally by back-loading so that vehicles do not return empty. In essence, this is the key to cost effective distribution, although it does depend on order destinations.

Some hauliers also have a sliding scale of charges per trolley linked to volume and post codes. Essentially, the greater the trolley volume the better the utilisation and the lower the charge-out rate. Shorter distances and fewer drops reduce the trolley rate. Deliveries from Europe, where fuel costs are generally <30% lower than in the UK (= 65p/litre for haulage), are usually back-loaded.

Whilst it is difficult to provide a detailed breakdown of supply chain costs for Dutch suppliers as compared to the UK, the dynamics which influence such costs are very similar, i.e. trolley volume, distance and number of drops. Specialist carriers with good geographic coverage are better able to 'flex' and deal with more drops, small volumes and short lead-times. Typically, the cost of transporting a Danish trolley from Holland to the UK would be in the region of £23-26 and so not widely different to that which a UK supplier might pay where they are linking with other suppliers. Although, in the UK this can be expected to rise to around £40 / trolley (e.g. for a set rate based on 100 trolleys/ week) where they are unable to share transport.

In essence, there is little price differential between Holland and the UK where shared transport and full loads of high value product prevails. Principally, this is due to better co-ordination throughout their supply chain, which features a far higher degree of integration and specialisation than in the UK. Also, a much greater level automation, which in turn keeps labour costs down. The efficiency gains and cost savings which emanate from such integration, are the key to Dutch suppliers remaining so competitive in the UK, despite the greater distances and journey times involved.

For Dutch young plant suppliers able to offer large volumes requiring relatively little space, transport costs are usually very competitive but for those supplying large plants, for example nursery stock specimens, the economics are more challenging. Similarly, for the likes of bedding and pot bedding lines where there are fewer specialised nurseries in the Netherlands growing such product and so their operating costs are not significantly lower than those of UK producers. However, where nurseries have specialised, operating costs can be much lower than in the UK. Many are intensive family based owned units clustered together, able and willing to share transport and, with relatively low overhead costs. Such suppliers frequently link together to distribute product through exporters / hauliers and so are able to supply UK markets with full loads very competitively.

6.2.5 Reducing costs

So far as reducing distribution costs are concerned, the principal aim with each delivery is to achieve high utilisation by making maximum use of lorry space and wherever possible, ensure full loads are used: back-loading is pivotal to achieving this and allows carriers to offer competitive trolley rates. The number of delivery points ('drops') should also be minimised. Nation-wide deliveries in the UK can be as low as £25 / trolley, based on agreed volumes but costs can rise to £50 or even £100 / trolley where small orders and long distances are involved. Hauliers with good geographic coverage and high utilisation are able to provide good service levels at competitive rates.

Multi-drops of small loads are less efficient and more costly, particularly when dispersed over a wide geographic area, less frequently covered by hauliers. This is a particular problem for both suppliers and hauliers during off-peak periods when garden centres often require more frequent deliveries of small numbers to top-up existing stock levels. Efficient route planning is therefore crucial: some hauliers are unwilling to take incomplete loads. Equally, last minute orders from garden centres can pose real problems for nurseries and hauliers alike: retail customers in particular now require shorter lead-times. Nurseries should review haulier arrangements regularly and 'shop around': the transport market is competitive and local hauliers are not necessarily the cheapest. To a large degree, freight consolidation via hubs would help to offset some of these problems as hauliers would be able to establish greater geographic coverage and more trolley volume and with this, the flexibility to handle smaller drops with short lead-times.

Clearly, the principal concern with regard to transport and supply chain management going forward are rising costs and declining returns: this was very apparent from the interviews conducted with suppliers during this project. Some growers spoke of the need to merge or link together more to improve transport efficiencies and share costs but there were concerns over licensing, insurance requirements and livery demands. Some of the larger companies including those on the continent have largely dispensed with their own transport fleet other than for local requirements and now use specialist hauliers. Dutch growers for example outsource almost all of their delivery requirements to collective (shared) transport services. This is particularly common when delivering plants to the auctions, either for sale under the clock or for collection by customers, when the auction then functions as a distribution hub. Exporters, who concentrate on sales and regard growing as a distraction, also use professional carriers for deliveries and, where necessary, collections (e.g. from the auctions).

6.2.6 Delivery charges

Arrangements for delivery charges by growers to customers vary with order size, distance and market sector. In the amenity sector, local deliveries may be free, particularly for large orders. However, for longer distances and national deliveries, some sort of charge is usually made: typically, there may be a scale of charges linked to post codes and / or order value. Some suppliers have a minimum order size to increase utilisation and reduce delivery costs. Orders below this threshold usually incur a delivery charge.

Garden centres do not usually expect to pay for order deliveries, believing that this cost is covered in what they are paying for the product (though in reality, it seldom is). It is difficult to change this situation and persuade garden centres to accept delivery charges but given spiralling transport costs, things may have to change, either by growers seeking better prices or by gradually introducing some form of delivery charge. Even for large-scale major suppliers, servicing costs to garden centres, particularly widely dispersed independents, can equate be as high as 20% of total costs. For this reason, some suppliers prefer to deal with the major retail groups where the margin may be smaller but stock turnover is quicker and order quantities are greater.

6.2.7 Seasonality and product handling

The main sales period for the retail market is March to May, during which the three spring bank holidays including Easter take place. For many nurseries who sell to garden centres, typically <75% of sales take place during this period. Fine spring weather is therefore crucial as lost trade during this period is rarely recovered later in the year. Most garden centre orders arrive direct from the nursery although there is more use of distribution hubs: orders for major retailers are almost always delivered to a central distribution hub for collation and onward distribution to the store by the retailers preferred haulier. Keeping track of trolleys and shelves to ensure safe and prompt return is a particular challenge especially with customers requiring shorter lead times, although computer software packages can be used to help with this.

Danish trolleys are the most common handling system used by those supplying the retail market. Whilst these can be difficult to handle, particularly in nursery situations and on uneven surfaces, they do provide an industry standard and degree of commonality around which transport arrangements can be made. Small orders unsuitable for Danish trolleys are usually boxed and despatched by courier (e.g. Inter-link / Parcel-force). The quality of packaging (and, packing) is important, as boxed products are generally more prone to damage, potentially leading to higher wastage. The wide variety of plant shapes and sizes frequently complicates order packing and can reduce space utilisation: many nurseries have hundreds of different varieties.

Product for amenity sales are usually packed and despatched using various types of pallets, usually open on one side and made from wire and steel. Cardboard collars on wooden pallets are also used but are more prone to damage and so used less. Both systems however require careful packing by nursery staff. Return of pallets can be an issue and there is interest in using some form of non-returnable / disposable system. Large trees are a particular problem, particularly bare-root and are usually wrapped and packed separately before being loaded with the rest of the order. Traditionally, most amenity sales occurred between October and March and to a degree still do, although the wider use of container-grown product allows year ‘round planting and sales. This is an increasing feature of the landscape market. Pallet distribution networks (e.g. Palletline) are increasingly used to consolidate freight and reduce costs.

A range of computer software packages are used for order processing: some nurseries use specialist software to schedule and plan orders whilst others use simple spreadsheet formats. Those servicing major retail groups are required to use specified order processing and invoicing software: most commonly, Electronic Direct Invoicing (EDI) software for invoicing.

6.2.8 Major retailer’s perspective

Retail giants such as B&Q and Homebase are now firmly established as major players in the ornamentals market and are highly organised in the sphere of supply chain management, using distribution hubs to consolidate freight from suppliers before onward transport to stores.

B&Q have two hubs (Manchester and Coventry) for horticultural products serving 320 nationwide stores and six other consolidation centres handling non-horticultural goods. Homebase also operate two horticultural hubs (Swindon and Northampton) to meet the needs of their stores. They each use specialist providers for their logistics requirements: B&Q primarily use Wincanton Logistics whilst Homebase use TDG, amongst others. Lorries are usually liveried with the retailers brand and are temperature controlled (as are the hubs).

Both retailer's source product from European suppliers as well as the UK and deal direct with suppliers. Most crops are grown to order and in B&Q's case are usually signed off the previous September. Each would prefer to buy more from UK growers but cite several reasons for buying elsewhere:

- Higher levels of service
- More flexible and consistent in terms of availability of supply and quality
- Quick, responsive and customer focused with good market research
- More innovative in terms of new products, packaging and presentational ideas, including developing suggestions from retailers

Some product lines however can be too soft and almost all of B&Q's bedding plant requirements and, around 60% of their nursery stock requirement are currently met by UK producers.

Both retailers see distribution hubs as the way ahead and may develop these further. Direct delivery of product from growers to stores is unlikely at present though this could change where large volumes are involved and there is a concentration of stores requiring the same product. However, greater lorry traffic at stores would be a concern. Also, quality control and traceability may be more difficult to manage if product goes direct to stores. For growers, deliveries to retail hubs also offer the advantage of a single and consistent quality control point.

Both retailers see benefits in grower's co-ordinating their transport arrangements and using hubs to improve efficiency across the board and, reduce freight traffic at their own hubs. Logistics is frequently a distraction for most growers and is best dealt with by specialists. However, traceability and consistency of product quality are key and require careful management. Both are also likely to consolidate their supply base to reduce costs and see growers trading more stock to meet changing requirements.

One of the main difficulties retailers such as B&Q have with suppliers is lack of customer focus and flexibility when pressure is on during peak periods. A better understanding of the market and more innovative thinking would in their view, help ease this problem and reduce the problem of surplus stock. Major retailers also see a need for greater and more consistent market research in the UK although the HTA Garden Industry Monitor (GIM) is now helping to address this.

6.2.9 Grower co-operatives

Grower co-operatives or nursery groups are not new to UK horticulture. In the ornamentals sector, Sussex based Farplants Ltd have been established for over twenty years and the Anglia Group based in the eastern counties began life in 1965. In the soft fruit sector, grower consortium KG Fruits (now Berry Gardens) was set up in 1972 in response to declining returns and rising costs. There are other examples of varying structures and size, some of which function more as marketing co-operatives (most notably, in the fresh produce sector) than joint ventures which embrace all aspects of the supply chain. Some have been more progressive than others but the concept of pooling resources for mutual benefit can work well, providing the participants are committed and work within an agreed operational structure which services the need of the group to the benefit of all. Potentially, some participants may fear a loss of identity or autonomy but the benefits of group working warrant further consideration.

The issues confronting the soft fruit sector during the 1970's and which prompted the formation of KG Fruits are not dissimilar to those now faced by the ornamentals sector, namely a rising cost base and declining returns. Eight growers recognised at the time that there was strength in numbers and decided to pool their resources. Now, 35 years later, the organisation has grown and has more than 80 members.

The group is profit making and owned by the grower members in proportion to the sales that go through the company, with a present cap of 9%. It delivers a collective strength in the market place for its members by being grower owned and committed to the commercial well-being of its members. It also has significant buying power and sufficient resources to invest in professional staff, R&D, best practice training and, to develop links with European partners for mutual gain. In 2006, the group had achieved a turnover of £130m and a 42% share of the soft fruits market from May to October. Members are spread nationally, from Scotland to Sussex and their customers include Sainsburys, Tesco, Asda, Waitrose, M&S, the Co-op and Morrisons.

Although, KG Fruits began as a buying and marketing group, its remit has evolved to embrace significant R&D and ownership of varieties. Currently, the group's annual research and marketing spend is £1m a year and several commercially significant soft fruit varieties, now focused on the less price sensitive, premium end of the market have emerged from this initiative. Earlier this year, the group merged with two other organisations (Discolls, North America's largest production and marketing group and, Alconeras, Spain's largest privately owned production group) to form Berry Gardens. The new group will now combine a world class breeding programme with European marketing opportunities and year-round berry marketing to UK supermarkets. Following the merger, the new groups predicted turnover for 2007 is £200m.

Members of Berry Gardens will be offered exclusive berry varieties, the best plant material and best overall return for the produce. The new group now also works with grower members on production planning to develop an orderly marketing plan that meets the expectations of the market and the grower. Growers also now own a stronger marketing organisation and can share technical information to drive production, improve quality and lower costs.

The success of this group would not have been possible without strong leadership, vision and sound strategic management, able to ‘sell’ the concept to the market. Though costly at the time, the decision to appoint a dedicated, skilled and professional executive has proved to be the key to the group’s success. Clearly, there is scope for the ornamentals sector, to learn from this initiative and consider how similar business models can be developed going forward.

The Farplants group is a fully fledged grower co-operative jointly owned by member nurseries. It is a particularly good example of how nurseries can work well together, develop a brand and successfully penetrate the highly competitive garden centre market. Established over twenty years ago, the group now has a retail sales value approaching £35m and comprises five nurseries, each specialising in a range of complementary, non-competing crops. The supply of herbaceous perennials, bedding plants and shrubs are ‘shared’ between several sites with each nursery supplying part of the range but not all of it, so they remain non-competing. Production of pot bulbs and herbs is located on a single site. Little or no buying in is required although some production is contracted out to complete the range.

Collectively, the Farplants group grows around 9 million plants each year, employs over 450 staff during peak periods and is now one of the largest suppliers of garden plants to the retail market in the UK. The strategic management of the group is overseen by an Operations Board supported by regular technical forums, sales, despatch and production meetings. Each of the member nurseries is represented at these meetings.

Currently, Farplants Ltd supply some 1,200 garden centre outlets, including 300 stores belonging to retail giant B&Q. Although major retailers like B&Q are sometimes seen as all consuming and demanding to service, Farplants believe there are advantages in dealing with bigger chains. For example, B&Q do notify the group of order requirements well in advance and costs are easy to standardise. Also, as the stores are grouped into composite sizes with standard business and IT systems, they are consistent and easy to work with, unlike some of the independent garden centres where communications are less high tech and slower.

