NETLIPSE Moving Forward
by Leendert Bouter

This issue of our magazine marks a new phase in the NETLIPSE initiative. Much has happened since the publication of last issue in February 2009 and we are very proud and happy to announce that last month we received the formal EU decision to support NETLIPSE in the next phase.

Since our previous network meeting in Amsterdam, we focused on interesting more member states to NETLIPSE, the development of the Infrastructure Project Assessment Tool (IPAT) and the start-up of Special Interest Groups (SIGs). More on these subjects in this edition. Furthermore, the launch of the new website and upcoming Network Meeting will be discussed.

The United Kingdom Department for Transport and the Dutch Ministry of Transport, Public Works and Water Management are the two beneficiaries of NETLIPSE and are working closely to continue the NETLIPSE initiative and expanding our ever-growing network. One of our main tasks is to establish an organisational structure that will efficiently manage the NETLIPSE Network in the long term, ensuring the management and further development of the IPAT and the training programme. In order to do so, the involvement of other member states, as well as project organisations, financial institutes, insurance companies and the European Union itself, is crucial. These parties can support NETLIPSE by working together in the execution of this Programme. Furthermore, participants can participate in and profit from the development and first results of the IPAT, join the Special Interest Groups, join Network Meetings and have access to our knowledge network via the NETLIPSE website. A new website will be launched in November. This issue will focus especially on these subjects.

The NETLIPSE Programme Director, Marcel Hertogh, will give an update in the development of the IPAT. He will discuss the progress being made in the last couple of months and focus on the results from the first pilot studies carried out with the IPAT. There are three projects selected for this pilot assessment. As announced at the last Network Meeting, three Special Interest Groups (SIG) have been erected. Pau Lian Staal explains what their themes are and how you can get involved. These SIGs will meet and discuss interesting topics at the next Network Meeting.

In April, the Noord/Zuidlijn and Dutch Ministry of Transport, Public Works and Water Management hosted the sixth NETLIPSE Network Meeting. More than 50 people joined us in visiting the Noord/Zuidlijn, the new metro line currently being built in the centre of Amsterdam. Pau Lian Staal arranged an excursion and invited the Project Director of the Noord/Zuidlijn to talk about challenges the project is facing. Furthermore we talked about the development of the IPAT and the start-up of the SIGs. The TEN-T Executive Agency introduced itself and Professor Etienne Dewinne presented the Seine-Scheldt TEN-T project. In this magazine Charles Vicary will give his personal reflections on the Network Meeting.

We look forward to our next Network Meeting in Zagreb. We are very pleased that the University of Zagreb, Faculty of Civil Engineering will host the meeting which will take place on November 9th and 10th 2009. You can pre-register for this meeting via the website www.netlipse.eu.

I look forward to meeting you in Zagreb.

Leendert Bouter, Chairman NETLIPSE Board

Leendert Bouter

October 2009 #6

CONTENT
From the Chairman NETLIPSE Board, Leendert Bouter 1
Using the human aspect assessment tool in the tender phase of projects 2
Introducing Sustainable transport elements in the infrastructure assessments 4
Personal Reflections on the Amsterdam NWM 7
Special Interest Group update 9
Evaluation Lisbon airport 9
Interview Brane Semolic – scientific perspective 13
IPAT update 14
Best Practice Guide UK Institute of CE 15
Coming NWM, facts & figures 17
NETLIPSE Calender 17

NETLIPSE Programme Director, Marcel Hertogh, will give an update in the development of the IPAT. He will discuss the progress being made in the last couple of months and focus on the results from the first pilot studies carried out with the IPAT. There are three projects selected for this pilot assessment. As announced at the last Network Meeting, three Special Interest Groups (SIG) have been erected. Pau Lian Staal explains what their themes are and how you can get involved. These SIGs will meet and discuss interesting topics at the next Network Meeting.

In April, the Noord/Zuidlijn and Dutch Ministry of Transport, Public Works and Water Management hosted the sixth NETLIPSE Network Meeting. More than 50 people joined us in visiting the Noord/Zuidlijn, the new metro line currently being built in the centre of Amsterdam. Pau Lian Staal arranged an excursion and invited the Project Director of the Noord/Zuidlijn to talk about challenges the project is facing. Furthermore we talked about the development of the IPAT and the start-up of the SIGs. The TEN-T Executive Agency introduced itself and Professor Etienne Dewinne presented the Seine-Scheldt TEN-T project. In this magazine Charles Vicary will give his personal reflections on the Network Meeting.

We look forward to our next Network Meeting in Zagreb. We are very pleased that the University of Zagreb, Faculty of Civil Engineering will host the meeting which will take place on November 9th and 10th 2009. You can pre-register for this meeting via the website www.netlipse.eu.

I look forward to meeting you in Zagreb.

Leendert Bouter, Chairman NETLIPSE Board

Leendert Bouter
Introduction

Until recently, the Dutch Ministry of Transport, Public Works and Water Management (RWS) selected their constructor of infrastructure projects via a competitive tender process. RWS provided the design and awarded the project to the constructor based on (lowest) price and (shortest) execution time. In recent years however, the policy has focussed on involving constructors in the design phase, to better utilize the knowledge and experience of constructors in the design of infrastructure. Result should be a better match between design and execution and a method to give way to innovative ideas. By providing the constructor with a set of requirements for the design and proposed result, RWS plays a directive role within these projects.

Benefits and possible negative aspects

Involving the market early in infrastructure projects has resulted in tenders with new and creative solutions with potential benefits for both the constructor as well as the awarding authority. However, some problems do arise:

- After awarding the contract, some misinterpretation between both parties may exist e.g. about requirements with regard to sustainability and maintenance costs.
- It turns out that not everything can be written out in contracts, room for misinterpretation is always present.
- Dividing risks and uncertainties usually leads to discussions about who is responsible for side effects due to special circumstances.

Consequences of these aspects are a reverse of the dynamics aimed for and loss of quality, sometimes even resulting in court settlements. A scan of major infrastructure projects resulted in the conclusion that these reverse dynamics could be prevented by encouraging both parties to get more involved in collaborative relationships.

Collaboration as a Road to Success

‘People are crucial’ is endorsed in the construction industry and matches one of the strategic objectives of RWS. In order to succeed in its client role, RWS has given much attention to developing the capacities and capabilities which are needed to grow accustomed to this new role. People make the difference in the success of a project. According to Ruijter: “A tight contract followed by poor collaboration leads to worse results than an inferior contract with good collaboration.” That especially seems to be the case for projects with an unclear or uncertain end result, or a project full of uncertainties.

