

# Changes of access in local and global facilities due to the development of transport information systems TIS

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**"THE PARADOX OF THE GLOBAL- AND TECHNOLOGY-BASED ECONOMY IS THAT THE ENDURING COMPETITIVE ADVANTAGES LIE IN LOCATION-SPECIFIC COMPETENCIES - KNOWLEDGE, WORKFORCE SKILLS, CUSTOMER AND SUPPLIER RELATIONSHIPS, ENTREPRENEURIAL INFRASTRUCTURE, AND QUALITY-OF-PLACE ATTRIBUTES - THAT ALLOW FIRMS AND TALENT TO THRIVE. IN ESSENCE, THINKING LOCALLY TO SUCCEED GLOBALLY. "[7]**

## ABSTRACT

The advent of communications technology has revolutionised the way that we conduct our affairs. Services are now more prolific and accessible. Traffic Information Systems are helping to deliver those services.

It is important to recognise which services are sought after by the public and how they can be improved by TIS (Traffic Information Systems). Freight transport is one service that will increase due to the perceived chance in global access (Internet orders) and that can be improved by TIS. If goods are to be regularly ordered from afar then they need to be cheaper and be delivered quickly. TIS systems through VMS signs, real-time traffic prognosis and public transport information are allowing us to conserve time as part of our daily lifestyles so that we can access our local facilities as readily as the improved freight networks allow us to access our global facilities. The correct implementation of TIS will make transport easier, and reduce congestion times, however it will only be able to do so, if it is possible to break the correlation of increase in GNP and traffic. Otherwise TIS services will still be useful but greatly muted so.

## 8 CHANGES IN MOBILITY WITH TRANSPORT RELEVANCE

### 8.1 Integration of the Internet

"The integration of the Internet into modern U.S. society has been unprecedented. The time it took for different media technologies to reach 60% of the U.S. households.

The telephone took 30 years, computers 15 years, television five years, and the Internet two years" [1]

Though Internet orders did not replace conventional shopping, the amount of goods who need to be delivered to the door increased freight traffic, therefore physical tangible quantities need to be delivered as quickly and globally as the perceived speed and access of the internet where the goods are ordered.

Improved Transport Information Systems TIS are helping to overcome the existing deficiency in the transportation network.

### 8.2 Changes in Daily Commuting

In the last 20 years our organisation of daily life has significantly changed.

In Göteborg in Sweden there was a dramatic increase in the number of journeys by car, from the 1960s until 1989 this was due to increased wealth and status. However during the 1990s more environmentally friendly methods of transport are gained a larger proportion of total journey made. This was due to changes in attitude amongst the young, the position of new homes along public transport routes and an increase in public transport. The youth of Göteborg realise that a car is just an expensive means of transport not a status symbol and hence would prefer to spend their otherwise. They travel by public transport or cycle instead. The redevelopment of old rundown properties into modern apartments which are close to public transport stations has also reduced congestion in central Göteborg.[3]

### 8.3 Leisure Travel

During the 80s the "package holiday" was born, however now people are getting increasingly dissatisfied with buying the package and want increasing control over where they go and what they do, The internet has broadened their knowledge and Part of the success of the new Budget "no frills" airlines such as Buzz, go fly, Easyjet and Ryan air, has been the reduction in administration, tickets are booked by the consumer online detailing exactly what they want a transaction is then carried out by credit card and the tickets wait for the traveller at the airport ready for when they check in. This reduction in administration, i.e. no tickets, no travel agent ahas meant that these airlines can price themselves very competitively, This reduction in the price of travel has lead to a more mobile society.

TIS allow private consumers to perform inquiries and to receive information they once had to pay for at travel offices.

## 8.4 Food Miles

The food we eat has also changed, an increase in the numbers of people travelling both for business and leisure has expanded food awareness, and created a desire for international cuisine. There has also been an increase in women in the workplace.

This had had huge ramifications for the frozen food market, and had created a Home Meal Replacement market. These frozen meals can be prepared anywhere globally frozen and delivered to a local supermarket. The content of the frozen meals is also different to traditional foods. Traditional vegetables and even non traditional ones have now started being cultivated all over the world and with the increase in agricultural methods and economic considerations the miles travelled to produce the finished food product is continually increasing.