Recognising that new products are the lifeblood of most industries, the group also has its own extensive breeding programme, from which award winning plants such as *Spireae* Magic Carpet have come to the market. *Nemesia* Amelie and *Scabious* Butterfly Blue are other, notable examples.

So far as operational management is concerned, the production sites are managed on a day to day basis as discrete specialist units, whilst all sales, promotion and marketing activities are centralised and co-ordinated through the group under the Farplants brand at the Walberton Head Office. Purchasing of pots, point-of-sale labels, growing media, mobile phones and hiring of agency labour are also done centrally and negotiated using the group’s size and buying power. Order packing is still done individually on the nurseries but a more efficient, centrally co-ordinated system is planned for the near future.

Order distribution and quality control are centred at nearby Littlehampton although new facilities with extra capacity are planned and will be located at Walberton. All delivery transport is provided by specialist third party hauliers and 80% of sales turnover takes place during the busy February to May period. Temperature controlled storage is not considered cost effective at present given the relatively small percentage of time this may be required. Efficient freight consolidation and load planning allows twice weekly deliveries to be made during the peak season, three or four for larger customers. Multi-drops, small loads and 'just-in time' service levels can also be accommodated. Order collation and despatch for B&Q is handled separately on account of the large volumes involved and collected from the Distribution Centre on behalf of B&Q by the retailers preferred supplier, Wincanton Logistics. Orders are then taken to one or both of B&Q's consolidation hubs for sorting and onward transport to store.

The Anglia Group comprises three nursery members but functions quite differently to Farplants. Operationally, the nurseries are more autonomous, retaining their own identity and brand. Essentially, the group is a marketing and distribution co-operative with a shared buying function (pots, peat, labels etc). Each nursery specialises in certain crop groups and has its own sales staff, enabling them to react quickly, directly and flexibly to customer requirements. The members have retained a much higher degree of operational autonomy whilst sharing (some) marketing, distribution and, more recently, buying activities. Whilst the group do not share a common brand as such, there is a plant brand ('Temptations') which is shared and promoted by the members as a whole, and the group has its own logo.

Collectively, the Anglia group supplies around 1200 garden centre outlets (mainly independents, some groups and a major DIY chain). Orders are consolidated and despatched together to reduce costs and simplify deliveries to customers (one delivery instead of three). However, each nursery packs its own orders on site. All deliveries are handled by a local haulier. Each member prepares their own promotional literature but at the same time and in a similar style, featuring the group logo. Going forward, it is possible that new members may join the group but the implications of this, particularly in respect of logistics require careful consideration. For example, the demands of dealing with the seasonal peaks and troughs are accentuated when greater volumes are involved. This is particularly so for hauliers, who usually require alternative cargoes to help balance things out during the quieter periods whilst ensuring adequate resources are available to cope with rapid surges in demand during peak periods.

Other examples of growers in the ornamentals sector working together include the Association of Liner Producers (ALP) whose focus is on the sales and marketing of young plants and, Spalding based Linc-Up whose members supply a range of non-competing finished plants (e.g. heathers, herbaceous, conifers and climbers) to garden centres. In each case, members work together on promotional activities but retain a high degree of operational autonomy and, their own identity.

Some nurseries, particularly those with established brands may struggle to cope with the loss of autonomy and identity which naturally arises when committing to a group structure, particularly one as centric as the Farplants model, although this clearly works well because the participants are committed and non-competing. A looser, more flexible structure such as the Anglia Group model may be the way forward for those seeking co-operative ventures whilst preferring to retain a greater degree of autonomy. Either way, whilst co-operative ventures will not be the solution for all, they may point the way forward for others, particularly where there are geographical clusters of growers or, for those struggling to compete on their own in what is, and will increasingly become, a crowded and global market.

In effect, both examples build on the concept of consolidation and shared resources, as does the transport hub being pioneered by the Midland Regional Growers. However, the latter model still features a significant degree of internal competition for market share whilst the Farplants and Anglia group models do not. The Farplants co-operative integrates all primary supply chain functions from crop production, sales and procurement through to despatch. Such joint ventures are ‘all or nothing’ and herein lies perhaps the greatest challenge for those considering this way forward.

For group nurseries to succeed, much will also depend on the leading personalities involved, as operating within a group structure requires a degree of compromise, particularly in terms of agreeing who grows what as the participating nurseries must be non-competing. Some growers will find this easier to accept than to others. Some may recognise the intellectual argument for change but have difficulty accepting it on an emotional level. Also important is the quality standard agreed by the group, which must consistent throughout and in line with customer requirements. If plant quality and service levels fall short, then it reflects on the entire group and not just the offending member.

So, there are many things to be aware of when considering group nurseries and they are unlikely to be the solution for everyone. However, their advantages are considerable, not least because of their collective size, buying power and economy of scale. Most importantly, members work together and do not compete against each other. They are also able to share costs and offer the market a bigger range and greater volume than if working as individuals. Whilst it may be unrealistic to expect the UK industry to fully embrace such initiatives, given its tradition and somewhat disparate, geographically fragmented structure, it is an option some growers may have to consider if they are to consolidate and restore profitability.

7.0 Comparison to European supply chain

7.1 European competition

European imports of horticultural goods remain a significant feature of the ornamentals sector and have risen dramatically in recent years as illustrated by Table 2.

Table 2. Value of UK imports (£ m)

	1995	1997	1999	2001	2003	2005
Ornamentals	456,597	461,546	553,147	588,494	870,182	870,367

Source: Defra Basic Horticultural Statistics (includes bulbs and cut flowers)

Using Holland as a specific example of a key exporter of ornamental plants into the UK, the figures in Table 3 illustrate the recent growth in import competition, particularly with cut flowers and pot plants.

Table 3. Exports from Holland into the UK (€ m)

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Cut flowers & pot plants	438	474	585	651	729	741	797	832	872
Bulbs	56	54	58	64	63	67	63	60	61
Hardy nursery stock	65	69	75	80	85	89	89	86	88

(Figures: Dutch Agricultural Wholesale Board)

The success of the Dutch supply chain is driven by several factors, most notably:

- Specialisation – production of just a few plant types per nursery
- Mechanisation – made easier through specialisation and mono-cropping
- Co-operation – in marketing, sales and logistics and co-ordination particularly via the auction system (www.floraholland.nl)
- Concentration - of growers (i.e. trees, nursery stock, pot plants etc). Geographical clustering enables closer trading links and effective co-ordination
- Consolidation – of logistics and in particular freight transport provides volume, coverage and flexibility to maximise efficiency of distribution and, cope with short lead-times
- Marketing & promotion – strong international focus and support via auction network and Flower Council of Holland (www.flowercouncil.org)
- Organisation - highly organised transport planning and distribution

- Innovation – an established reputation amongst foreign buyers for its unique product range, high quality, one-stop shop availability and innovative breeding and promotional programmes, that underpin a continuous stream of new flower and plant products. Breeders, researchers and growers are closely integrated

Proximity to target markets most notably those of the UK and Germany, excellent internal communications, competitive pricing and a clearly defined focus on sales, marketing and promotion also underpin Holland's success. In effect the whole country acts as a distribution and trading hub. New technology and automation have also been embraced by the Dutch to reduce labour costs and improve efficiency across the supply chain. Table 4 shows the total value of exports from the Netherlands in recent years: cut flowers and pot plants have seen significant growth.

Table 4 – Exports from the Netherlands (€ m, total values)

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Cut flowers & pot plants	3773	3809	4188	4327	4569	4763	4868	5023	5189
Bulbs	644	657	678	702	674	643	620	616	645
Hardy nursery stock	408	401	412	402	405	425	425	406	400

(Figures: Dutch Agricultural Wholesale Board)

Although over-production has also been an issue for Holland, their unique marketing structure and ready access to foreign markets enables them to absorb and deal with this better than UK producers, some of whom are now struggling with the consequences of over-supply (i.e. high waste, poor returns).

Labour and sundries costs are higher in the UK than Holland and indeed other European countries. However, the cost base of Dutch suppliers is increasing albeit at a slower rate than in the UK. Labour costs, land prices and energy bills are a particular concern and this may enable other low cost producers for example in Eastern Europe, to penetrate UK and other Western European markets as effectively as the Dutch.

The auction system that has served the Netherlands so well for many years is also changing as the structure of its supply chain evolves to meet changing demands. As with fresh produce, an increasing volume of ornamental product is now direct marketed to UK retailers or distributed through larger transport hubs. In effect, auctions such as Aalsmeer now also act as distribution hubs where product is delivered to and collected from, as distinct from being sold 'under the clock'.

European competitors are also not only supplying the major retailers but also increasingly supplying local, independent retailers who have traditionally bought from UK growers. They appear able to offer better flexibility of supply and a wider range of products delivered at any one time.

Although the Netherlands continues to be the principal source of imports to the UK, significant volumes now come from France (e.g. liners), Belgium, Denmark, Germany (typically, around 30% of total output is now exported), Italy and, increasingly, Poland. Continental producers, particularly the Dutch, show far greater integration in respect of sales, distribution and plant trading than UK suppliers and have the advantage of established trading links, contacts and market outlets. Clearly, there are opportunities and considerable scope for UK producers in respect of enhanced import substitution but for this to happen, the supply chain needs to change.

Interestingly, the Netherlands is second only to the UK in the low levels of direct state aid it provides to business and commerce although there are more hidden forms of aid available, such as various forms of tax shelters. Via this route, the Dutch have created a favourable tax climate for international businesses.

One of the great advantages of operating from the Netherlands is its progressive international tax position and its flexibility is unequalled in other European countries. From a wide network of tax treaties to the special availability of tax rulings, the Netherlands boasts a robust assortment of factors that will benefit international tax planning. The Netherlands' long tradition as a trading nation endures as the Dutch government maintains a competitive tax regime that attracts entrepreneurs and foreign investment to The Netherlands. (www.ibf.nl).

The success of the Dutch distribution model is founded on a co-operative marketing structure, which is highly integrated and underpinned by a network of densely clustered specialist growers and exporters. Direct sales to garden centres are less common in Holland, because unlike their UK counterparts, Dutch growers don't have the product range and so in turn the volume, to support this. However, volume production of specialist crops in Holland lends itself perfectly to a more centralised, co-operative marketing and distribution structure which has good coverage and so is able to deliver flexible service to a consistently high level. Although European supply chains appear to be longer than the traditionally more direct UK model, each 'link' is considered to either add value or reduce cost.

The UK and, increasingly, German markets will continue to be a top priority for Dutch suppliers going forward as both are seen as high value, easy to access, with an easily identifiable customer base. If UK producers can improve their performance level they will be able to compete more effectively with continental suppliers such as the Dutch, who are now abandoning the auction system at least to some extent and dealing more directly with UK customers. In an increasingly global market, it is important that UK suppliers recognise that it is not other UK growers who are their real competitors.

7.2 Overview

The Netherlands and Belgium export more than $19 billion a year in horticultural products and together are the world's largest exporter of ornamental plants.

A good geographical location embracing clusters of largely specialist growers and importers, coupled with an excellent supplier, sales, marketing and distribution infrastructure are key factors in their success. However, increasingly, a considerable number of Dutch exports are not 'home-grown' and have instead been imported from other countries, most notably Denmark, Germany, Italy, Spain and, increasingly Eastern Europe and Poland in particular, where production costs remain comparatively low. Although Dutch production remains significant, an increasing proportion of their export requirements are also contract grown elsewhere, mainly by specialist nurseries (e.g. trees, hedging, rose rootstocks). The procurement of product from such a wide and competitive supply base enables Dutch exporters to focus on, and respond quickly to market requirements.

World export in plants (live trees and other plants; bulbs; cut flowers and ornamental foliage) was $12.4 billion in 2003. Over sixty percent, or $7.6 billion worth, was exported via the Netherlands, and the vast majority ($6.3 billion worth) were Dutch-produced. Exports were dominated by cut flowers (37%), ornamental plants (29%) and bulbs (10%). Approximately 60 percent of plant exports are destined for Germany, the UK and France. Only 4% reaches the US market.

The auction system still provides an important link between the grower and traders of flowers and plants although this is changing as more customers, particularly the major retail groups, opt to deal direct with their suppliers. Increasingly, specialist transport operators are used by both parties to move product from the production site(s) and third party suppliers to the stores, usually via distribution hubs. Major retailer groups like B&Q and Homebase increasingly source product from Europe and deal direct with suppliers.

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Dutch logistics specialist Van der haas, based near Delf specialise in handling ornamental products, having recently acquired this business from Visbeen en Zn. B.V who now focus on handling fresh produce. They have an established infrastructure for the UK and a distribution hub in Boskoop, central to where many of their customers are based. They make frequent deliveries to the UK, either direct to garden centres or via hubs, which also facilitate back-loading to improve utilisation. Upto 50% of their business now involves dealing with UK customers who source product from the continent and mainly the Netherlands. They also handle significant volumes of young plants for trade sales, between the Netherlands and the UK.

Van der haas Commercial Manager Tom Butter feels that UK growers will increasingly need to work in a 'retail way', rethink their distribution, co-operate more and centralise their product output to customers via hubs. Larger producers and garden centre groups here are now considering setting up their own distribution hubs to improve efficiency and reduce costs. He cites inexperience amongst transport operators in handling horticultural product and in turn, lack of volume and poor utilisation as early issues requiring attention as well as dealing with the seasonal nature of the trade.

Branding and livery needs are also an issue that growers considering contract haulage and transport sharing via hubs will need to address. According to Tom Butter, they can either take a 'commercial view' and retain their own transport with livery (usually, more costly), or they can take a 'logistical view'. This will involve outsourcing their logistics needs but working more closely with their competitors and to some extent, sacrificing some of their own commercial interests, for at least some of the time. This approach is considered to be more cost efficient, providing good quality, independent transport operators are used. Essentially, there is a trade off between the two approaches and what is best for one grower may not be for another. Some nurseries of course usually employ a local haulier to collect and deliver product whilst retaining their own livery (e.g. curtain sided vehicles) and full control.