Although the abovementioned premise is recognized within the construction industry, it still is noticeable that adversarial relationships and distrust continue to lead to a suboptimal project performance. A solution could be to focus on the quality of the human relations (human relations management).

Collaboration is the ability to recognise and grasp the common objectives and interests in order to act in mutual consent. Sometimes these interests are mainly consistent, sometimes they are contradictory. In the latter case you will find some form of quid pro quo – you win some; you lose some, but together the best possible results can be achieved. Being sensitive to each others situation and interests is essential. Mutual generosity leads to mutual confidence.

Case: Project ‘Extension of the Born, Maasbracht and Heel Locks’

One of the first RWS Project Directors to formalise this experimental idea was Hans Ruijter. As Project Director of the Maaswerken, one of the projects researched in the initial NETLIPSE research, Hans Ruijter included the quality of the management and organisation of both the constructor(s) as RWS itself, in the selection criteria of the tender phase of the activities involving the Born-Maasbracht-Heel locks (project budget approx. €151 million). The basic principle was that the quality of the RWS team and that of individual constructors, together with the quality of collaboration, are of vital importance to the success of the project. Matching teams from both sides are vital for success and deserves full attention.
During the tender procedure one of the main RWS goals was to reduce the negative aspects of involving the market in the design phase of a project. Furthermore, the extension of these Born-Maasbracht-Heel locks can be seen as a complex project with much uncertainty. Possible sources for problems are the age of these locks and the uncertain state in which they operate. Also, the foundation of these locks is questionable. One major requirement, with great impact on the organisation of this project, was that barges could not encounter any inconvenience during the construction phase. Hans Ruijter argued that these characteristics asked for an approach with full understanding of the position of one another and with open communication, in order to deal with potential uncertainties.

RWS developed a method asking contractors to illustrate their view on collaboration at the beginning of the tender phase. Furthermore, contractors were asked to offer personnel for each of the key roles within the project who would retain the key positions throughout the project. The contractors had to provide information on each key player with respect to their collaboration capabilities and experiences. Finally, these key players (as well as the RWS key players) were assessed by an external organisation to match their capacities and characteristics with those that were deemed necessary. This approach is ground-breaking and could also be quite risky. What if, for example, the RWS key players scored badly on the assessment?

Continuing innovation

Based on aforementioned results we could conclude that there is great potential in involving the market early in infrastructure projects, combined with attention for collaboration processes and human relations. In short; people make the difference. Within RWS there is an ongoing research project which should lead to a fully developed method for using assessments as a tool to involve the human aspect in the tendering of infrastructure projects. Focus of the project is identifying the conditions for collaboration and the way these conditions (or: capabilities) could be utilized when multiple parties enter an agreement and form a team to execute a project.

Basic principle of the research is:
Contractors and RWS teams are capable of entering better collaborative relationships and are willing to invest in the relationship, resulting in less uncertainty and better responsiveness to unexpected events.

In order to reach this goal, the research team is asking the following to experts within the RWS organisation:

• Which qualities and capabilities should be present on the constructor's side and client side to endorse a good collaboration and to achieve optimal project performance?

• How could these qualities and capabilities be stimulated in practice and supported within organisations, in teams and by individuals? One could think of process architecture, learning by doing, identification and dissemination of best practices, etc.

• How can the tender process focus on involving essential (or required) qualities in such a way that this does not ask for an unrealistic investment on both sides (i.e. contractor and client)? And in such a way that it does not conflict with tendering procedures.

What is your answer to these questions? Hans Ruijter, his research team and the rest of the NETLIPSE network could benefit from your experiences. A good opportunity would be at the next Network Meeting in Zagreb! We look forward to discussing the results and development of the tool with you.
Luckily this wasn’t the case, but this approach of assessing human aspects in the tender has yet to prove its success as the project is currently in the realisation phase. An evaluation of the approach has lead to the following conclusions:  
• All parties involved agree that the quality and capabilities of project employees are important factors in the success of a project;  
• The introduction of a new selection element in the tender phase leads to a discussion on the possibility of legal risks potentially jeopardizing the tender;  
• Next to assessing human aspects, in next projects, team assessments should be introduced;  
• The assessment delivered a good objective evaluation and sufficient differentiating capacities;  
• The project team succeeded in finding a method for introducing HRM aspects in a tender;  
• The method was quite technical and a large time investment, RWS was more positive than the contractors. The goal of achieving a better project team need yet to prove itself;  
• The method is especially suitable for large projects that have a large impact on the environment;  
• The method will be developed further in the future.

Conclusion  
In order to reach a conclusion on the possible success of this new approach, we asked Luc Claes what his experiences are. As project manager of the Born, Maasbracht and Heelocks extension project, he experienced first hand the results of the chosen approach. When asked, Luc mentions that collaboration did get full attention from the start of this project. By knowing each others qualities up front, the potential benefits of each individual team member can be better used. This resulted in more trust and a better team as a whole. Continuity is of great importance in order to build these relationships, both from the client as the contractor perspectives. Investing in collaboration doesn’t stop when the contract is awarded. To discover mutual interests and expectations, a project start-up was organised with help of a external facilitator. A set of rules was designed for the project team:  
• respect each others targets and work together on mutual goals;  
• aim for a win-win situation;  
• don’t avoid arguments, don’t leave problems to another;  
• discuss what needs to be done when problems or conflicts do arise (levels of escalation);  
• use the phone when considering an email;  
• keep in touch, keep talking.

This pilot project is part of an initiative in Dutch construction industry aiming for better use of team coaching, reflection and external process guidance. When we asked Luc Claes if this initiative does indeed result in more use of these methods, he agrees. So far it seems that parties are willing to make better use of their mutual agreements and are continuously communicating. Together they are working on (mutual) problems (regarding environment and technology) and so far this is proving to be most effective.

Stipulation in this whole process was that through mutual consensus between RWS and the contractors, each party was willing to enter this experiment. Main reason for this being the belief that the human factor just might be the key to project success. Working on developing this method further, RWS will most probably go ahead with the method in two other RWS projects in the near future.