"To produce a small glass jar of strawberry yoghurt for sale in Stuttgart, strawberries were being transported from Poland to west Germany and then processed into jam to be sent to southern Germany. Yoghurt cultures came from north Germany, corn and wheat flour from the Netherlands, sugar beet from east Germany, and the labels and aluminium covers for the jars were being made over 300 km away. Only the glass jar and the milk were produced locally.

In counting the yoghurt's environmental costs, the lorry emerged as the main culprit. contributing to noise, danger and pollution. The study found that to bring one lorry-load of yoghurt pots to the south German distribution centre a 'theoretical' lorry must be moved a total of 1005 km, using some 400 litres of diesel fuel." [4]

TIS systems will be able to co-ordinate the lorries so that although there still may be economical driving force to travel this far due to the low price of fuel but they will travel in a more economical way.

## 8.5 Shopping Habits

The urban environment during the 80s was getting increasingly congested, TIS systems are trying to reduce congestion and promote an integrated transport system but increasingly it was and is the getting in and out of the cities that is difficult. Out of town shopping centres were developed to ease congestion in town centres, and also to help slow erosion of building and features caused by the fumes from cars. The problem of inadequate parking in city centres, became much less of an issue at out of town retail centres. They are more accessible again for deliveries. It could be argued that now in the 21st century the internet is also providing a similar solution to the problem of shopping in congested city centres. TIS systems are acting to help to decongest city centres but removing the purpose for the travel there through internet shopping is also helping in terms of reduced transport but the negative effects on city centres (less people – less consumers – less attractive) are also part of the problem.

# 9 TRAFFIC INFORMATION SYSTEMS

## 9.1 Variable Message Signs

Traffic information systems are acting with the support of the new infrastructure to provide increased access to the facilities that change in lifestyles has demanded. The redevelopment of the inner city Central Business District to combat the loss of trade due to out of town retail parks and internet shopping. TIS systems in the city centre take the form of Variable Message Signs detailing such traffic information as parking spaces within the carparks, park and ride facilities which help to decongest city centres by encouraging car drivers to use public transport to make more informed route choices The VMS signs are also used to improve traffic safety, by decongesting the city centres the Signs reduce the number of cars and hence lessen the environmental impacts.

Cologne is one city that has implemented these VMS signs the public have responded very positively to them.

"The example of the city of Cologne has shown that the use of VMS for real-time information at the roadside in the course of their journeys (Park and Ride information and route guidance in the case of incidents or events which are disrupting traffic) can have a considerable effect on the drivers' awareness of traffic conditions and alternative possibilities and behaviour. This example gives an overview as to how a VMS system might contribute to increase network efficiency and the quantity and quality of information available for drivers and journey comfort as well as to improve driver safety and environmental conditions. VMS can also support the objective of influencing the modal split in favour of PT(public Transport).

Moreover the Cologne example makes clear, that VMS can be used for different purposes with high flexibility. In addition to indicating alert and incident messages and park and ride facilities, the VMS in Cologne are also used for giving information about city events, and in future the timing to commute into the city by PT, as well as suggested speed by car. In Cologne, the existing VMS system has been enhanced through the addition of an extra component (e.g. linking of incident detection to existing VMS system in Cologne)."[5]

VMS signs are also capable of a more subtle kind of route guidance, if there is an accident or road works the VMS signs can publish a diversionary route. However there may be two or three possible alternative routes, however they may be environmentally sensitive, pass in front of school or have low bridges so not be suitable. So although one of these routes may be faster the residents living along the route would not want heavy traffic to be diverted along it. Hence the VMS signs publish an acceptable alternative route and the fact that it is advertised and the drivers do not have to consult their maps means that it leaps the cars from the more environmentally sensitive routes.

## 9.2 Travel Planning Systems

For an integrated transport system it is important that people know the times of all the connections, and that convenient connections exist for key routes, or else they may not use it. TIS systems are here to provide that information. Internet and telephone lines are

providing on line timetable and fares information. People like the feeling of being in control and planning their travel with all the information available. It is important that people have faith in the information and that they read otherwise they will not heed it.