Many growers in the Netherlands are still affiliated to one of the auctions although they are now selling product to a wider market either direct or via export traders, so allowing buyers more leeway to random purchase. Increasingly, the auction infrastructure is used by traders for the collation and distribution of product, so in effect the auction acts as a distribution hub. This is particularly true for companies who supply and distribute a diverse range of product.

Companies who are specialist producers (e.g. young plant suppliers such as Florensis, Syngenta and S&B) usually use their own facilities and distribute product from one point using third party logistics providers. Syngenta Ltd for example now has a new distribution centre which receives products from their different production sites and collates / distributes them to customers from one site. A high level of automation has helped to significantly reduce their labour requirements.

The auctions are in fact growers' co-operatives. Membership of an auction obliges growers to sell all their production through the auction. As a result, the auctions concentrate supply and demand of flowers and plants in the same area. The development of highly efficient and centrally located auctions has led many foreign producers to choose to sell their products through the Dutch flower auctions, despite the high transport costs. All major imported flowers are now supplied year-round. Foreign suppliers must be affiliated in order to supply to the auction. Imported flowers must also meet the same quality criteria as the Dutch products.

Auctions were also the main link between growers and traders in fresh produce but today the vast majority is sold directly by grower organisations. For fresh fruit, some 50 percent is sold directly off-farm to traders and the other half is sold via co-operatives.

As well as the familiar clock auctions, a busy forward contracts (advance buying) market has also evolved and many flower and plant products can now be ordered through the internet, allowing buyers to receive orders direct from the supplier so helping to ensure they are nursery fresh.

Table 5: Overview of Dutch and Belgium flower / plant auctions

Name	Turnover in $m	Website
Flora Holland	1,988	www.floraholland.nl
Aalsmeer	1,796	www.vba.nl
Oost-Nederland	71	www.von.nl
Vleuten	26	www.bw.nl
Euroveiling	34	www.euroveiling.be

Many European companies also employ sales agents located in target markets such as the UK. Notable examples of suppliers who use agents in this way include Andre Briant (liners) and Plandorex in France and, Dutch based Kolff Plants. Such agents may be employed on a full or part-time basis. Boskoop based nursery stock exporter Hans van Veen BV deploys three full-time salesmen in the UK for four days each week. Good agents with an established client base are a highly effective means of networking, promoting and selling product into key markets. They are also able to quickly feed back market intelligence, provide a single, convenient and relatively local contact point for clients and, help ensure quick turn-around of orders. Visits to suppliers by UK buyers to view stock are also arranged by the agent. The role of sales agents should not to be underestimated as they are an integral part of European supply networks and the fact that a number of growers are represented by individual agents makes this system of trading efficient for the customer. It is easier to deal with one supplier than several different ones.

Effective communication with customers is also vitally important to European suppliers and the Dutch are particularly competent in this respect: most exporters for example speak good English and liase regularly with their clients. They also have effective web-sites to promote and market product and use e-mail extensively for rapid order processing.

The European retail market is quite different to that in the UK, so far as the dominance or otherwise of food retailers and sheds are concerned. However, within the main supply regions of the Netherlands and southern Europe for example, there are dense populations of nurseries. In the Netherlands particularly, regions tend to focus on certain crops (e.g. the Westland district for protected glasshouse cropping, whilst Boskoop and Zundert produce more nursery stock). The shear scale of production in these regions coupled with their close proximity means distribution costs can be competitive.

Production is still to some extent structured around the marketing and distribution systems employed via the auctions, particularly with cut flower and pot plant products although these no longer dominate as they once did. The auctions provide growers with a direct sales outlet for their product and as highlighted earlier, they are increasingly gearing their role towards marketing and distribution. This is most evident at the largest auction, Flora Holland, located in Rijnsburg and, the Aalsmeer flower auction, where companies are actively marketing their ‘one stop shop’ ability for customers.

This is particularly appealing to the UK market, where category management systems suit this type of approach.

The auctions act in essence as a large distribution hub where product is collated prior to despatch.

Belgium, Holland (bedding, houseplants and container plants), Germany (ornamental trees), Denmark (Christmas trees) and France (young plants) remain important sources of supply for the UK with increasing volumes also emerging from Italy particularly of specimen grade nursery stock for garden centre sales and prestige landscape projects.

Direct van and lorry sales of ornamental products by some Dutch exporters to UK wholesalers and retailers have risen in recent years. Known as the 'Flying Dutchmen', the drivers double up as salesmen and sell direct from the lorry until they have sold out, when they return for more. This type of selling is used by some exporters to showcase products and secure orders, i.e. what is sold from the lorry is effectively sample stock against which additional orders are taken. This approach to sales is seen as divisive by other exporters and as such is unpopular with some. It also has limitations so far as range, volume and service levels are concerned and so is expected to level out.

Dutch supply chains are usually more involved and less direct than the traditional UK system, where growers focus on the home market and deal direct with customers. Typically, Dutch nursery stock supply chains frequently comprise:

Grower > collective transport > auction / hub / cash & carry > exporter > wholesaler > retailer (e.g. garden centre)

The floriculture supply chain is longer still, comprising as it often does:

Breeder > propagator > grower > auction / hub / cash & carry > exporter > wholesaler > retailer (e.g. florist)

Arguably, this rather protracted supply chain is more costly than the shorter UK model but is linked to a more structured, closely integrated and co-operative ethos around which the Dutch industry is based. Each link in the chain has a clearly defined function, particularly in respect of logistics providers and is not distracted by other tasks: each link is in effect, either adding value or removing cost. Whilst it may be unrealistic for the UK to adopt a similar model due to its disparate nature and more fragmented marketing structures, there are some aspects of the Dutch system that warrant closer examination. In particular, the potential of freight consolidation, distribution hubs and much greater joined up thinking in respect of sales and marketing, so that one cross-cuts more closely with the other.

The Floerac group is a good example of a major importer now selling direct to UK markets. It is a family business with headquarters in Lochristi near Ghent in Belgium with a consolidated turnover of €87m (2004) and <400 employees.

The group is now the market leader in Belgium and comprises a holding company (Flore nv) and several other companies, specialising in four core activities: breeding and young plant production, pot plants, trading and product distribution and, interior planting. Collectively, they are a major grower, trader and horticultural logistics company, who now sell heavily into the UK retail market, usually direct to independent garden centres and Homebase. During 2005, they made over 1000 tunnel crossings. They offer a very wide range of product including pot plants, nursery stock and potted displays, a product offer that means their average order size can be 3 times bigger than that of a UK grower. Floerac also have a very advanced computer system, which their contract growers are able to access to ease and speed communications. Transport and distribution for the group is undertaken by the Transport company FTO nv, also based in Lochristi near Ghent.

7.3 Floraholland

Holland is effectively a hub for world trade in plants and flowers and the floriculture sector alone now employs around 100,000 people. Its supply chain comprises over a thousand exporters and is closely integrated, being structured around a unique combination of specialist producers, auctions, marketing co-operatives, traders, exporters, collective transport and specialist logistics providers. It is because of this and its close proximity to target markets that the Netherlands is now responsible for over 50% of world trade in plants and flowers.

Floraholland is a powerful marketing co-operative responsible for running five international auction sites located close to major centres of production and sales (Bleiswijk, Eelde, Naaldwijk, Rijnsburg and, Venlo). Twenty six auction clocks and an Intermediary Office provide grower members with important sales outlets for a diverse range of plants and flowers which is continually renewed and expanded. The co-operative attracts year-round buyers with significant purchasing power and strives to achieve the best prices for its members as well as rapid deliveries (De-winter are currently the preferred logistics provider), secure payment and efficient order processing. The auctions also offer accommodation for traders (many exporters for example have on-site facilities for receiving and sorting orders) and provide up to date market information. Currently, some 3000 employees provide commercial, logistical, financial and market information services to around 6,500 growers and <3000 traders in Holland and beyond.

The auction site at Naaldwijk is the largest export location and situated in the heart of the Westland glasshouse district. It is particularly impressive and focuses on large scale export companies. The Rijnsburg site is also an export auction and is aimed at large to medium sized export companies. It's particular focus is bulb flowers and summer flowers. The Bleiswijk auction services retailers in the western part of Holland and products here are sold using the auction system and the nearby Terra Bleiswijk cash & carry centre. Venlo is located in the south-east of the country, near to the Germany and so is well placed to develop trading links here. It also has a cash & carry facility and supplies a complete range of plants and flowers. The auction at Eelde is situated in the north of Holland and has a strong market presence in this area and nearby Germany – a principal export market for the Dutch.

A cash & carry centre (Green Group Eelde) specialising in tree products is also located here and the auction is now evolving into a logistical centre for the region, not unlike the auctions at Naaldwijk and Aalsmeer.

Flowers and plants sold through the auctions come from all parts of Europe, Africa, the Middle East, Central America, South America, Asia and Australia. The co-operative in fact has representation in Kenya, Israel, Zimbabwe, Ethiopia and Spain, advising foreign producers of sales opportunities and offering Dutch exporters scope for year round supply of a worldwide product range.

Plants and flowers are usually auctioned early in the morning according to a fixed schedule and delivered to buyers by a third party logistics provider for onward distribution to customers. Several major exporters are based at some of the auction sites. As the product is perishable, speed and reliability are essential pre-requisites of the logistics process. Order tracking and traceability are assuming greater importance and Floraholland has invested heavily in IT and e-business to allow members rapid access to market information. Internet based data banks for example bring products to the attention of buyers and simplify order processing. The philosophy of Floraholland centres around sharing knowledge and strengthening the market position of its customers. It maintains daily contact with growers and traders and encourages co-operation. Market research on behalf of members and visits to new sales outlets takes place continuously. The information gained is complemented by statistical data from the auction(s) and made available to members.

Each of the auctions also offer traders on-site customised accommodation and the opportunity to invest in their own facilities at the auction(s). It is also possible to lease space in the auctions or at one of the nearby cash & carry centres that Floraholland is developing in partnership with private investors.

Floraholland also provides information to members and buyers about the quality of plants and flowers: shelf life and product quality for example are regularly tested. The co-operative was also involved in developing the international hallmark that is MPS-Florimark which seeks to guarantee the quality, environmental and social integrity of products throughout the supply chain as well as the process itself.

The co-operative also provides help and advice to support innovation and the introduction of new products or packaging. Floraholland IntroPoint for example provides business support in the areas of marketing strategy and the introduction and promotion of new products and packaging concepts. FlorConcepting brings together information and knowledge about consumers, countries, trade, products and logistics to underpin the development of new products and packaging.

Whilst Floraholland is largely structured around the auctions, it also runs what is known as the ‘Intermediary Office’ which provides direct trading support to growers and buyers, for example by fostering close business relationships with each party, providing support and advice throughout the sales process and assisting with sales mediation.

The Office also makes an inventory of available products, creates special offers and actively supervises orders that have been made. Linked with each of the Floraholland locations and the Boskoop Trade Centre which specialises in nursery stock, it also collects and disseminates market information. Buyers and growers deal with an Account Manager who is their primary contact when seeking commercial, logistical, market and product information and, financial services.

In essence, the co-operative acts as a 'one stop shop' sales and marketing hub, taking responsibility for the whole supply chain and working closely with all parties including exporters and branch organisations. Each of its auction locations contribute significantly to regional economies whilst on a national level, the co-operative promotes the industry to an increasingly global market. Given the scale and complexity of its functions, a high degree of organisation and co-ordination is essential for success, hence the organisations significant investment in logistical solutions.

7.4 The Aalsmeer Flower Auction

The Bloemenveiling Aalsmeer Flower Auction is a co-operative marketplace owned and funded by its 3000 grower members and sales commissions taken on business conducted through the auction site. The covered auction site is located in the outskirts of Amsterdam and serves a global market. Whilst the clocks are now digital, the buying process remains largely unchanged with flowers and plants usually arriving the night before for early morning sales 'under the clock' the next day (generally between 6.30 a.m. and 9.30 a.m.). Its concept is a simple one: to act as a central marketplace for the trading of floricultural products through a balanced range of market channels, provide good facilities for growers and buyers and, ensure effective logistics. It is open 24 hours a day and is probably the most prominent flower auction in the world.

In terms of operational structure, the members appoint a board from amongst their ranks, all of whom are growers, to determine policy. Management and implementation of auction policy is undertaken by a Managing Director, Commercial Director and Operational Director. A Supervisory Board drawn from grower members and Dutch commerce and university life provides policy recommendations and verification. The 3000 co-operative members are grouped into 15 regionally active sections, each with a section board, who liase with co-operative management during policy meetings. There are two general meetings a year to which all members are invited.

The auction provides an essential link in the international supply chain for plants and flowers: on average 20 million flowers and 2 million plants provided by 5,400 growers world-wide are sold daily to 1100 wholesalers and exporters through the auction. Within a matter of hours, product is exported to almost every country in the world: the auctions world market share is some 45% and annual turnover is currently circa €1.7b. The service turnover which includes packaging and profits from tenancies and leases is around €158m.

To give an indication of scale, the auction site occupies an area approaching one million m^2 and employs nearly 2000 people, around 800 of which are part-time staff. It is currently the largest commercial building in the world.

Around 10,000 people work within the site complex, which includes exporters, wholesalers, banks, transport / logistics companies and other service providers. This can rise to 12,000 during peak periods (e.g. Mothers Day, Valentines Day).

7.5 Merger of auctions

Developments in the increasingly competitive and global floricultural market have recently led to a merger of the Bloemenveiling Aalsmeer auction and Floraholland; declarations of intent were signed in October 2006. The move responds to a need to consolidate and streamline operational activities to reduce supply chain costs and strengthen the international market position of the Dutch auctions. The new co-operative, whose headquarters will be at Aalsmeer, will start with a combined turnover of €4billion and trade as Floraholland whilst also retaining the well known red tulip logo of Bloemenveiling Aalsmeer. The brands will be formally merged in 2008 when the new co-operative becomes fully operational.