Frank Jacobsen and Paul Lian Staal

Introducing long term sustainability in transport infrastructure assessment

by Giuseppe Pace,
Researcher Ghent University, Department of Mobility and Spatial Planning

Nowadays, sustainability is a veritable keyword for every public policy. Decision-making increasingly incorporates sustainability in the long-term economic, social and environmental planning.

So there is a growing demand for suitable planning tools as well as for indicators, which should help to find out how individual short-term decisions affect long-term strategic goals. Transport plays an important role in sustainable development because its growing relevance for mobility and accessibility, as well as its high consumption of non-renewable energy, its major environmental impact and a large carbon footprint. Currently, transport
accounts for 32% of Europe’s energy consumption and 28% of its total CO2 emissions. In addition, by 2010, it is expected to have accounted for 90% of the forecast increase in CO2 emissions since 1990.

Decision-making in transportation is affected by many factors, being the demand for transport a derived demand: transport is not demanded for what it is, but for what it can do. Factors as price, quality, speed, safety, users income, and common behaviours affect the choice of the transport mode. In addition, “external effects” or “externalities” are produced by the interaction of the transport system with environment, safety, public health, land use and congestion, which need indicators in order to be accounted and integrated in the decision-making.

With the exception of land use – which could have positive effects – the external effects are on balance negative. A largest part of studies and analysis focusing on sustainability are related to the measurement of the “external effects” of economic activities. The purpose of this short contribution to the NETLIPSE magazine is to evoke a need to develop indicators for assessing and monitoring large transport infrastructure in terms of sustainability, bearing in mind that the concern for sustainability always changes priorities and expands the range of solutions applicable to transport problems.

**Sustainable transport**

The concept of external effect does not cover all aspects of the notion of sustainable transport, which is a more comprehensive forward-looking concept aiming at the achievement of a better overall level of welfare for the society, including environmental quality and social justice. Sustainability in transport concerns systems, policies, and operates fairly and efficiently, promotes equity within and between successive generations, limits emissions and waste, and encourages the use of renewable resources. The employ of verbs such as “to promote” and “to encourage” suggests that the concept is not used for assessing a current sustainable state of the system, but for promoting a transition towards a sustainable condition.

Many studies and programmes have investigated sustainability in transport, and there is extensive literature on the argument. In particular, they deal with the two main transportation parts: the mode of transport and the infrastructure. The first covers the vehicle used to move people or goods, in general cars, buses, trains, aeroplanes, lorries, ships and so on. The second, the way with which the vehicle is used and includes roads, railway track, airspace, sea channels, as well as facilities such as stations, distribution centres, ports and airports. Obviously, only when both parts are sustainable a transport can be considered as sustainable. With reference to decision-making, the decisions on modal choice are made by millions of consumers, and the day-to-day operation of the main modes of transport is very much in the hand of private companies and individuals. On the contrary, although financial resources more and more come from the private sector, decisions on building infrastructure are mainly taken by the governments, and they are the only way to affect transport behaviours and to promote sustainability at national and European level, together with indirect taxation and subsidies. Social and political arenas universally agree that transport must be sustainable and, therefore, that transport infrastructure must be sustainable. Such commitment, nevertheless, risks to remain a wishful thinking without a long-term shared vision, a strategic planning, and ways to measure its implementation.

**Developing sustainable transport infrastructure**

For measuring sustainability of transport modes and their impacts on environment and health several indicators have been selected, enough flexible to be adapted to technological innovation and society changes (greenhouse gas emissions; pollutant emissions; noise, congested traffic; car dependence; traffic volume; collisions; road kill; etc…). In particular, there has been defined an aggregate indicator, the so-called eco-efficiency, which is “the amount of natural resources use (including emissions) in physical terms in relation to the output of the activity, either in physical terms (e.g. tkm) or in value terms (euros)” (Perrels, Himanen & Lee-Gosselin, 2008).

Problems arise when we want to measure the sustainability of future transport infrastructure. Any appraisal of new investments in infrastructure is made over a long time period: 30 years is typical for a new stretch of road and in the case of major project, it could be as much as 50 years. We can expect that building a transport infrastructure is a long process and for many aspects with a very little flexibility.

Remaining at financial level, it is a common belief that public transport infrastructure projects involve many risks and uncertainties, partially explained by the long period of time taken in the design and construction of project once the decision of proceed has been taken. In a more comprehensive forward-looking approach, those uncertainties have relevant impacts on the infrastructure sustainability too. Let us clarify that point: when a new technology able to mitigate some impacts becomes available, or new behaviours or lifestyles take root, or new global, national or local policies are set up, a transport infrastructure should have the capacity to adapt itself and provide the necessary support to minimise future negative transport externalities. Therefore, the introduction of radically more fuel-efficient propulsion technologies can reduce greenhouse gas emissions and break away from the overwhelming oil dependency only if infrastructure is ready to provide the necessary facilities and the society has progressed in social learning. For large infrastructure projects, the process of adjustment is possible only if already included in the project alternatives. That means the need to develop a long-term vision of a desirable future for transports, able to provide an effective and efficient service, and nevertheless sustainable for environment, society and economy. Any vision, however, is the product of the current society.
Changing society also the vision changes, as well as its social and economic implications. Assessing today long-term transport trends, their impacts, and the economic and social implications of continuing with ‘business as usual’ could be not enough in the absence of strategies for achieving sustainability, ensuring at the same time technological enhancement and changes in transport activity. The overall transport strategy, therefore, should incorporate infrastructure development, together with technology policy, pricing, transport demand and traffic management, improvement of public transport, and encouragement of “soft mobility”.

On the one side, the overall process of infrastructure construction must be speed up, by capturing synergies, avoiding counteracting effects, building broad support and co-operation among concerned parties, ensuring their commitment and enabling broad public participation, raising public awareness and providing education programmes. On the other side, consistent and well-defined indicators for sustainable infrastructure should be provided for ex-ante evaluation, monitoring implementation and public reporting, as well as management tools should ensure follow-up actions to adapt the strategy according to received inputs and new scientific evidence.

**Forecasting transport and energy**

Long-term projections for the transport sector, which cover a broad spectrum of trends and effects without loosing too much dept, are rare. How can decision-makers anticipate future innovations in transport and energy during a large transport infrastructure planning? Are planners, promoters and builders able to do that? Depending on the lead theme, transport projections tend to either be based on dynamics within the transport sector or on important technical changes (including energy and fuel technologies) or on important societal changes.