### **9.3 Floating Car Data – and Travel Time Prognosis**

TIS can help plan the intended journey and amend the journey whilst it is being travelled. The difference between global TIS and local TIS is that local TIS is used whilst making the journey, whereas Global TIS is used for planning the route. The timetabling info on the internet plans the journey and TIS notice boards both at trains stations for public transport and VMS signs for private transport. The revolution of the telecommunications systems has enabled real time traffic information to become standard. Floating Car Data (FCD) is a new way of collecting data on the road network, it makes it easier to calculate journey time on any route through a city for private vehicles. It works by taking advantage of the GSM network and the fact that almost everybody carries mobile phones. In Austria the mobile penetration rate is 84%. These mobiles send out an sms to identify themselves whenever they change areas of same network coverage, called cells, from this data which details from where they came and to where they are travelling it is possible to work out speeds at each part of the city. These speeds are then used to calculate journey time, detail locations of traffic jams which is relayed back to the drivers by either VMS signs or can be sent directly by sms to the cell phones.

### **9.4 Freight Implications**

TIS has implications for the freight network as well. There are now many internet based companies that co-ordinate lorry loads. The truckers pay a subscription to the web based firm and then they are allowed to register their details. The web based firm provides a matching database service so packages are registered and lorries with spare space are also registered with contact details. The truckers then co-ordinate themselves to picking additional packages up. This service has been a revolution for small businesses as it has made freight transport much cheaper.

## **10 THE FUTURE WITH TIS**

Today the whole complexion of urban environments have changed, travel around cities and along major transport routes is easier, both for locals and visitors. For locals its is due to the VMS signs along the routes and the increase in public transport as part of an integrated transport strategy. There has also been an increase in the more environmentally friendly types of housing. There is a new type of apartment becoming increasingly popular, which has very good public transport links but limited car parking spaces. There have been trials with car sharing in this type of housing for example in Bremen. It was successful and there are now plans for implementing similar projects elsewhere.

“The results from the experiment showed that none of the six test households felt restricted in its mobility, that a change of transport mode affects other behavioural patterns (e.g. shopping), and that the non-availability of a car leads to replacement activities (e.g. bicycle tours instead of car trips to the countryside). The experience of such effects make up the core elements of a new lifestyle in a car-free residential area. If people deliberately opt for such a lifestyle they have to accept that this includes other qualities and quantities in mobility. In particular, this applies to the travelling times, travelling as a social space, and the sensory perception of self and the environment”

Peoples mobility has increased this has meant that in the cities there are more visitors and tourists , this is due to cheap budget airlines but also to an increase in psychological mobility, the internet as increased awareness of what is available, and which places are out there

However the increase in Global communication has also been an important factor in the increase of psychological mobility. All these factors lead to the feeling that the world is getting smaller hence it is not too hard to travel and visit it. TIS with on line timetable, fare and booking facilities increases private use of location information.

The internet has provided a shopping service. It is now possible to evaluate goods and compare prices without trekking around the shops and then have it delivered to your front door. Also is known that can get anything on the internet and that the package can be tracked from its availability in the warehouse to exactly where it is en route and to the your front door. The expectation now is for global goods with a local service, on line tracking and e-commerce ability is supposed to be one of the primary needs for success of freight companies in the modern market place.

People tend to expect quicker approach to variety of goods, global ideas have become local expectations. The whole way we live and even our economy has become based on providing good service.

"The paradox of the global- and technology-based economy is that the enduring competitive advantages lie in location-specific competencies - knowledge, workforce skills, customer and supplier relationships, entrepreneurial infrastructure, and quality-of-place attributes - that allow firms and talent to thrive. In essence, thinking locally to succeed globally. [7]

Traffic Information Systems are expected to keep developing, ways of collecting FCD are expected to improve, the more people who become involved in FCD the more accurate it shall become. FCD is expanding its applications as well. It intends to make use of the car sensors so that weather may also be recorded, and relayed to other vehicles. The freight databases also work on the principle that the more people that use them the more successful they become. In essence traffic information systems are going to become more prolific because they rely on a large user base they shall improve.

## **11 CONCLUSION**

People are always going to need the same facilities they are always going to get hungry, need shelter, require social interaction and be organised into communities.

The change is going to come in how people go about fulfilling these needs.

The internet continues to increase awareness of multicultural customs, different languages, different food, different business practises. It will also continue to be harnessed as a new business opportunity, as a way of improving service.

Traffic information systems are going to be important in the way that this improved service is brought about. TIS will be harnessed in the co-ordination of the freight network, the bridging of the gap between virtual and real. TIS will be relied on to provide up to the minute real time information for the journeys already being carried out. This will help to alter how people access the local facilities near them i.e. how they get to work, the theatre, the restaurant. They will receive this information via VMS signs or by text messages direct to their mobile phones or to a special traffic information facilities within the car.

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