7.6 The Flower Council of Holland

Based in Leiden, the Flower Council of Holland is the worldwide marketing arm of the cut flower and houseplant industry in the Netherlands and is financed by a compulsory levy to which all sectors of the trade contribute. Primarily, the Council promotes the sale of floriculture products by:

- Providing market research and analysis

- Maintaining trade contact at all levels, canvassing support and developing promotional campaigns

- Developing and implementing marketing plans through a range of promotional and communication channels including trade fairs, information and educational services, sales promotions, trade support, PR activities and advertising

The Council also has satellite offices in Dusseldorf, Paris and Milan. There is a UK Flower Council team based in England (Salisbury) whose remit is to develop new strategies and campaigns to support retailers and growers in the promotion of cut flowers and houseplants across the UK. Support activities include training workshops for florists (e.g. floweracademy.nl) and garden centres, advertising and consumer PR campaigns to stimulate market demand and regular newsletters for wholesalers.

Fostering business links and co-operation across the supply chain and keeping flowers and plants in the public spotlight are amongst the Councils highest priorities. A strong emphasis is placed on tracking current trends to link flowers with modern lifestyles and make maximum use of changing seasons to promote sales. Retailers for example are encouraged to attend trend demonstrations presented by top arrangers and consumer / trade magazines are provided with regular updates on news and trends.

The Councils budget is drawn from trade contributions (levies) charged to producers and traders and market research is undertaken to identify spending priorities and decide marketing priorities. Sitting within the Council is a Project Department comprising marketing and communications specialists and project managers. Their role is to help breeders, growers, wholesalers and retailers with their promotional and sales support activities at home and abroad. Recent examples include an e-commerce pilot in Denmark for retailers to order over the internet to developing a sales concept for flowers and plants at Shell service stations in the Netherlands, from conception to evaluation. The Department can also act as a joint funder of some promotional activities (contributions can account for <30% of total project costs).

The Council has a particularly comprehensive website (www.flowercouncil.org) with up to date news and information and, sections for florists, wholesalers, garden centres and supermarkets. There is also a link to the Plants for People campaign, an international marketing initiative led by the Flower Council aimed at consumers as well as the trade to increase sales of floriculture products. The central theme of the initiative is that flowers and plants are good for you and have a positive effect on peoples health, productivity and general wellbeing in the working environment as well as at home. The project initiates and supports international research projects, collects and publicises relevant study results and communicates these through seminar programmes and workshops. The concept is similar to the Plant*for*Life campaign spearheaded in the UK by the HTA with support funding from the European Community, which seeks to raise awareness of plants and the role they can play in improving people's quality of life.

The principal strengths of the Flower Council are its high profile, global reach, cohesive marketing capability and close integration with the industry it serves and represents. It appears to fulfil a role similar to that of the various trade organisations in the UK, most notably the HTA and there is perhaps scope to learn from the Dutch model to develop mechanisms within the UK which will have the same degree of impact, co-ordination and industry integration. Such an operation would be well placed to lead the industry through future, necessary changes to compete better in a global market, particularly in respect of supply chain consolidation and re-structuring, grower co-operatives and the development of regional distribution centres.

8.0 Comparison to other UK industries

8.1 Case study: Brewing industry

As part of this study, a review of how products are distributed within the brewing industry was undertaken. The composition of this industry is in some ways similar to horticulture, with several large-scale organisations dominating the market alongside a diverse network of smaller, specialist suppliers (in this example, breweries). The transport requirements of the products involved are also similar, with both requiring specialised handling (trolleys for plants, tankers for beer). However, despite being similar in composition, there are several areas in which the brewing industry uses quite different processes to distribute their products compared to horticulture.

8.1.1 Distribution

The brewing industry is dominated by four international brewers, known as pub companies or 'pubcos' whose strengths include efficient distribution systems and their ability to discount product, through economies of scale. They either have their own distribution operations or are supplied direct by breweries.

Product distribution in the UK is almost all owned by national brewers; Carlsberg UK, Scottish & Newcastle (branded Scottish Courage) and Tradeteam (Exel & Coors) and such a scenario could imply that a degree of anti-competitiveness exists. This point is discussed in the Trade and Industry report entitled *"The impact of Pubcos on the sale and distribution of beer"* which outlines the disadvantages and benefits to small brewer's of using the national pubcos distribution network. It commented that small brewers were able to access the distribution infrastructure of the large pubcos, operated nationally, whereas their own infrastructures were only regional or local in scope. The principal benefit therefore to the small brewers of using the pubcos regional depots is that they have access to a far wider geographical market.

There are though disadvantages. The Society of Independent Brewers (SIBA) argues that because pub companies outsource their distribution to the international brewers, this creates inefficiencies and additional costs for small brewers. They state that small brewers are in practice required to ship their goods to the national brewers' regional warehouses, before it is transported back through the national brewers distribution networks to local public houses (potentially near the original brewery). SIBA also argues that market access for smaller breweries is restricted by the fact that many pubcos insist on distribution through one of the big three logistics companies. Using these has lead to concerns with cask repatriation, complex listing procedures and general inflexibility.

For small brewers unwilling to place their product with a distribution depot, a cask beer specialist is employed to assist in delivering small brewers brands. SIBA brewers also deliver direct to local pubs.

To do this, some breweries deliver through hubs, some deliver with their own transport and some use hired transport, depending on the situation, arrangement with customers and the type of pub. Bathams brewery for example, delivers all their own beer with their own vehicles.

They tend to deliver to small local country pubs but would not deliver through pubcos. Some 'microbreweries' are actually located on pub sites, delivering locally and sometimes exclusively to pubs within the same group in order to enhance product differentiation.

Such arrangements also extend to staff resources, which are effectively 'shared' between different pubs of the same group in the locality to reduce costs and overcome peaks and troughs in demand, e.g. new generation 'Gastro pubs' requiring trained staff and whose core product is gourmet food alongside locally branded ales.

Whilst to some extent, these scenarios differ from those in horticulture, there are similarities, and they do provide an insight into the possible effects that a small number of large distribution companies may have, particularly upon smaller growers.

8.1.2 The SIBA Direct Delivery Scheme

In order to improve efficiency and assist customers and small suppliers within the brewing industry, The Society of Independent Brewers (SIBA, www.siba.co.uk) have introduced an initiative called the Direct Delivery Scheme (DDS) that facilitates trade between macro customers (pub companies) and micro suppliers (brewers). In effect, SIBA act as a 'middle-man' between the two, taking orders from the pub companies electronically and sending them out to the small brewers.

The scheme reduces the administrative burden for large customers trading with smaller local brewers by using an electronic internet-based administration system. It also provides transparency of management information to assist participating customers to trade with micro suppliers. Basically, the system acts as a portal for customers to access a wide choice of suppliers without the need for them to each contact brewer's directly. It is in effect a one-stop for customers looking for suppliers.

The DDS also has links with existing 3rd party logistics providers and by doing so, this enables pub companies across the UK to profit nationally from regional beers that they may otherwise not have access to. With this scenario, the 3rd party logistics company either act as a consultancy and advise the DDS and breweries on best practice for logistics, or project manage the logistics on behalf of the DDS.

Within horticulture, the HTA are currently piloting a system called HEBE (Horticultural Electronic Business Exchange, http://www.hebeconnect.net/) to facilitate more electronic trading. Although there are no current plans to link this to distribution and logistics, there may be potential in developing this concept into a horticultural equivalent of the DDS system used so successfully by the brewing industry.

One of the main features of the horticultural supply chain is that a relatively small number of garden retailers play the customer to numerous small growers, a-la small breweries.

The resulting benefits of devising a system like this for horticulture are likely to be akin to those experienced by SIBA members in the brewing industry, i.e. retailer's and growers would both gain.

The biggest barrier to this facing horticulture is that of the distribution process which is currently very fragmented, with most growers doing their own individual thing and so the adoption of a more centralised system would necessitate major changes, some cultural, some physical. This may prove challenging and take time to evolve.

SIBA indicate that the success of the DDS in the brewing industry is such that:

- Efficient trading relationships now exist with many leading retailers

- Current brewing membership levels and interest expressed in DDS membership is gaining momentum, current forecasts indicate more than 8 out of 10 SIBA members will soon also be members of the DDS scheme

Thus far, the initiative has resulted in a doubling of the number of licensees (customers) who are now able to enjoy the benefits of trading with local brewers. SIBA comment that "DDS has proved very popular among licensees as a great way to enable licensee entrepreneurialism by fostering a partnership between local licensee and local brewer to their mutual benefit." Also, market research has shown that more than 9 out of 10 licensees believed the scheme helped to develop business and without exception, all wished to stay in it. Proven volume growth has been demonstrated through its adoption by major retailers too, including Enterprise Inns, Admiral Taverns, Punch Taverns (through their acquisition of Avebury Taverns), Asda and Tesco. The adoption of a similar scheme within the horticultural industry has considerable potential and warrants further consideration.

8.2 Case study: Fresh produce

When considering other industries, it is instructive to be aware of recent work undertaken in the fresh produce sector by the Food Chain Centre (FCC), supported by the Fresh Produce Consortium, the NFU, the HDC and the British Potato Council (BPC), aimed at improving the efficiency of the supply chain. In this work, whole chain analysis was undertaken from producer to point of sale and it is useful to reflect on comments made by David Walker, Chairman of the BPC at the time of this work..'' supply chain relationships in the potato sector are already well developed and a good deal of effort has been made to reduce costs. But the work done by the FCC has shown that there is unrealised potential if our farmers, processors and retailers work together. The BPC has fully supported these initiatives and will work to capitalise on the results for the wider benefit of the potato sector''.

The work undertaken by the FCC centres around the testing of ideas and practices behind Lean Thinking and Value Chain Analysis.

8.2.1 Lean management

The words of Professor Dan Jones, Founding Director of the Lean Enterprise Research Centre and Director of the Lean Enterprise Academy summarise perfectly the concept of Lean thinking when applied to the supply chain..''Lean thinking has been applied in many different industries, helping to lower costs and improve profits. The three words, 'fresher, simpler, closer' capture the idea of lean thinking in the food chain''.

Essentially, lean thinking provides a way to do more with less while moving closer to providing customers with what they want. It is no longer a new concept to commercial horticulture, where several leading companies have applied the principles of lean management to good effect and made significant savings. The HTA have also organised regional programmes of successful lean management workshops for the ornamentals sector in the UK and some businesses have since applied the principles of lean management to other parts of their business. The approach has also been used in the livestock, cereals and dairy products industries to good effect. For example, work has shown it is possible to save at least 10% of the retail value of products through reductions in cost and improvements in quality and service.

The Lean Enterprise Research Centre at Cardiff Business School is renowned for its work in the application of lean thinking and their work has demonstrated that businesses can definitely use lean thinking to improve profitability. It has been successfully applied for example to the construction and healthcare industries. It is not however a 'quick fix'. It is about promoting continuous improvement so that businesses continually strive for better performance. It can only work with the full support of senior management.

For the fresh produce sector, the FCC developed a pilot programme with the Lean Enterprise Research Centre (LERC) which involved examining some of its supply chains in greater detail. This may be something the ornamentals sector in horticulture should also consider. Most crucially, the work sought to identify where waste exists within the supply chains and how the chains can work together to reduce this waste and improve competitiveness. The work looked at a broad mix of chains, which included apples, provided through the Schools Fruit and Vegetable scheme and potatoes processed into added value products. Leeks, raspberries and herbs were also considered.

Because the fresh produce sector has not received production support and because many of its products have a short shelf-life, the industry had already developed many characteristics of a lean supply chain, for example:

- Supply chains are often short and exhibit a high degree of customer awareness

- There is considerable vertical integration and consolidation

- Collaborative arrangements have developed, for example to ensure all year round supply

The LERC team acts as expert facilitators and guide teams drawn from businesses along the supply chain, encouraging them to examine processes in detail, identify problem areas and develop solutions. A ‘process map’ capturing what is happening is devised and typically this will contain information on the:

- Flow of physical goods
- Flow of information
- Defect / loss rate
- Value adding time
- Total elapsed time / distance travelled

A number of issues are then investigated, for example:

- Do products flow through the supply chain as quickly as possible or are there unnecessary hold ups?
- Do some activities add more cost than value? In which case, what can be done about it?
- Are there some activities that add no value to the consumer and can be eliminated?
- Have people learned to live with errors rather than striving to eliminate them?
- Are the right quality tests in place throughout the supply chain and are they working effectively?
- Are the right performance measures in place?
- Are there any ordering and stock holding policies that impose heavy costs on suppliers? For example, does a smooth pattern of customer demand convert to an uneven pattern of orders?

A second flowchart or process map is then drawn up detailing improvements than can be made and finally an action plan of how best to collaborate to achieve this. Typically, actions may include:

- Re-designing layouts
- Extra staff training
- Forums for customers and suppliers to work together to develop improvements
- Making better use of IT

- Working together and collaborating more effectively

The lean management approach is underpinned by a number of guiding principles:

- Thinking of fresh produce production from farm to consumer as a Value Chain, i.e. one that focuses on financial considerations

- Putting consumers first, as they are the final arbiters of value. It is important therefore to know what they see as value and to understand what activities in the chain contribute to delivering this value

- Working in partnership. The guiding principle here is that all businesses can benefit if they co-operate in the joint management of the value chain, something in horticulture that Holland for example, appears to excel at across the ornamentals supply chain

- Systematically identifying and reducing every form of waste. Lean thinking aims to identify waste in a supply chain and move solutions forward. In our own ornamentals supply chain for example, key areas of waste include duplication of effort, time and resources as many suppliers frequently deliver similar products to the same customers in the same week when freight consolidation has the potential to combine deliveries and significantly reduce this waste

In the context of lean thinking, waste is defined as any activity that adds cost without adding at least as much value. The process focuses in on wasteful activities and considers how to reduce or eliminate waste, preferably without major expenditure.