Infrastructure design should incorporate alternative global scenarios, and their sustainability indicators, first in the ex-ante evaluation and then in the monitoring system of the implementation phase, in order to modify the project outline.

Many analyses and reports have provided perspectives of transport and energy trends. The OECD EST (Environmentally Sustainable Transport) project represents one of the best example. Started in 1994, the EST project aimed to develop long-term scenarios and identify instruments and strategies capable of achieving a sustainable transport by using a back-casting methodology. Another example is the report “European energy and transport: Trends to 2030” published by European Commission since 2003 every two years. Its last “baseline” takes into account the high energy import price situation, as prevailing in recent years, steady economic growth and energy/environment policies and measures implemented in the Member States.

Nonetheless projections show high uncertainty, which is at the basis of a certain conservatism in the transport planning.

From the research side, the EU Seventh Framework Programme (FP7, 2007-2013) give priority, in the transport sector, “…to develop ‘safer, greener and smarter’ pan-European transport systems that will benefit all citizens, respect the environment, and increase the competitiveness of European industries in the global market”. In addition, the European Research Area (ERA) developed its own vision at 2020, which includes sustainable transport. But even in that case, the research approach is mainly directed to develop advanced engine technologies and reduce emissions, developing integrated technologies to recycle 95% of automobile parts and materials, as well as active and passive cost-effective noise control, but very little in developing a new infrastructure approach.

Notwithstanding the impressive challenges of energy, climate change, globalisation, ICT, and the ageing population faced by society, the economy and policy-makers, surface transport-related research is still not integrated.

**A mission for the IPAT tool.**

The weaknesses of the approaches, indicators and tools for developing sustainable infrastructure are key challenges for NETLIPSE and its IPAT tool. In particular, the network should provide advice on selecting indicators for sustainable transport, bearing in mind the need of monitoring across sectors and spatial levels for sustainable transport. For example, the radical changes needed due to climate change, the exhaustion of cheap oil sources and urban air quality in cities around the world, ask for technical, political and social answers, such a move away from the use of fossil fuels, to other forms of energy conversion and energy sources. Such answers could be incorporated through interactions with complementary networks. The IPAT should assist the preparation and implementation phases, by designing a monitoring strategy to adapt the infrastructure to an effective delivery of sustainable transport goals (e.g. a method for selecting and prioritising which indicators to measure for which purposes). Furthermore, the tool should help to make concrete progress in the understanding of the interaction effects within spatial dynamics, such as indirect and longer-term effects on the land use.

**Bibliography**


Perrels A., Himanen V., Lee-Gosselin M. (eds) (2008), Building Blocks for Sustainable Transport, Emerald, Bingley UK.
I trained as an economist, but over the years became less involved with my academic discipline because of my inability to keep track of the increasingly mathematical nature of the subject as Econometric modelling became more important. This was probably a good thing for the future of Economics, and I suffered no ill effects as I managed to lead a very interesting career in the transport industry in general and in the railway industry in particular.

Results of the NETLIPSE 2006-2008 research
One of the really attractive elements in the NETLIPSE 2006-2008 research was its empirically based approach to which I could empathise, as a Project Manager in the somewhat subjective area of Organisational Change. I was however concerned that the quite legitimate demands of potential users of a project assessment tool for quantification - to enable objective and scientifically based evaluations and comparisons to be made - could result in it becoming similar to my past impression of Economics – interesting, but too ‘Academic’.

I was therefore very reassured during Prof. Schalcher’s presentation to the Amsterdam meeting and the subsequent ‘SIG’ session, to detect clear awareness that there were two audiences for the assessment product – the European Commission, EIB and other sponsors / funders who quite rightly looked for rigour in analysis on the one hand, and Project Delivery Organisations (PDOs) on the other. Project management had to feel confident that there was openness to the approach for them to be able to give it the wholehearted commitment that successful application would demand. A ‘Black Box’ methodology – where input fed a process where results emerged without any clarity of the intermediate stages of analysis - would not engage the support of those whose cooperation was an essential precondition of success.

PDOs would need to see that the empirical nature of the research had carried through into the methodology of review and subsequent analysis. The assessors conducting the reviews would need to carry an air of experience and competence with which the project managers involved could empathise. The results needed, in addition to presenting a standardised scoring, to present a commentary drawing on the practical experience of the assessors which would add authority to assessment tool’s conclusions. From discussions it was clear that the need for balance was recognised and, whilst reaching that balance may not be easy, every effort will be made by the developers to reach that position.

The Network Meeting
The sixth NETLIPSE network meeting was held in beautiful spring weather in Amsterdam on 20th and 21st April and was attended by a wide variety of representatives from project teams, academia, sponsor organisations and the European Commission. In addition to many familiar faces it was encouraging to see several new ones – evidence that word of the NETLIPSE approach was spreading and that interest in its output was growing. The meeting was the first to be held since the European Commission had announced support for NETLIPSE 2008+ and there was real interest in hearing about the plans for this second stage which was now moving forward. Programme Director, Marcel Hertogh, outlined these plans during the opening session.

NETLIPSE activities
The results from NETLIPSE 2006-2008 had been distilled into an Infrastructure Project Assessment Tool (IPAT) which, whilst still in a development stage, had moved well beyond conceptual terms. There was a need to identify two or three large infrastructure projects against which the IPAT could be tested and the results iterated and calibrated. Associated with these developments was a need to document the processes involved to ensure a standardised approach and to train more assessors, experienced in project management and in project appraisal, so as to broaden the pool on which future work could draw.
Special Interest Groups (SIGs) were being formed to provide a closer focus on specific themes or areas of application within the overall umbrella of NETLIPSE. Reference has already been made in a previous Newsletter to SIGs for those interested in ‘Business Cases’ and in ‘Contracting’. In addition to these, the Amsterdam meeting would see the launch of a ‘Communication & Stakeholder’ SIG, and consideration was being given to the formation of groups to consider Risk Management and Sustainable Mobility.

Underlying all activity however was a pressing need to spread awareness of NETLIPSE and its work to as wide a constituency as possible to ensure that a critical mass of support was built up. In the European context it was crucial that a consensus in its favour emerged from a substantial majority of the sponsoring Ministries in EU member states and amongst financial institutions and insurers.