In essence, lean thinking in this context is about stepping back, re-assessing the whole supply chain, applying some analysis, asking probing questions and considering ‘is there a better way to do this?’. Although the concept is now being applied more widely in UK commercial horticulture to high input activities like order collation & despatch, potting, propagation & materials handling and, office administration, to date the supply chain as a whole has not been considered. As highlighted by Jon Woolven, Food Chain Centre Director…’’ we don’t believe in saving cost by cutting corners, reducing quality, damaging the environment or exploiting any members of the chain. There are better ways to find savings through reduction of waste’’.

A project recently completed by the HTA which piloted a ‘lean supply chain’ working with a large wholesale plant supplier (Johnsons of Whixley) and a large independent garden centre (Chessington Garden Centre) underlined the value of implementing lean thinking concepts. Savings identified during the project through implementing a number of ‘lean’ changes were considerable and in the region of £85,000, shared between both the grower and the retailer.

8.2.2 Value chain analysis

Value Chain analysis is an improvement technique and composite part of lean thinking that focuses on the financial equation. As product moves along the chain it incurs cost but also rises in value.
If more value is added than cost, then the product is profitable to supply. So, sustainable profits are achieved by maximising value and minimising cost.

This concept is perhaps best illustrated by some case study work the FCC did with the apple industry and in particular the 'Apple a Day' schools campaign. This initiative addresses the challenge of delivering fresh high quality apples to 16,000 schools signed up to the Government funded School Fruit and Vegetable Scheme, one that requires a high degree of co-ordination and efficient supply chain management.

During the study, the FCC value chain analysis tracked apples from a farm in Kent to a school in London and identified five opportunities to improve the supply chain through:

- Better planning of deliveries to schools
- Improved packaging
- 'Clever' apple picking
- Planning for non-school days
- Ensuring there is a fridge in every school

It is instructive to consider the comments of Gareth Jones, NHS (PASA) School Fruit and Vegetable Scheme…''This Value Chain Analysis was the first opportunity I ever had to step back and look at the whole supply chain. As a method of identifying opportunities for efficiency gains and eliminating waste, this work could contribute towards our annual target of 3% savings on a budget of £42m''. NHS PASA procures fruit and vegetables for the schools scheme.

Following the initial process mapping, a number of improvements were proposed to improve supply chain efficiency. These included using dedicated growers for each schools region supplying a central packhouse, effectively a form of hub. The fruit would also be delivered in re-useable trays or biodegradable packaging to reduce the waste burden for schools and with it the carbon footprint. Deliveries would be in refrigerated storage to maintain quality and provide greater flexibility. The issues identified during process mapping were developed into five key actions or projects, each with a designated leader, to start what is intended to be a continuous improvement process. These were:

Five deliveries per fortnight - the current practice was to deliver apples three times each week which meant that some schools had fruit delivered on Friday for Monday consumption. This is costly to service and raises quality issues.

Switching to five deliveries per fortnight whilst retaining the same storage regime reduced deliveries by 20%, enabled better utilisation of drivers and meant less food miles.

Packaging review – current practice was to pack the apples in polythene bags in boxes with layered boxes which is costly and creates waste in schools. Switching to re-usable trays or biodegradable packaging reduces this.

Picking process – switching from traditional bag and bin picking to a picking train system allows greater visibility of pickers, closer supervision and in turn improved productivity and quality.

Non-school day communication and standard invoicing – some distributors were provided with school term and other closures dates and had developed standard operating procedures for accurate and timely invoicing.

Other distributors had been less proactive and so the opportunity was taken during the value chain analysis to ensure they each implemented similar systems to improve the consistency and quality of information flows and ensure correct deliveries.

A fridge in every school – 25% of the schools had procured fridges on an individual basis but fruit deliveries were restricted by the other 75% who did not have chilled storage capacity. Opportunities were taken to install a fridge at each school at a relatively low cost to allow greater varieties of fruit to be offered and more flexible delivery schedules. One option considered was for the distributors to fund the fridges over a reasonable pay-back period through more flexible delivery schedules.

These actions and project areas were then assessed against key customer value attributes to test the importance of each one and their relevance to customer value. Table 6 summarises the findings:

Table 6 Actions v customer key performance indicators (scale 0-3*)

Consumer value	a	b	c	d	e	f	g
Right quantity every day	3	2	0	2	3	0	10
Meet specification (size, colour, taste, pressure)	0	3	2	0	0	3	8
Promotion of 5 / day and healthy eating	0	1	0	1	0	3	5
Cooperative delivery drivers	3	2	0	3	3	2	13
Project Total	6	8	2	6	6	8	
Project owner	HS	GB	FC	AS	GJ	GJ	

***Scoring scale** – 0 (no effect), 1 (Low), 2 (Medium), 3 (High effect)

Key

a - Five deliveries per fortnight

b - Packaging review

c - Picking train to other farms

d - Non-school day communication

e - Standard invoicing format

f - Fridge in school

g - Value Total

From the table, it can be seen that the most important actions so far as delivering customer value were concerned are the packaging review (returnable or biodegradable trays) and fridges in every school. Each of the project areas had an owner and progress was reviewed regularly.

Table 7 (Improvement summary) shows an early version of a standard set of performance measures, based on one grower, one supplier and one London schools region. Although these evolved as the work progressed, they provide an indication of the types of improvement that Value Chain Implementation can achieve.

Table 7 Improvement summary

	Current state	Future state	Change
Pack out rate	80%	90%	10%
Lead time (harvest to consumer)	88 days 1 hr	85 days 1 hr	3%
Value adding time	6 hr 5 min.	6 hr 5 min.	0%
Value adding time as % of total time	0.29%	0.30%	3%
Inventory	87 days 7 hrs	84 days 12 hrs	3%
Transport time	11h 30 min.	7 hr 0 min	41%
Waste & reductions at customer	26% (260,000 ppm)	10% (100,000 ppm)	38%
Unavailable to customer	0.1% (1000 ppm)	0.05% (500 ppm)	50%
Value adding time excluding storage	4.20%	8.35%	50%
Product through chain free of product or service loss	29%	61%	52%

Summarising the work, Graham Basset of Worldwide Fruit commented..'' Value chain analysis allowed us to examine the whole process, from growing to consumption and I learned a lot about the other parts of the chain. This exercise helped us to create a co-operative spirit along the supply chain''.

Clearly, there are potential benefits to the ornamentals sector in applying these techniques, perhaps as part of a wider supply chain management review and prior to any future restructuring that may be considered going forward.

8.3 Other industry collaboration schemes

8.3.1 The Green Grocer initiative[1]

The Green Grocer Ltd (TGG) is a company that markets, distributes and delivers food products for a co-operating group of producers in the Warwickshire and Worcestershire areas. TGG sell mainly over the internet and deliver to local homes and businesses within a 30 mile radius of the business. The company markets itself as a farmers market online, offering a wide range of seasonal foods. It also acts as a central distributor and provides producers with the opportunity to sell their produce direct to a wider geographical area of consumers but still within the local area. TGG charge producers a percentage of the sale for marketing, order picking and delivery, however, the supply chain remains short and food miles are reduced, therefore reducing the costs paid by the consumer.

Market research has shown that whilst there is increased demand for locally produced product due to its "superior eating quality", there is a decrease in the number of people preparing fresh food at home. However, other opportunities present themselves, as there is an increase in people eating ready meals and people eating out in restaurants. Local companies that produce ready meals and local restaurants could be targeted. Further research has shown that although TGG are expanding rapidly, the uptake by consumers within the first 12 months has been slow due to the consumer base and consumer confidence growing slowly as they get used to purchasing this produce over the internet.

Similar initiatives to this exist within the ornamentals sector but to a limited extent, for example the freight hub currently being developed by the Midlands Regional Growers seeks to consolidate product distribution. There is also interest in exploring local market opportunities more fully, as described in Section 9.0 (Branding and local procurement) of this report.

8.3.2 The cereals industry

A recent investigation by the Cereals Industry Forum into the grain supply chain from farmer to supermarket shelf, promoted the idea of "reconnecting the food chain by collaboration, not confrontation"[2].

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[1] The Green Grocer Initiative (2006) Developing the Red Meat Supply Chain, Feasibility Study Report

[2] BARNES, C (2006) The Federation of Bakers AGM, May 2006. Presented by Chris Barnes HGCA Industrial Forum Manager. http://www.bakersfederation.org.uk/resources/Chris%20Barnes%20-%20Transcript.doc

Due to the over production of grain, changing consumer eating patterns and the removal of subsidies within the cereals industry, a trend has emerged which is seeing the closure of mills and concentration of grain on to larger processing sites. This means that in the future, grain may have to travel further distances within the UK.

Value chain analysis studies of the haulage industry reveals that there are over 1000 hauliers moving 25 million tonnes of crop in the UK.

Hauliers highlighted that there are problems with the economies of haulage, "large hauliers tend not to be interested in the movement of cereals, it is difficult to get drivers and clearly working time directives, things like that are causing problems in the industry that do need to be addressed."

The same report suggests that in order to overcome problems such as these and reduce costs, farmers need to be encouraged to join forces and form arable business groups. This will allow progressive business minded farmers to share best practice ideas and address economies of haulage with hauliers. Such discussion can also be applied to the ornamentals sector where some growers have joined forces to form regional groups and work more closely together.

The cost of crop movement affects the prices charged and paid by producers and buyers. The problem in the cereals industry is that buyers wish to buy at world market prices from where ever is the cheapest for the best quality, whilst producers wish to sell for the highest price to the local market. As highlighted through the study, it is possible to meet the needs of both parties by using a futures market related price fixing tool which farmers could organise through merchants or co-operatives. This then enables the farmer to choose the preferred delivery destination and the end user to procure from local sources. It is though important that through this tool, haulage distances between the producer and end user are minimised. This method is not the complete answer and requires monitoring by the producer. But it could be the preferred way forward for some producers and it is up to them to get the merchant or co-op to use these tools to give them a minimum price on a minimum price contract so they are managing market risk effectively.

8.3.3 UK Manufacturing[3]

The Manufacturing Research Centre recently conducted a survey of UK manufacturers seeking their opinions of logistics suppliers. Of those manufacturers responding to the survey, 86 per cent professed themselves quite satisfied or very satisfied with the performance of their outsourced logistics suppliers. This compares favourably with similar European and Asian studies. The most obvious trend discovered from the survey is an increase in logistical outsourcing. The same survey showed that over a quarter of respondents now fully outsource logistics and distribution, while those whose provision is kept entirely in-house had decreased over two years from around 40 to 35 per cent.

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[3] Materials Handling Today Magazine. http://www.themanufacturer.com/uk/materialshandling/article1.html

The co-ordination of third-party logistics providers (3PLs) by a project managing lead logistics provider (LLP) is firmly established within the industry. The concept of the 4PL is also developing, whereby the 4PL owns no assets but offers management and consultancy skills. Naturally enough, this has encouraged 3PLs (some of them already LLPs) to offer value-added services that enable them to undertake 4PL functions.

The term 5PL or 7PL has also been coined, this is where a company claims that it carries out 3PL services for some customers and 4PL services for others, and then adding the two together. Services offered by these companies are becoming more wide ranging.

There is also a move towards a more integrated approach that combines procurement with logistics. Giving the whole responsibility for material movement to one function, it is argued, allows better co-ordination, control and reduction of intermediate inventories. It brings together purchasing and supply chain management activities and aims to help companies source, move and deliver goods on time at the lowest cost. Such processes are encompassed within the SIBA DDS, and the scope for a similar introduction should be assessed and considered more fully within the horticultural industry.

An alternative and challenging approach is exemplified by the European Logistics Users, Providers and Enablers Group (ELUPEG), which encourages businesses to collaborate in solving logistics problems. “The idea is comparable to that of a clearing house,” comments Mike Bernon, Senior Lecturer in supply chain management at Cranfield University, “where a group of companies come together to share data on distribution activities and look at the possibility of some sharing of facilities. Manufacturers may procure globally, attack new markets and outsource a whole range of activities. So their end-to-end supply chains are extended further and wider than ever before. Thus a company is like a spider at the centre of a demand web, and it’s dependent on the success of the web as a whole. Other people’s business is now our business, and collaboration has to be on the agenda.”

Bernon[4] applied the idea to logistics. “Dedicated operations were fine when we didn’t have to think too much about frequency of delivery and costs. If two different businesses serve the same retailer, why shouldn’t they do it together, and recognise that collaboration may involve helping competitors as well as allies?” Companies he cited are now making service improvements and cost reductions by sharing consolidation centres and distribution facilities, and it was notable that the list included direct competitors. He also highlighted the opportunities for reducing waste. There are 85 million kilometres of empty-vehicle journeys in Europe each year and 10,000 million square metres of empty warehouse space. Heavy goods vehicles, if judged by criteria applied to a manufacturing plant, have a utilisation figure of less than 20 per cent. But ELUPEG, he concluded, is promoting a wiser approach. “It was set up in response to companies wanting to look at different ways of going about things, and we now have 500 businesses seeking to work together to improve European logistics through collaboration.”

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[4] Materials Handling Today Magazine. http://www.themanufacturer.com/uk/materialshandling/article1.html

9.0 Opportunities for collaboration

A feature already discussed within the brewing industry is that of collaboration amongst small breweries in the form of co-operative groups. The DDS initiative introduced by SIBA also demonstrates the benefits that can be derived from centralising the sales and ordering process for a group of businesses.

There are other initiatives, making the distribution process more efficient, that have been implemented elsewhere. One, in particular, focuses upon collaboration between suppliers, with regard to the delivery of their products to retailers. Such a model could be successfully applied to the ornamentals sector, albeit with some modification. Certainly, a greater spirit of co-operation so far as product supply, packaging formats, plant specifications and labelling would be required. For many UK suppliers, this would involve something of a culture change. Many retailers, including independent garden centre chains, have developed their own 'branding' which is distinct from the product supply in the brewing industry and may prove challenging for a group of growers to provide.