Lively presentations and discussions
As ever the Meeting was enlivened by spontaneous discussion during and after the many interesting presentations made. José Anselmo set out the challenging and changing environment within which NETLIPSE and IPAT would have to operate. European elections, a new Commission and a restructured Directorate responsible for Transport projects would all add to uncertainty to a situation, made all the more challenging by the economic situation. The practicalities of funding a specific TEN-T project were spelt out by Prof. Etienne Dewinne of the University of Gent who described the Seine – Scheldt Inland waterway project.

Arjen van Binsbergen described an associated research project exploring the changes necessary in culture, practices and organisational systems to ensure a successful Transition to Sustainable Mobility (Transumo). The effective and efficient use of scarce resources, facilitated by the NETLIPSE approach, was of clear relevance to the project.

Current and planned projects were described by Steen Lykke and Sigi Herzog. Steen – who had been closely involved with the Øresund project, with which many present were familiar since it had been one of the NETLIPSE 2006-2008 case studies – planned to adopt many of the processes used there to his new responsibilities as Project Director for the Femern Baelt project. This was a fixed link – as yet only in its planning phase – to join Germany to the network of highways and rail links through Denmark and on into Scandinavia. Sigi described the project to create a new Station in Vienna, obviating the current need for rail passengers to cross the city by Metro to continue their onward journeys. He also described the interfaces between Federal and City Governments and the various parts of the ÖBB involved in the project which would also provide additional living, business and retail facilities, whilst maintaining operational functionality through the project’s duration.

Peter Dijk, set out three dilemmas or issues currently facing the project management of Amsterdam’s Noord / Zuidlijn Metro project. These provided the basis for subsequent discussion in smaller groups and also provided background to a subsequent fascinating site visit to the site of the NZ’s future Europaplein Station.

The confidence of engineers and planners involved in all such large scale projects was symbolised for me by the two parallel ‘targets’ marked on the face of a construction shaft on site where, hopefully in the not too distant future, tunnel boring machines will emerge having completed their complex and challenging task of boring in the soft soil of Amsterdam. As we walked around, clad in protective boots and hard hats it was not too difficult to imagine the flow of passengers through and past the station which would form a key access link to the City’s RAI Conference Centre.

In conclusion
The site visit and NETLIPSE Network Meeting brought together for me the key messages from my involvement in the whole process. Firstly, that our area of interest is one where really exciting possibilities exist to improve infrastructure, on which we all depend, in more cost efficient and speedy ways. Secondly, and most importantly, that despite national differences in culture and approach the majority of project problems faced across Europe (and indeed the world) are similar – and that in resolving them the key resource is identical – people...
Special Interest Group update

Special Interest Groups (SIGs) are established as part of the NETLIPSE network, dedicated to sharing, researching, developing and disseminating knowledge and experiences on specific topics in the management and organisation of large infrastructure projects.

Interested members from the network can join or lead a Special Interest Group by organising or attending group discussions on specific themes, organising events, presenting at conferences and/or preparing publications, tools etc. Network members can be members of more than one SIG. The SIG corresponds to the overall goal of the NETLIPSE network namely, developing the management and organisation of large infrastructure projects in Europe.

The themes of the SIGs are specifically chosen to correspond to the themes that are developed in the Infrastructure Project Assessment Tool (IPAT). Development of the IPAT has started and as you can read in article by Marcel Hertogh in this issue, much progress has been made. But, in the meantime, questions and new opportunities arise from the IPAT development. This is where the SIGs can play a vital role.

In the last couple of months, the following SIGs were introduced:
- Communications & Stakeholders
- Business Cases
- Contracting & Procurement

Each Special Interest Group will be coordinated by an Issue Manager. This is an individual who acts as a spokesperson for the SIG and is responsible for keeping the SIG alive and running. The Issue Manager is appointed by the NETLIPSE Board. Currently, one Issue Manager has been appointed, namely Matt Dillon, Project Sponsor Depart of Transport United Kingdom.

At the next Network Meeting in Zagreb, the Issue Manager (or a representative) will host a SIG meeting in the form of a parallel session and discuss plans for the activities of the SIG. Also, Pau Lian Staal will explain in detail how to become involved in a existing SIG or how to start a new SIG. The number of SIGs is not limited. If more than two Network members decide it is interesting enough to initiate a SIG, they are free to submit a request to the NETLIPSE Board. The Board decides on the feasibility of a SIG, which may have a temporary nature, i.e. for the research or development of a specific topic, or have a more ongoing nature.

If you are interested in joining a SIG, becoming an Issue Manager or would like to initiate a SIG, please contact Pau Lian Staal at paulian.staal@netlipse.eu.

The “New Lisbon Airport” project and the Location Assessment Study carried out by LNEC

by António Leme de Macedo
Director of the Transportation Department
Laboratório Nacional de Engenharia Civil (LNEC)
Member of the Executive Board of NETLIPSE

A brief presentation on the background and state of progress of the Project of the “New Lisbon Airport” (NAL), launched by the Portuguese Government, to be in operation by 2017.

In 2007, at the planning stage of this process, an assessment study was commissioned by the Ministry of Public Works, Transports and Communications to LNEC (the National Laboratory for Civil Engineering) for the comparison of two alternative sites for the location of the airport.

The author of this article was one of the coordinators of this study whose main aspects are hereafter described.
1. Background
The existing Lisbon Airport at Portela started operating in 1942. By the end of the 60’s, governmental initiatives were initiated aiming at replacing this airport by a new one at the Lisbon Region, for serving the capital city of Portugal. Nearly a dozen possible site locations for this infrastructure have been assessed throughout numerous studies carried out since then.

In 1998, a new public company, NAER, S. A. – New Airport, was established to develop the studies that were necessary to support a decision on this matter. At that time, two alternative sites were under consideration, one to the North (Ota zone) and the other to the South (Rio Frio zone) of the Lisbon Metropolitan Area. A preliminary choice was made in 1999 by the Portuguese Government, indicating Ota as the best alternative, based on the results of an Environmental Impact Assessment. Therefore NAER started a set of studies for that site, involving national and international enterprises and consultants.