9.1 Freight consolidation

A project in Bristol, driven through a partnership between Exel Logistics and Bristol City Council, aims to offer a long-term solution to reducing urban congestion and solve many of the problems associated with getting goods to retailers in the most efficient and environmentally friendly manner.

A freight consolidation centre was set up outside the city centre to reduce the number of delivery vehicles serving the Broadmead shopping area, one of the city's major retail centres. It is the first of its kind in Europe to serve an urban area and builds on an original model Exel established for the British Airport Authority (BAA), which wanted to expand its retail business at Heathrow Airport, but was under pressure to reduce vehicle emissions. The Heathrow Consolidation Centre, which opened in 2001, continues to reduce vehicle movements at the airport by around 70%, and has attracted numerous environmental accolades.

The principle of freight consolidation is quite simple: a warehouse sits outside the retail area it serves and acts as a consolidation and distribution point for different products intended for a range of retail outlets. It receives multiple deliveries bound for shops and consolidates them into a single load on one vehicle. These vehicles then deliver direct to the heart of the retail area at pre-arranged times.

There are advantages for all those concerned, not least through the environmental benefits derived from the reduction in delivery vehicles. Retailers should be able to reduce their stockroom requirements too, through more timely deliveries, and so this space could be used instead as selling space. Chris Hudson, Operations Director for Exel's UK consolidation centres, is at the forefront of the new developments and says: "The current urban delivery model doesn't work as well as it used to.

Traditional routes to market are from national and regional distribution centres, or via carriers, without any central control – it's fairly ad-hoc".

The funding for Bristol's centre was in place until July 2005, and Hudson fully expects it to continue into the future. "We've got around 30 retailers on board now. For those participating, vehicle movements are reduced by 70%. The concept is fully scaleable, so if you apply it to all retailers in a city centre, you are talking about a lot of vehicles being taken off the road."

9.1.1 Opportunities in horticulture

The Bristol project, and those before it, was based around specific retail areas but for the horticultural industry, the majority of the deliveries are to out-of-town sites. As a result, the locations of the retailers selling horticultural product are more dispersed and this may impact on the viability of using consolidation depots.

By and large, growers supply predominantly the same customer base but usually make their own delivery arrangements. As such, inefficiencies exist both from a grower and retailer viewpoint: for example, some delivery routes may involve small volumes being unloaded at many outlets dispersed over a wide geographic area. Similarly, the retailer is required to monitor and verify numerous deliveries. Generally speaking, the larger the volumes per outlet, the more efficient the system. Hence, a hybrid version of the consolidation depot model, in which a delivery can be made to the customer on the behalf of several suppliers, thus increasing the volume involved per outlet, can improve efficiency.

Such a concept will be more attractive and appropriate for some growers than others. There are a number of issues to consider, for example different growers have different ways of working and these may not always be compatible. Further issues relate to livery, insurance, trust and vehicle licensing. Amenity and garden centre customers also have different requirements so far as quality, seasonal demand and handling systems are concerned (i.e. trolleys for garden centres, pallets or large, loose items for amenity and landscape customers).

Aside from the consolidation depots discussed, Exel also operate a consolidation depot serving the horticultural industry in Holland. It is situated in the heart of the bulb growing region, and the hub serves several growers, providing a distribution outlet to their customers. The advantages of this system are akin to those described above.

In the UK, a consolidation depot is being developed by the Midland Regional Growers (MRG) group in conjunction with local haulier Rick White, who is based in nearby Pershore and has pledged an initial five year commitment to the project. Since February 2006, carriage of the group's products has been centralised through one depot, thus allowing greater volumes to be distributed and larger volumes to be delivered on each drop. During peak periods, the depot or, 'hub', currently handles some 350 – 400 trolleys each day.

Growers usually deliver their loaded trolleys to the hub for consolidation and onward distribution but for an extra charge, they can are collected by the haulier. Deliveries are scheduled to specific areas on specific days.

Drivers are uniformed and briefed to be professional when dealing with customers, particularly as it is they who are interfacing with the customers. Lorries are usually in Rick White's standard livery. Some deliveries are sub-contracted to other hauliers during peak periods.

This project has been developed by the growers in the region, in association with the Freight Transport Association with support from the HTA and Business Link. Whilst the distribution depot is situated in the same region, it's use is not limited solely to members or local growers. The initiative could be beneficial to growers across the UK, in that the depot could be used for the final stage of the delivery to the customer. The principal advantage of this system is that a greater volume of product can be distributed and delivered on each drop, which increases efficiency and so reduces individual costs.

The project is still developing, and as such, some growers continue to use their own fleet for their deliveries. In time, the aim of the project is for an increased proportion of volume produced by these growers to be distributed through the centralised hub. Currently, the annual break-even point for trolley volumes is 70,000 and during 2006, some 39,000 trolleys went through the hub although this was the first year and the aim now is to build on this as quickly as possible. The biggest challenge now is persuading more members to commit more trolleys to the hub to improve utilisation and in turn reduce costs.

Plans are also underway to develop the concept further into a nursery buying group and, to use the hub as a venue for sales days aimed at local garden centre buyers. Indeed, the first such event took place in February 2007 and was so successful that it will be repeated several times during the year. Plans are also underway to network the hub further through retail buying groups such as HART and key manufacturers. Local branding may also evolve and be linked to the hub.

Similar examples of co-operation exist within other sectors of the ornamental industry. For example, co-operation between several commercial nurseries (both young plant producers and finished plants) combines loads of a range of products serving both the UK and Irish markets. The ultimate aim again is to ensure full lorry loads are utilised as far as is possible. This co-operation extends also to return loads, where the return of trays and supply of plants back into the mainland UK is co-ordinated. The process works on the basis of operating from several key hubs where product is consolidated and collated. These centres currently include Lincolnshire and Warwickshire. The group is also looking to co-operate in areas of waste handing (combining waste products such as cardboard and plastics for recycling) and purchasing (pots, trays etc).

The Association of Liner Producers (ALP), Farplants Ltd and, the Anglia Group highlighted earlier are other examples of how nurseries can work well together and successfully pool their sales, marketing and, in some cases, distribution resources together for mutual benefit.

9.1.2 Advantages of consolidation

There are several advantages of using consolidation depots, which include:

- Use of larger distribution network means greater access to customers for small growers
- Better utilisation of lorries – larger volumes and greater volume / drop
- Better utilisation of space within despatch area
- Lorry utilisation for vehicles travelling between the grower's site and the depot is of lesser importance due to the small distances involved. This advantage only applies to growers in the same locality as the depot
- Simplified system – work to delivery schedule of haulier
- Better utilisation of trolleys – once a load is dropped off at the depot; the vehicle can be filled with returned trolleys. The depot acts as a centralised hub for the trolleys returned from the customers

9.1.3 Barriers to overcome

Having described the advantages of a consolidation depot, in order for such a scheme to be successful, there are a number of barriers that need to be overcome, some physical and some cultural, some from the growers viewpoint and some from the haulier.

Growers

- The distribution schedule may need to be altered to meet that of the haulier. This may result in customers receiving products on different days to that currently experienced
- A haulier must be capable of handling horticultural products and have the requisite handling capabilities
- Historical ties will exist with hauliers. Many growers have long established relationships with hauliers, allowing trust to be built up. To 'switch' to another haulier contains an element of risk
- Working with competitors. Some growers will feel uneasy working alongside competitors. This is particularly true should a 'competitors' vehicle (and livery) be used for some deliveries
- There may also be concerns amongst some growers with regard to the loss of control of their products when in the hands of a competitor
- Different working practices and the existence of bad practice could impact upon efficiency

- Personality clashes – these are always a threat to any business deal, and hence present a barrier to the process of collaboration amongst growers

- Proximity of other growers. Where clusters of growers exist, a consolidation depot is likely to be more effective, providing the growers concerned can work well together

- Similarly, the availability of a suitable haulier with suitable despatch premises, ideally in the proximity of the growers, would need to be determined

Hauliers

The main problems for hauliers dealing with horticultural products include;

- Seasonal nature of trade: peaks and troughs can be experienced across the year

- Haulage rates for horticultural products are generally low in comparison to other products distributed. For distribution hubs to be cost effective for hauliers, minimum trolley volumes are required

- Plants are perishable goods, thus need care and careful handling

- Trolleys require a unique handling system – i.e. they need lorries fitted with tail lifts unless specialist loading bays are available

- Retailers can be inflexible and sensitive with regard to deliveries. Facilities for unloading also vary; on some garden centre sites the area is too small and not well sited, prompting concerns over efficiency and public safety

- Most routes are multi-drop and may involve small volumes per drop. One of the benefits of a consolidation depot would be to alleviate this problem

The product types involved will also be influential in the effectiveness of any such collaboration. Ornamental growers or those supplying the amenity trade are likely to have different distribution requirements (e.g. send products via a courier rather than a haulier) and have different customers to whom deliveries are made. The consolidation approach works best when several growers are supplying the same customer. Similarly, the diverse range of product types may have different distribution or handling needs, e.g. chilled storage, bedding plants, cut flowers, large trees etc., each of which place different and increasing demands on the haulier.

9.2 The need for collaboration

Through discussions with various growers, it is evident that the distribution process could be made more efficient within the ornamentals sector serving the retail garden market. This, coupled with the findings that, for many, costs associated with distribution are significant, indicates that there is both a desire and need to improve efficiency and reduce costs.

9.3 Reduction in own fleet vehicles

A number of growers have sold off their original fleet of delivery vehicles and use local hauliers. This has enabled them to focus their attention upon the core area of their business whilst contracting out their product distribution to a more specialist organisation, and have increased flexibility over the way their products are distributed. Nurseries after all are not transport companies and their focus needs to be on what they do best: producing and supplying plants. One reason for replacing their own vehicles with those of a haulier is related to the peaks and troughs of demand experienced within the industry. During the quiet periods, the ownership of vehicles can become uneconomic.

Some growers have considered the distribution of other product types during these periods, but few have done so due to additional insurance and licence requirements.

The seasonal nature of ornamental plant products and the demand for them creates distinct peaks and troughs. This means that for those growers using specialist logistics companies there are clear benefits in using a company that has a varied product base. There are two reasons for this; the first is that the carriage of other products can lessen the impact of horticultural peaks and troughs. Secondly, by carrying different types of products, where small volumes are involved, the efficiency of route planning can be increased as there will be more variety amongst the customer types in each delivery zone.

9.4 Trolleys

Almost all growers interviewed for this study experienced difficulties in monitoring the flow of their trolleys through the supply chain. Various methods have been used, such as colour coding, computerised systems, paper documentation, e.g. signed proof of deliveries. Despite this, the majority found that they were unable to keep track of their movements.

A consolidation depot has the potential to overcome this problem. If for example, trolleys are recycled at the depot then those back-loaded from deliveries can be returned to the growers. Should the haulier own, and then lease out the trolleys to the growers, then the need to track the movement would be lessened.

9.5 Lorry utilisation

Some hauliers interviewed during this study indicated that the space utilisation for horticultural products was lower compared with other industries. The transport and handling of large trees in the amenity sector for example may be a particular concern in this respect. Even small numbers of large trees require considerable space and, careful handling, sometimes with specialised equipment due to their weight and size. Due to their bulky nature, they may also be more difficult to combine efficiently on the same load with other products.

The variety of different products distributed was also cited as a reason for lower space utilisation. A narrower band of products means that more can be loaded and packed in.

The wide variety of packaging used was also mentioned. One haulier stated that the collars used to protect plants are too big and cumbersome, and their presence accounted for up to a third of the space required. The variety of packaging also makes packing more laborious. It was felt that such inefficiencies were not present for other product types.

Another haulier compared his fruit and vegetable customers to those supplying ornamentals and felt that the former were more efficient in that their products are still maturing as they are distributed through the supply chain, whereas some ornamental products were already finished when they were collected.

9.6 Lead times

The time between receiving an order and delivering the product to the customer varied amongst growers and, spanned between two days and up to a week. The impact of lead times can be more of a nursery issue in respect of efficient and timely order processing rather than be directly related to the actual transport / distribution of the product. Unless, in exceptional circumstances, order collection is required just a few hours after the order has been placed.

In the majority of cases, nurseries will pack orders for despatch either the same day or shortly before. The lead-time from when the order is confirmed to when it is required for collection or delivery will, to some degree, impact on the nursery / suppliers processing costs (i.e. order collation, labelling, pricing, pot cleaning where necessary and boxing / loading). Computerised systems that integrate each of the key processes from order receipt to printing priced care cards are now available and help to reduce processing times and costs.

From the supplier's perspective, the greater the lead time available the easier it is to plan and co-ordinate transport arrangements, particularly so far as maximising load capacity and minimising mileage are concerned. Nurseries can improve their order processing efficiencies and planning by devising clear guidelines for necessary actions to be completed and ensure these are adhered to within set timelines. Typically, nurseries will take orders required for delivery on specific dates up until a certain point, after which the delivery will have to be deferred to an alternative date as load plans and routes have already been finalised and the plants lifted. It is unclear how significant such issues are across the ornamentals supply chain but from a nursery perspective, they have a major impact on their ability to service customers efficiently and to their full satisfaction.

9.7 Pricing mechanisms

There are a number of ways in which growers are charged by hauliers for the delivery of their products. Some are linked purely to volume (i.e. the number of trolleys involved) and are de-coupled from the distance travelled. For others, the charge is based upon the volume transported, but increases with the mileage covered. A reduced rate according to volume encourages growers to deliver as much as possible on the same day. For others, rates are dictated purely by mileage involved and hence volumes are not important.

For some growers, the charges are determined by a fixed daily rate according to the size of the vehicle used. Those using this system found it to be the most cost effective and they ensured that the vehicles were utilised to their maximum potential throughout the day. For instance, if a vehicle returns in the afternoon, it can be sent out again that afternoon without additional charges being incurred. Such a system encourages the vehicles to be in transit, which naturally increases efficiency.

It would appear that the optimum pricing mechanism selected by growers is governed by their particular processes, business needs and characteristics. Naturally, some growers may not have a choice as to the haulier that they use, and thus are limited in their respective rates. For others, the way in which charges are levied is negotiated by the growers and the haulier. Hence, a co-operative group of growers may have a stronger bargaining position than that of an individual grower.

In order for a consolidation depot to be most effective, a cost rate applied by volume would be most beneficial to participating growers.

9.8 Collaboration in sales and purchasing

There is a natural progression from the consolidation of deliveries to the consolidation and sharing of sales, promotional and buying functions so in effect, they also function as grower co-operatives. To a degree, this draws upon the DDS initiative within the brewing industry, which co-ordinates orders between customers and suppliers, the benefits of which have already been discussed. Such an initiative may provide a model albeit with some modifications, to increase efficiency within the supply chain of the ornamentals industry. The Midland Regional Growers for example, hosted their own trade show in February, using their distribution hub as the venue to promote and showcase horticultural stock to garden centres.

To develop sales collaboration, retailers would need to ‘buy into’ any such scheme but as has been shown by the DDS project, this should be possible given the advantages that may ensue. It is likely to be more efficient for a retailer to use a ‘one stop shop’ approach, embracing several growers than placing an order with each individual grower.

Some growers interviewed during this study indicated that this approach is being adopted amongst the larger retailers, as they are looking to consolidate their supply base and deal with fewer suppliers to reduce costs. Subsequent interviews with major retailers confirmed this. It is also a very familiar concept within the European market, the best example of which is most probably demonstrated by the auction system in Holland that operates not just sales, but marketing and distribution services as well. However, in the UK, such collaborations may prove more challenging to implement given the fragmented and disparate nature of the industry: some growers may for example be reluctant to ‘let go’ the marketing of their product to a third party for fear of losing control. Sales consolidation would though allow growers to focus their resources more cost effectively on efficient crop production whilst the marketing co-operative dealt with sales and distribution.

Like other supply chain activities, joint working through sales consolidation has the potential to provide suppliers with considerable cost savings. The HTA NBIS (Nursery Business Improvement Scheme) has recently started to consider marketing costs in more detail using data provided by its members. On average, most nurseries spend around 5-6% of output (sales) on marketing. Some spend considerably less (2%) whilst others spend a lot more (12%).

In many nursery sales budgets, sales staff are the largest cost, typically representing 50-70% of the total sales budget, the balance usually comprising advertising, catalogues, availability lists and management of websites. Some nurseries are able to 'share' sales staff, which can substantially reduce the cost, without compromising sales performance. At present, data is limited but the NBIS is investigating ways of co-operative marketing. Clearly, if sales resources can be shared or combined, there is scope for significant savings. In today's competitive market, the companies seeing real growth are those with strong sales teams and so combining forces offers genuine potential to boost market penetration considerably and, cut costs. There may also be scope to develop a UK Plant Sales Desk to ease and speed trading, building on the DDS concept developed by the brewing industry. This could be particularly attractive to major retailers and foreign buyers.

The viability of sales collaborations and to what extent they are developed will also depend on customer requirements and preferences. For major retailers, the development of 'Category Managers' has been an important step but one that appears to be customer driven rather supplier driven: which, in the case of the DDS initiative devised by SIBA, was the main reason for its success. In this example, a threat to the success and business development of their members was identified and a service devised that was not available elsewhere and met the needs of their customers.

9.9 Distribution hubs

As highlighted earlier, a well organised distribution hub allows growers to consolidate freight and reduce transport costs. They do however need to be set up and run on a professional basis if they are to attract sufficient volume and support to be cost effective. Hubs set up and run solely by growers (as opposed to a logistics specialist) may suffer through lack of experience and conflicts of interest that inevitably surface at some stage (e.g. concerns over livery, priority orders etc). To most growers, transport and distribution are an unwelcome distraction best left to others who have the necessary time, space, capacity and expertise. Ideally, hubs should be developed and managed by or in consultation with, independent logistics specialists who have experience of handling live plant material. Logistics is a complex art that stretches right across all functions of the business, beyond the loading and unloading of products. It frequently includes:

- Transport planning and co-ordination including cross-docking
- Order collation and despatch
- Plant production and procurement

- Warehousing and storage
- Labelling, bar coding and branding
- Trolley management
- PR and liaison with customers

Live plants present their own unique challenges, not least so far as temperature control and careful handling to avoid damage are concerned. Not all hauliers have experience of handling plants or the trolleys used for their transportation, or indeed take the necessary care.

For growers attracted to using and becoming involved in setting up hubs there are a number of points to consider, including:

Warehouse and storage space – this needs to be covered, well located, secure, able to handle trolleys (e.g. flat, smooth floor surfaces), goods in / goods out and have sufficient capacity to deal with peak volumes. Also and ideally, temperature controlled.

Vehicles – there needs to be sufficient lorry / trailer capacity and loading / unloading equipment to handle large trolley volumes during busy periods and ideally be temperature controlled (more costly and not always necessary for nursery stock but provides improved service quality). They also need to be clean and tidy, as do the drivers as they are often the first point of contact with customers. (Some Dutch drivers are in fact salesmen, have some plant knowledge and are able to combine deliveries with selling).

Administration – needs to be slick, well organised and customer focused, particularly where imports, exports and cross-docking are involved. IT needs to be up to date and compatible with customer software systems (e.g. major retailers).

Collective transport – some nurseries may prefer to have trolleys collected rather than deliver them into the hub so there needs to be sufficient transport and handling capacity to do this. This system works well in Holland and whilst adding direct cost and requiring careful planning, is less disruptive to growers.

Trolley management – prompt return and handling of empty trolleys is key to the smooth movement of plants through and out of the hub. Trolleys should be tracked and warehouses have adequate and secure storage capacity. Trolley volumes will vary with season and numbers of growers but a busy regional hub may typically handle <1000 trolleys / week, perhaps more. Twice weekly deliveries to some customers may also be required during peak periods: garden centres increasingly prefer smaller, more frequent ‘top-up’ deliveries.

Record keeping – needs to be efficient and include trolley, order and vehicle movements, vehicle maintenance, returns, order processing and invoicing.

Logistics providers – when considering plant handling and distribution, a view should be taken right across the logistics supply chain rather than being limited to specific elements. Hauliers for example, need to be professional, flexible, customer focused and, unless experienced, given some basic training in plant handling. They also need to ensure all vehicles are well maintained, legal and fit for purpose. This also applies to sub-contractors managed by the lead haulier or logistics provider and often used during busy periods.

It is difficult to quantify the start up costs and potential transport savings involved with using hubs due largely to the inevitably very wide range of costs attributable to current approaches and operations. However, so far as trolley costs are concerned, early experience indicates potential savings of around 5% (collection and delivery), based on ambient transport during peak periods when trolley volumes are high and so more cost effective for hauliers to service. Temperature controlled transport is likely to be more costly.

Recent work by the HTA NBIS has shown that transport costs are typically in the region of 10-12% of output (sales) where nurseries use their own transport supplemented with hauliers, compared to 5-6% with the use of an external carrier. At present, freight hub costs are likely to be similar to those of using nursery transport and hauliers, but hubs have the potential to provide further, significant savings as their use increases. They also enable growers to outsource the costly task of transport management and so make further savings. In many ways, they are an obvious next step, particularly in areas where there are clusters of growers sharing the same types of market.

Table 8 shows the costs and benefits of using nursery transport, carriers and freight hubs and, potential barriers to further use.

Table 8 Costs, benefits and barriers

	Nursery transport	Carrier	Freight hub
Average cost (% of output)	10-12%*	5-6%*	?**
Benefits	Reliable High service levels Quality control Familiarity with handling needs of plant products Flexible and able to cope with small drops and short notice orders Popular with customers	More cost effective for single, long distance runs of full loads Convenient during busy periods More focus on core business for grower	Costs will decrease as use increases Transport planning & management done by hub, not grower (savings) Greater access to customers due to larger distribution networks Scope to link with other hubs, improve utilisation and reduce costs

	Nursery transport	Carrier	Freight hub
Benefits cont'd			Opportunities to link with sales consolidation (savings) Potentially, high customer service levels (volume and coverage allows more regular drops) Low cost, reliable delivery system Environmental dividend (less traffic)
Barriers	Costs likely to rise Grower incurs transport management costs Expensive unless utilisation is high Distracts from core business (production and sales) Environmental concern (more traffic)	May not be as reliable or flexible as nursery transport Service levels may vary Small drops and part-loads will cost more Some quality control is lost Not all carriers are able to handle plant products	Need volume to reduce costs Needs reliable haulier, able to handle plant products and deal with customers Delivery schedules may not always suit customers Major cultural change for some growers

*Average costs based on a combination of nursery transport and hauliers ('Nursery transport'), single runs of full loads ('Carriers').

** Limited costing data available for hubs so far but experience to date indicates circa 10% (grower taking trolleys to freight hub for consolidation and onward delivery). Costs will reduce as use of hubs increases (economy of scale, better utilisation of lorries and despatch resources).

Costs will vary with trolley values.

Sources, W.W. George, Chair HTA NBIS and G Ceasar, Bransford Webbs.

As hubs evolve and their use increases, more will be required to service the needs of ornamentals growers, perhaps four initially, covering the south-east, East Anglia, the west midlands and, Scotland (Glasgow / Edinburgh). This would facilitate greater volumes and enable hauliers to link together, improve service levels and provide further cost savings.

9.10 Pallet distribution networks

Many hauliers, particularly those servicing the amenity landscape market are members of a pallet distribution network such as Palletline (see www.palletline.co.uk) or Pallet force. Essentially, these networks are based on handling standard pallets and function as transport co-operatives, usually comprising a central hub linked to a series of regional hubs or haulage depots. Member hauliers use the hubs to drop off and collect palletised orders for onward distribution to the end customer. Charges usually vary by distance and often quite broadly, depending on where cargo is being collected from and taken to. For this purpose, the country is often divided up into a series of zones, rather like post codes. Participating hauliers may also pay an extra charge in order to use a networks central hub.

This system of freight consolidation does in fact bear some similarity to that of the postal network, whereby post is collected, consolidated and transferred through regional sorting offices or distribution centres for onward delivery at local level. The underlying principle is again one of freight consolidation and shared distribution to reduce costs and provide service levels in line with modern demand. Palletline for example offer Guaranteed Next Day Deliveries throughout the UK, reverse collections, track & trace operating systems and, a 48 / 72 hour economy service. Ancillary services include express deliveries to all major European destinations, weekend and Bank Holiday deliveries and, third party collections.

The company operates from a main hub in Birmingham supported by several regional hubs and now employs some 150 staff. Major clients include blue chip companies, such as Parcelforce and J Sainsbury plc. Uniquely amongst pallet networks in the UK, Palletline is wholly owned by it's membership (currently, >60 member companies across the UK, covering some 15 million miles and making around 8000 deliveries a day on behalf of the network). Other pallet consortia include Pallex, Palletways, Fortec and, Pallet Express. Some of these providers are stronger in some markets and geographic areas than others and this needs to be carefully considered when choosing which ones to use. Specialised handling requirements and service levels such as timed deliveries can usually be provided, but at an extra cost.

In essence, these pallet networks are highly effective and work well, providing the requirements of the customer are compatible with a high volume mainstream process, usually based on a standard handling system. Ornamental plant products on trolleys destined for garden centre outlets for example, may be less suitable for full integration with palletised deliveries. However, plants which are well protected and on pallets or in boxes may be suitable.

For nurseries and hauliers servicing long distance customers, this system of shared distribution reduces transport costs though it is currently focused on palletised orders rather than Danish / CC trolleys.

However, some trolleys do go through these networks and there may be scope for growers servicing garden centres to make more use of them, given that trolleys have, to a degree, similar handling characteristics to pallets, in that they are collapsible and movable by fork-lifts and tail-lifts.

The support systems for these networks are usually excellent and feature consignment tracking and electronic P.O. D (Proof of Delivery). State of the art IT systems are used by some consortia, including web-based track and trace systems which feature on-line delivery images, to improve service performance and transparency.

10.0 Branding and local procurement

Other opportunities to reduce transport costs and develop new markets may exist for some growers on a local basis. With fresh produce for example, there has in recent years been a desire amongst some consumers to purchase locally grown food, a development clearly reflected in the recent success of farmers markets and the promotion by larger food retailers of locally procured or branded product.

According to the Institute of Grocery Distribution (IGD), '7 out of 10 British Consumers want to buy local produce and nearly half want to buy more than they already do.'[5] This finding is echoed by the publication, The Economist, which states 'Grand global strategies will be desperately out of fashion. Instead, companies will respond to competitive markets in two ways: by concentrating on efficiency and by exploiting local markets.' [6]

The Trade & Industry Select Committee report into pub companies recommended that: '…the ability of public houses to offer a broader range of products, for example to satisfy demand for local products, is important in the interests of extending consumer choice' and 'the early adoption of such practices.' [7]

Such developments have not gone unnoticed by the brewing industry and various initiatives have been created. The Trade & Industry Select Committee also suggested the adoption of the brewing industry's DDS (see section 7.1.2) maybe one possible way forward to increase local trade. Co-operatives, such as The East Anglian Brewers Co-operative, have been established that brings the components of the supply chain closer together. They provide links between brewers and barley farmers as well as links to farmers' markets. The central principle which these initiatives each share is that of co-operative working to improve supply chain efficiencies and raise service levels.