The need to replace the existing airport, located within the urban area of Lisbon, was becoming urgent due to increasing passengers’ and freight demand and to operational, safety and environmental restrictions (such as noise), as well as the lack of available space for runway extensions. In 2005 it was estimated that the airport (after additional airside and landside investments) would reach its maximum capacity by 2016, accommodating 16 million passengers per year. Considering the previous decision and NAER studies, the Government announced then that the construction works of the New Lisbon Airport (NAL – “Novo Aeroporto de Lisboa”) at Ota would start in 2008, for completion in 2017, with an initial capacity of around 20 million passengers/year.

The site location chosen for the NAL was, however, far from consensual, being criticized by several stakeholders of the technical community, including academia, and echoed by the media. In fact, despite some advantages (e.g. good accessibility either by conventional or planned high speed railways) the Ota zone, located about 45 km from the centre of Lisbon, presented several drawbacks, namely related to difficult terrain and hydrological conditions, implying complex engineering, huge earthworks and high construction costs, as well as some restrictions to air operations.

In June 2007, based on a viability study report, the Portuguese Industry Confederation (CIP), presented to the Ministry of Public Works, Transports and Communications (MOPTC) an alternative site to Ota that had not been previously considered, since it was included in an area reserved for military use: the CTA (“Campo de Tiro de Alcochete”) zone, located at about the same distance as Ota, to the East of Lisbon, at the South bank of river Tagus. The advantages shown in this preliminary study and the willingness to meet a broad technical consensus, led to a decision of the Ministry to commission to the National Laboratory for Civil Engineering (LNEC) a comparative assessment study on the two alternative locations for the NAL: the Ota and the CTA zones (see Figure 1).

The final report of the LNEC study (see section 2) was delivered to the MOPTC in January 2008. The overall findings showed that both locations were viable in technical and economical terms. Nevertheless the two location presented different outcomes according to each of the critical factors selected for the comparative assessment. The conclusions pointed out to overall advantages for the CTA zone, given that equal weights were given to the relative importance of each factor.

A preliminary decision of the Government followed, selecting the CTA zone for the NAL, which was confirmed a few months later by a Council of Ministers Resolution, after the completion of a process that included a public consultation, under a Strategic Environmental Assessment of Transportation Investments, in accordance
with the present Portuguese legal framework (transferred from the European Directive 2001/42/CE).

2. The LNEC comparative study
For undertaking the comparative assessment of the two NAL locations, within period of 6 months given for the whole study, the LNEC organized and coordinated a specific interdisciplinary team comprising 40 experts, among researchers (20) and other technical staff from LNEC (5), external advisors (5), as well as national (7) and international (3) contracted consultants in areas not covered by this institute. The foreign participation was ensured by: the “Institute for Transportation Studies” (ITS) of the University of Leeds (methodological support to the cost-benefit appraisal); EUROCONTROL - the “European Organization for the Safety of Air Navigation” (capacity, safety and efficiency of air traffic operations); and the “Central Science Laboratory for Wildlife Ecology & Management” (wildlife ecology and bird strike risk analysis).

A methodological approach was followed for conducting this study, which adopted Strategic Environmental Assessment principles, integrated with a Cost-Benefit Analysis (CBA), as represented in Figure 2.

This approach implied the selection of a limited number of Critical Factors for Decision (FCD) considered as the most relevant and equally important for the strategic assessment. For each one of the seven selected FCD (see Table 1), analysis domains, criteria and qualitative and quantitative indicators were identified, which could lead to the detection of tendencies, opportunities and risks associated to each alternative site for locating the NAL. The integration of these results with the CBA was accomplished through analysis factors for each FCD that could be quantified in monetary terms.

Costs and benefits were calculated using a simplified method (including some externalities) for the life cycle of the project (2017 – 2050), considering intermediate years (2022, 2030 and 2040), the monetary values being expressed as constant prices, referred to year 2008. The overall results of the CBA, by itself, didn’t show a significant difference between the two locations.

The main outcomes which supported the conclusion of this study indicating a preference for the location at the CTA zone compared to Ota zone, were: better conditions for the efficiency of air traffic operations, satisfying all safety requirements, with enhanced capacity for aircraft movements; much lesser earthworks and other engineering interventions for building the platform, presenting lower costs and a higher flexibility for a phased growth; enough available area for future expansions of the landside and for the settlement of a future airport city; better perspectives for economic development and competitiveness; more favourable financial indicators. The main drawbacks of this location were referred, namely, to higher bird strike risks and to several environmental and land use issues (excepting noise impacts), requiring adequate and timely prevention and mitigation measures, which were presented as recommendations.
3. Present situation of the NAL project
As soon as the site location decision was taken, NAER launched a number of studies and field tests for a thorough characterization of the new site (CTA zone) on different aspects. The LNEC was also involved at this phase, providing technical assistance basically for geological, geotechnical, hydrological, hydraulic, and soil contamination issues.

Besides technical and environmental studies, the preparatory work has included financial and legal aspects, which are deemed necessary for launching an international public tender for the NAL construction. It is foreseen that it will start operating by 2017, being built on a DBOT (Design, Built, Operate, and Transfer).

For that purpose a Reference Mater Plan has been developed, incorporating the main features of the new airport, as well as its land accesses. The NAL will be linked both to the conventional and to high speed railway services. A shuttle, running on the high speed line is also foreseen, which will ensure the connection between NAL and the terminal station at Lisbon in approximately 20 minutes. These links imply the existence of a third bridge, crossing the Tagus River in the Lisbon Region, which is already planned within the scope of the Lisbon-Madrid high speed line project.

According to the Master Plan, the airport will occupy an area of 3,400 hectares of a total 7,500 hectares of land which will be liberated after relocation of the current military facilities. A significant part of this whole area will be allocated to environmental protection due to the sensitivity of the site, located near protected areas of the Tagus Estuary. The airfield will comprise two parallel runways (4,000 m long each), separated by 2,180 m, which can comply with independent simultaneous mixed mode operations (space was reserved for future expansions up to 4 runways). The passengers’ terminal will be linked to public transport interchange (train and bus stations) and car parking, as well as to a commercial centre and to several operational support facilities.

The NAL is projected for a capacity of 22 million passengers and 160,000 tons of cargo per year at its opening, reaching 44 million passengers and 400,000 tons in 2050. The investment costs of this project are estimated at 3,300 M Euros. It is qualified by the EC as a Priority Project within the Trans-European Transport Network.