The wider applicability of alternative distribution systems, such as DDS, to the retail industry were recently reinforced by the Soil Association in a leading publication's review of the key issues facing retailers in 2006, stating… 'Consumers are demanding more locally sourced food. Retailers will have to meet that demand however challenging as it is to pull off within centralised distribution chains. In the longer term, the pressures will lead to a fundamental rethink of the way food is processed and distributed.' Whilst this comment concerns food, the real issue is that of consumer attitudes, and their desire to source locally grown products which will not exclude horticultural goods.

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[5] The Local and Regional Food Opportunity, IGD, March 2005

[6] 'The next little thing' L. Kellaway in The Economist 'The World in 2006'

[7] SIBA Journal Winter 2006

It is less clear whether consumers buy ornamental plants because they are British grown or not. Often, value for money is quoted as a more realistic reason for consumer preference. Indeed, recent research by the HTA (on plant value perceptions) and leading market information group TNS for the NFU (on buying British) reported that consumer interest in Britishness did not extend to ornamental plants or branding. There was in fact a perception that 'British' had pejorative connotations and was not readily associated with quality. However, there was interest in local procurement and a wish to support local economies.

The most used sources of information by garden centre customers were labels and advice from staff but they did not actively seek out the source or country of origin of a plant prior to purchase, although it was conceded that this information was not available at the point of sale. Label information of most importance to consumers was a picture of the plant and cultural details (preferred growing conditions etc). Branding goes largely unnoticed. The study did however report a wider interest in buying local product, buying organic and being 'environmentally friendly' – buying British was most widely associated with the food industry rather than with ornamental plants.

Market research undertaken as part of this study found that shoppers could be persuaded to buy home grown plants if the benefits were made clear. For example, they would need to be made aware of a new brand and its qualities through a carefully integrated communications and marketing strategy: in effect consumers would need to be educated as to why a British grown ornamental plant is a 'good, rational and emotional choice'. Currently, ornamentals are not associated with branding, unlike other consumer goods but the backing of a trusted authority such as the RHS for example, would lend credibility and help to develop what might become a known and trusted British identity for plants. For this concept to progress, a promotional strategy is needed and one which would highlight the benefits of buying British grown plants, for example hardiness, fewer 'plant miles' and sustainability of local economies. Surrey based grower Dr Bill Godfrey who spearheaded the project comments that '…branding is about building a set of values around a mark. It is absolutely clear that a brand could not be launched without the support of garden centres'. (There may also be scope in exploiting more fully the commercial potential of RHS Award of Garden Merit plants).

The next stage of this work is now underway, with support from the HDC to run a small test market in the south-east (ref. HDC project HNS 160). Point of sale material with accompanying leaflets will be developed to highlight and explain to consumers the benefits of buying local or British grown ornamentals. Two batches of a range of ornamental plants, similarly grown and presented, one with branding and one without will then be market tested to assess the sales potential of branded product more fully, in a garden centre situation. The findings of this study will be reported in October 2007.

The overall change in emphasis amongst consumers for 'local produce' in terms of food and drink should be beneficial to all elements of the supply chain. Reduced mileage leads to a reduction in associated cost, a potential increase in trade for the retailer and potentially more flexibility for all. Reduced 'food miles' should also provide an environmental dividend and food retailers are already raising the profile of locally grown food products within their stores.

Waitrose Ltd for example, has for some years promoted in store local and UK grown products and has featured particular growers. However, for non-edible products such as ornamental plants, locally sourced or ‘British Grown’ product may offer less sales potential although there is scope for retail nurseries who traditionally supply a wide mix of plants to a largely local constituency, to exploit this more.

11.0 Recommendations

To compete rather than survive in what is an increasingly competitive and global market, the ornamentals industry needs to consolidate its supply chain activities and integrate more fully, particularly in respect of sales, marketing and distribution.

Other industries have responded to similar challenges by devising systems that enable the major stakeholders to share costs and work more closely together. To some degree, similar initiatives also exist within the ornamentals industry but to a more limited extent. However, suppliers of ornamental plant products need to work together much more, embrace co-operative thinking and specifically focus on:

- Improving service levels to customers by putting them first and having a clearly defined, co-ordinated focus on sales, marketing and promotion. Over-production must also be curbed

- Improving the efficiency of its supply chain by applying value chain analyses and lean management principles to identify key problem areas and develop solutions, using work done in the fresh produce sector, and the HTA lean supply chain pilot project as an example. The principal aim should be to identify areas of waste and how the component parts of the chain can work together to reduce these

- Integrating the UK ornamentals supply chain more fully to reduce costs and improve customer focus. The skills of the Food Chain Centre (FCC) and Lean Enterprise Research Council (LERC) should be used to guide and facilitate this process, focusing on a cross-section of supply chains in the ornamentals sector. For example, supply networks to major DIY retailers, independent garden centres, retail nurseries and the amenity landscape sector. Some critical analysis also needs to be applied to current export supply chains from the UK, identifying where improvements can be made

- Embracing joint ventures and co-operative working more openly, especially in non-competing activities such as distribution, procurement and industry promotion. For example, forming collective transport arrangements and buying groups to cut costs and improve service levels. The work of this project should be taken forward with supplementary studies which include some modelling work to assess more fully the potential of regional group structures (perhaps, linked to distribution centres or hubs). Existing grower groups (including, discussion groups) should be included in this work, particularly where there is scope for closer supply chain integration. Attitudes towards, and scope for, adopting more specialist production models needed to fit with group structures should also be assessed as part of this work

- Consolidating and sharing sales resources to reduce costs and improve market penetration. The concept of linking combined sales teams to a network of regional transport hubs in order to provide a joined up approach to marketing and product distribution has considerable merit

This model could also be linked to a UK Plant Sales Desk to co-ordinate order processing and product sourcing, building on the DDS concept developed by the brewing industry (and, the HEBE electronic business exchange system being developed by the HTA). This approach may be particularly attractive to some retailers, including retail buying groups

- Assessing the commercial feasibility of distribution hubs as an efficient delivery system for ornamental plant products more fully. This should also consider future prospects for a national network of regional hubs (e.g. numbers and locations), developed through existing grower groups. The feasibility of developing hubs into regional business or service centres where sales, marketing and procurement activities are also consolidated (linked to a UK Sales & Marketing Bureau, for example) should be considered as part of this work

- The industry needs to be more international in its outlook and develop a UK brand if it is to raise its global profile and compete more effectively in foreign markets. It needs to be more cohesive and develop a more generic, co-ordinated approach to sales and promotional campaigns, driven through a recognised trade body such as the HTA and perhaps developed along the lines of the Flower Council of Holland model. There may indeed be scope for a closer tie-up and collaboration between the two organisations. There may also be scope for developing the HTA GIM further to improve the industries understanding of foreign markets

- Given its position as an international market place and trading hub, this project has focused primarily on Holland when seeking to compare continental supply chains with those of the UK. Whilst the supply chains of other nation states are likely to be structured in a similar way, there may be merit in examining these in greater detail through a study tour or, further survey work. For example, those of France (young plants), Germany (trees) and Italy (specimens), each of which remain important sources of the supply to the UK

- Building on existing work, highlighting the benefits to consumers of local procurement (hardiness, fewer ‘plant miles’, sustainability of national and local economies) and, exploring more fully through market testing, commercial opportunities for promoting local procurement and, the feasibility of developing a ‘Buy Local’ brand

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Appendix I

Questions used in the consultation with industry and haulage companies

Questions	Prompts
- What type of business are you?	Grower, packer, transport company etc? Size of the business and location.
- Is your business seasonal or all year round?	When are the peaks and troughs?
- What type of products do you supply?	How many types? Specialise? Volumes? What proportion of product is supplied at peaks? How does distributing different types of product affect supply chain – distribution?
- What is your customer base?	Where are they located? Local or further afield? Nationwide? What proportion of product is delivered how locally / further afield? Do you know how many miles are covered per week delivering product? Target locally?
- Is this customer base all year round or seasonal?	If seasonal are these inline with your peaks?

Your neighbours

Questions	Prompts
- Which other growers are there local to you (in your region)?	Are these ornamental or produce growers? How far away are they from you? Is there a cluster of growers together?
- What products do they grow?	
- Are their peaks and trough / seasons the same as yours?	
- Who do they supply?	Locally, nationwide?

Your supply chain

Questions	Prompts
- How do you distribute your products?	Own transport?
- Do you use third party hauliers or your customer's transport?	Same haulier all the time or different ones? How are the hauliers selected?
- Once the product leaves your premises who takes ownership and responsibility of the product?	

- Typically what are the lead times from receiving an order to out-loading it?	I.e. Ordering, picking up, making ready for out-loading,
- Do you out-load product on a daily basis? What are lead times from customers? Impact?	How often do collections take place? How good is lorry utilisation? How is lorry utilisation managed?
- Is product delivered directly to your customer or to a consolidation depot?	Location of depot(s)? Is it near to customer base? Are you required to use a depot?
- How is the distribution of product administered? By yourselves or your customer?	Who has ownership of this? What methods are used? By paper / computer / Special IT programme? If so what programme is used?
- Do you have a full understanding of the costs of distribution?	
- How are the elements of the cost of distribution broken down?	i.e. picking, processing, storage of product, equipment (packaging), transport
- Is the cost of distribution calculated per product or by distribution unit i.e. per pallet / per trolley etc?	
- How have costs changed over the last 5 years? What have been the contributing factors to this? How do you monitor the costs of distribution?	
- Are there any discounts to the cost of distribution linked to volumes?	If so what? Is it linked to lorry configuration or type of (size) of product being moved? Back-loading opportunities?

- How do you manage the control of returnable units i.e. trolleys / pallets / trays etc?	Who has ownership / control of these – you or your customer or the transport company?
- Has your method of distribution changed in the recent years? If so why did the changes come about?	Size of business, change in products supplied, volumes supplied?
- Do you use any IT systems to improve efficiencies? Any systems scheduling/forecasting?	IT packages? Control of stock? Processes i.e. picking etc? No. of people involved?
- How effective have these been?	

Collaboration

Questions	Prompts
- Do you work with other growers to distribute your products together?	If no, would they consider this? If not why not?
- If so – how does this work?	How long have they been working together? Who or what instigated them working together?
- What are the benefits?	
- What are the drawbacks?	
- Overall – what are the advantages of the distribution chain you currently use?	
- What are the problems with your current distribution system? Ideal world – how improve?	Inefficiencies? Communication? Customers? Service levels? Managing staffing levels in line with demand?

	Potential wastage of storage space? Packaging? Trolleys/pallets Lead times

The future of the ornamental supply chain

Questions	Prompts
- Going forward how do you see the way you distribute your products changing?	Specialisation – mono cropping, contracts etc
- What factors will instigate these changes?	
- How will you business need to change to manage this process changes?	
- What benefits will there be?	
- Going forward does the supply chain within the industry need to change and why?	
- How do you see the distribution logistics / supply chain changing within the industry?	
- What do you feel can be leant from other industries?	
- How will growers / suppliers have to change?	
- Profitability – how can this be improved through changes to the supply chain? If not covered already.	
- Any other comments?	

Specific questions for transport operators (or additional questions for horticultural companies who have their own distribution/transportation)

Questions	Prompts
What type of business are you?	Type of lorry, size of the fleet, area of coverage, no. and type of customer
What type of products do you distribute? I.e. horticultural?	Do you collect / deliver, is it one site in the UK or several Is it nursery stock, bedding plants, pot plants, cut flowers?
Is the customer base seasonal or all year round?	Are there non horticultural products?
What is the expected number of collections / deliveries each week?	Are they consistent through the week; what volumes are involved; are loads combined into larger ones to fill lorries?
What is the form of communication between your company and your customer?	What lead times are involved, and what handling/sorting processes are there between collection and delivery to the final customer?
Costs - of distributing product – what are the main factors that make up the costs and what affects these?	Type of product? Numbers of different products? Types of packaging used? Lead times? Back-loading? Volume?

- What proportion of the costs are attributed to each element?	Is it broken down by item/unit – why is it done this way?
- Do you use returnable units and if so how are these managed in the supply chain?	
- What improvements can be made by your customers to help streamline supply chain/make more efficient/reduce costs?	IT packages? Location of growers? Collaboration between growers – increase volume? Increase lead times? Regular deliveries Set contracts Type and number of products distributed? Methods of handling products? Set contracts
- How could you see distribution costs being reduced in future or cost savings made?	Volume increased? Regular deliveries as opposed to seasonal? Set contracts? More regional hubs for collection?
- What current changes in the supply chain/distribution are you seeing?	What are their impacts? Longer term what changes do you envisage?

Appendix II

Participating organisations

B&Q, Chandlers Ford, Hants

Homebase, Swindon, Wilts

Kinglea Nurseries / Dudley Horticultural Transport, Essex

Van der haas logistics, Rotterdamseweg 201A, 2629 HDDelft, NL

Logistic Flower Centre, Postbus 263, 1430 AG Aalsmeer, NL

Floraholland, NL

Bloemenveilling Aalsmeer Auction

Hans van Veen Export BV, Boskoop, NL

Freight Transport Association (FTA), Kent

Horticultural Trades Association (HTA)

Horticultural Development Council (HDC)

Johnsons of Whixley, York

Gist National Distribution Centre, Tamworth

Chris Clemens Sales & Marketing Bureau, Aalsmeer auction, NL

Florensis, Cambs

Syngenta, Guildford

Ball Colegrave, Oxon

GASA, Odense, Denmark

Midland Regional Growers / Bransford Webbs, Worcs

Rick White Ltd (Logistics and storage), Worcs

R A Meredith, Glos

Wyevale Nurseries, Hereford

Whetmans Pinks, Devon

Kernock Park Plants, Cornwall

Hillier Nurseries, Hants

Funstons Ltd, Herts

Farplants Ltd, Sussex

Anglia Group (Darby Nursery Stock), Norfolk

Palletline UK, Leicester

Hillier Nurseries, Hants

K B Butters, Lincolnshire

R A Meredith, Glos

Dr Bill Godfrey, Hook Mill Nursery, Surrey

James Coles & Sons (Nurseries), Leicester