Reference sources:
- Grant-Muller, S.; Asenio, E. – Appraisal methodology for strategic airport planning and development: Research challenges and the case of the New Lisbon Airport; paper to the 12th ATSR World Conference, 2008.
Tell us something about your educational background. How did you end up combining construction management and information technology?
Well, after I obtained my B.Sc. in Mechanical Engineering and a M.Sc. in Business Economics, I discovered more interests and this resulted in a PhD in informatics. What are these interests?
They differ widely but are more connected than you would think at first sight. I am really interested in project and programme management, technology management, information systems design, engineering economics, process based organization, network organization and professional virtual communities.

Of course we are very interested in your experience with the management of (large) infrastructure projects. Could you tell us something about your experiences from a business and scientific perspective?
From a business experience I would relate it to my involvement with IPMA. My involvement with IPMA goes a long way back, since 1980. This is before we started using the internet as a method of communication. The last 29 years I was in the position to experience how new developments like the internet influence our way of thinking about Project Management. I learned a lot and look back on a lot of highlights. If I could mention 3 highlights that would be:
• being the Project Manager of the IPMA World Congress 1998;
• to become initiator and president of the scientific committee of the first joint world Congress organized by IPMA and ICEC (International Cost Engineering Council) in Slovenia, 2006.
• being the Former IPMA vice president for research and international events.
Still, I keep enjoying my involvement with IPMA. Since 1998 I am assessor of the IPMA certification program (A, B, C, and D level) for project managers. Furthermore I am assessor of the IPMA PM Excellence Award and the present chairman of the IPMA Research Management Board.

At the University of Maribor I am currently lecturing the course “Project planning in civil engineering”, a master degree program at the Faculty of Civil Engineering. If I could summarize my experience from both perspectives in one sentence it would be that we have too much “Construction Management” and too less “Project Management” in practice.

What are the fields you focus on in the research initiatives you participate(d) in?
• Governance and management of co-operation and collaboration networks and platforms;
• E-project and programme management,
• Living laboratories,
• Technology management.

Could you relate these results from this research initiatives to social networking? What is the contribution to the development of project management?
Knowledge workers are the main focus of the knowledge economy. The key words of the economy of 21st Century are: co-creation, collaboration, inclusion etc. The classical organization doesn’t have answers on these questions. The answers lies in different modalities of open networked organizations. Social networking and creation of professional virtual communities is a very important component of this concept.

What are the links you see between IPMA and NETLIPSE?
NETLIPSE is related to IPMA Research Management Board as “Special interesting group”. I think there are benefits arising from NETLIPSE, not only for IPMA, but also for the EU and Slovenia. Slovenia could use the results from NETLIPSE to improve effectiveness and efficiency of project performance. Especially because I expect that Slovenia within 5-15 years will focus on the improvement of Slovenian railway infrastructure. The EU could improve project governance and management standards and measures.

Which ambitions should IPMA and NETLIPSE have?
NETLIPSE and IPMA should develop standards for measurement, monitoring and controlling of big EU infrastructure projects - on co-creative and collaborative way.

What are highlights of your career
I spent over 20 years in industry as designer, project manager, manager, CEO and president. I joined to the University of Maribor more than 10 years ago. I am
teaching in courses like project management, value management and technology management at the Faculty of Logistics and Faculty of Civil Engineering (on master degree).

In 1999 I established company INOVA Consulting. The mission of this company is dissemination of new knowledge to industry by the support of the network of international experts.

The Infrastructure Projects Assessment Tool (IPAT)

From the NETLIPSE research of 15 large infrastructure projects in Europe and the comparative analysis of these projects, we formulated main findings, best practises and lessons learned in managing these projects. These experiences can be used in the development of the IPAT, a tool to assess, monitor, and evaluate project organisations of large infrastructure projects and also benchmark project organisations with one another. With the IPAT we have the intention to assess and even predict a project organisation success.

If you would have to assess a project organisation, what questions would you ask? Whether the project’s objectives are discussed and formally agreed upon with the main stakeholders? Whether there is political consent? And what about an (open) relation between the Client and project organisation? All of these questions have an impact on the project organisation, though to a different extend in the different project phases. Based on the best practises and lessons learned of NETLIPSE I, questions are formulated and grouped into twelve main themes to assess the project organisation (see below).

As you can imagine there is no blueprint for a project organisation’s success, but it is possible to assess a project organisation’s main strengths and weaknesses and therefore its likeliness to success. Every project has its own specifics and there might even be differences in relevant questions between different countries working on the same project. However in discussing and scoring the questions in its context, it will be possible to assess a project organisation’s strengths and weaknesses. This can be done for each theme and, eventually, for the overall project. This is useful information for the project organisation itself, but also for governmental bodies or the European Commission/TEN-TEA agency when allocating funds for large infrastructure projects.

For the coming period, we would like to further develop and validate the IPAT with your input and through the assessment of pilot projects. We will assess three pilot projects, in different project phases, to evaluate the questions, scoring methodology and overall outcome of the tool. We would also like to include your experiences in assessing a project organisation. Therefore, we invite you to join the IPAT-workshop during the Network Meeting in Zagreb. After all, you are the ones with the experience of managing large infrastructure projects and the potential users!

Marcel Hertogh and Corrina Klijn

You seem like a very busy person. Still, could you tell us anything about your interests next to your day to day job(s)?

I will borrow the statement from Picasso to answer that question:

“I am always doing what I can’t do, so that I may learn how to do it..."
The Institution of Civil Engineers (ICE) has produced a definitive Best Practice guide for construction clients. Using an expert panel of the Learned Society, chaired by Sue Kershaw with the support of ICE Vice President David Hutchison (Principal Consultant, Parsons Brinckerhoff), the ICE has produced a tangible deliverable that will help guide and inform clients, ICE members, and other professionals.

The role and performance of clients is the single most important factor in determining the success of construction projects and capital works programmes, regardless of their size, complexity or location.

There are many guides on how to be a good project manager but nothing on the market explaining to clients the many ways in which they can positively influence the success of their projects – both during the planning, development, and implementation stages as well as during operation and final decommissioning.

Fortunately there are many examples of good client practice in the UK construction industry as well as many organisations promoting best practice. The purpose of this unique guide is to bring these initiatives together under one banner and to share their outputs across the industry for everyone’s benefit.

Specifically the guide aims to furnish UK construction clients with the information they need to answer the following questions.

- Am I using best practice?
- How can this be assessed?
- How does this lead to project success?

It is a high-level document, providing an overview of the way clients should be approaching the planning, development, implementation, operation and decommissioning of their projects. It is intended primarily for UK clients of infrastructure projects, but is equally applicable to all public and private sector construction clients and their advisors worldwide. It comes endorsed by some of the best practitioners in this field.

The various chapters focus on specific issues that clients need to consider and identify aspects of client performance that will help achieve a successful project outcome. They examine various aspects of clients’ input and provide guidance on measures that have been found to be particularly influential. Sources for referenced publications and further reading are provided in each chapter. Over 200 examples of best practice are provided and built into the aligned assessment tool to provide measures of success as the client matures.

The chapters comprise:

- What makes a successful client?
- Essential stages of a Project
- Developing a delivery strategy
- Establishing the client team
- Procuring the supply team
- Caring for people and the environment
- Keeping everything on track
- Taking responsibility for the end result

Ideally the document should be read in its entirety before any work starts, giving clients an independent overview of best practice before they start working within any pre-established approaches for their organisation or sector. However, clients and others already involved in construction projects will find the guide and its individual chapters serve as useful road maps, regardless of what aspect or stage of a project they are currently in.

The expert panel set up by ICE to produce this guide has consulted widely. It has drawn on existing practice and an excellent source of data collected through one-to-one interviews with industry leaders. It also sent questionnaires to over 40,000 of its members, who between them form a significant sounding board of clients and those who work for clients in construction. A further sounding board of the ‘best in class’ in the industry has provided
invaluable overview input from many perspectives, and the guide has been warmly supported by aligned professional bodies.

It is proposed that the guide will foster a whole suite of sub-documents to supplement the many important areas and practices that are no more than outlined here. The first step in this process is the development of an on-line assessment tool to help clients see where they are in terms of using best practice. Details of this are given below.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Assessment tool selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What makes a successful client</td>
<td>Setting up for Success</td>
</tr>
<tr>
<td>2. Essential stages of a project</td>
<td>Building the Capability to Deliver</td>
</tr>
<tr>
<td>3. Developing a delivery strategy</td>
<td>Monitoring and Managing Results and Outcomes</td>
</tr>
<tr>
<td>4. Establishing the client team</td>
<td></td>
</tr>
<tr>
<td>5. Procuring the supply team</td>
<td></td>
</tr>
<tr>
<td>6. Caring for people and the environment</td>
<td></td>
</tr>
<tr>
<td>7. Keeping everything on track</td>
<td></td>
</tr>
<tr>
<td>8. Taking responsibility for the end result</td>
<td></td>
</tr>
</tbody>
</table>

**Client Best Practice Maturity Assessment Profile Tool**

The Client Best Practice Guide is complimented by an ICE on-line Maturity Assessment Profile Tool, known as ClientMAP. This has been designed to help users assess their readiness and ongoing capability as Clients in establishing and leading major civil engineering projects to successful outcomes.

ClientMAP is designed to help clients who have read this guide go on to assess where they are in terms of using best practice.

The assessment tool is divided into three sections, with each section covering a number of chapters in the guide – as shown in the following table.

The benefits of using ClientMAP are:

- Rapid and accessible self-assessment of the Clients readiness and ongoing capability to lead projects in relation to best-practices, setting the project up for success
- Structured and consistent analysis of Client capabilities that can be monitored for improvements over time and between projects, enabling benchmarking against the best
- Ready identification of strengths and opportunities for improvement that can be incorporated into project development plans, driving continuous improvement

ClientMAP has been designed to be used at all stages of a project’s lifecycle. Used at or before the start of a project it can test the Clients intentions and plans. Once the project is underway it can test the reality of the situation and provide guidance on improvements required.

ClientMAP is a self-assessment questionnaire accessed via the ICE website and is primarily intended to help users challenge their thinking and guide their activities within the project for maximum effect. Whilst the questionnaire is based entirely around best practice guidance found in the Guide, such tools do not replace the personal experience necessary to deliver major projects and nor are they a substitute for seeking sound advice from professionals. However, a ClientMAP assessment does compliment these activities by providing a consistent and structured appraisal of capabilities that may be monitored over time and between projects, contributing to increased Client effectiveness and ultimately to more certainty about project success.

Users will be aware that self-assessments tend to introduce a degree of optimism and bias. To overcome this tendency it is best to focus on specific situations within the project and consider tangible evidence wherever it is available. Independent assessments from competent providers may be used to provide a balanced view and address this risk from time to time.

The self-assessment report characterises Client capability against a scale of five levels of Maturity, consistent with leading methods commonly used by the OGC, Constructing Excellence and other groups. Maturity Levels are typically as shown in the diagram on the next page.

In addition to an overall ‘maturity score’, Client capability is also given a maturity score for each of the three broad aspects discussed above, to help refine and focus user’s development plans. A further level of feedback is provided in the report describing ‘Areas of Strength’ and ‘Opportunities for Improvement’ based on the pattern of answers to the detailed questions within the questionnaire.

Ultimately ClientMAP will be developed to include benchmarking data to allow users to characterise their capability against sector norms, but in the meantime a database of user responses must be built up to accomplish this goal.

The Authors of this Client Guide strongly recommend that readers use the on-line self-assessment tool to assist them in building the best project capability possible. We trust that the tool will help you ‘map the profile’ on your projects, ultimately leading to ever greater successes. This Guide together with the associated best practice assessment tool will help clients to deliver successful projects. This will in turn raise the profile positively of the whole construction sector and create lasting legacies of which we can all be proud.
At the end of October the new NETLIPSE.eu website will be launched. The NETLIPSE website www.netlipse.eu consists of an informative section including project information, announcements and invitations. In addition, the website includes a closed section for members only, which contains among other things the case study reports and minutes of meetings. Furthermore the new website will actively support the Special Interest Groups, by providing an environment for Special Interest Group members only. Document sharing, comments exchange and other functionalities will improve the collaborative working. New functions will include ‘profile-search’, calendar and document sharing. The new website will be an important element in supporting the NETLIPSE network. We invite you to have a look after our new website is launched.

For more information on the NETLIPSE project please see the website www.netlipse.eu, or contact the Programme Director: AT Osborne B.V. Mr. Marcel Hertogh P.O. Box 168 3740 AD Baarn, The Netherlands

Email: info@atosborne.nl Telephone: +31 35 5434343 Fax: +31 35 5434344