

TPM QUARTERLY

**FACULTY OF TECHNOLOGY,
POLICY AND MANAGEMENT**

Partnership agreement between the Faculty of TPM and the University of Nebraska

On 23 September 2008, Theo Toonen, dean of the Faculty of Technology, Policy and Management, signed a partnership agreement with Hesham Ali, dean of the College of Information Science & Technology at the University of Nebraska in Omaha. The main aim of the partnership is to facilitate the exchange of students and researchers, mainly in the field of 'Collaboration Support and Simulation'. The faculties will also work together on an international project to develop a new electronic meeting system (Group Decision Room/Group Support System).

To demonstrate the possibilities of electronic meetings, the 'Memorandum of Understanding' was signed on an interactive whiteboard. The signatures of both deans were directly visible via monitors on both sides of the Atlantic Ocean.



Best paper award for Bent Flyvbjerg

Bent Flyvbjerg from the section Transport Policy and Logistics' Organisation (TLO) has been presented with the Association of European Schools of Planning (AESOP) Best Published Paper Award. The jury chose his paper entitled 'Policy and planning for large-infrastructure projects: problems, causes, cures' as the best of the 21 nominations.

EPA student wins Rector's Prize

The Rector's Prize for internationalisation was granted to MSc student in EPA Nicolo Wojewoda during the Farewell Celebration 2008 last July. This prize is recognition of the nominee's outstanding performance in an international context relating to science and technology, and recognition of the importance of skills in the field of communication within a multicultural environment. The prize also underlines Nicolo's contribution to the TU Delft's mission regarding international cooperation.

SIGMAS Best Paper Award 2008 for TPM

Last June Michiel Renger, Gwendolyn L. Kolfshoten and Gert-Jan de Vreede from the TPM section Systems Engineering (Multi Actor Systems) received the 'SIGMAS Best Paper Award' 2008 at the EOMAS (International Workshop on Enterprise & Organisational Modelling and Simulation) in Montpellier, France for their paper: 'Challenges in Collaborative Modelling: A Literature Review'.

Best Paper Award for Harry Bouwman

Harry Bouman from TPM section Information and Communication Technology (ICT) won the Best Paper Award together with his associates C. López-Nicolás and F. J. Molina-Castillo for his paper entitled 'Examining mobile commerce services adoption by different types of customers'. The prize was awarded during the Cybernetics and Information Technologies, Systems and Applications Conference held in July 2008.

Best poster award

Bram Klievink and Marijn Janssen from the ICT section, Willem Pieterse (University of Twente), Marije Teerling and Erwin Fiel (Telematica institute) were awarded the public's prize for the poster 'Multi-channel Management Strategy and Coordination: The next hurdle in customer-orientation'. This prize was awarded in Montreal, Canada last May on the basis of votes cast by the public during poster presentations relating to current research projects at the 9th Annual International Conference on Digital Government Research.

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SUBSTANTIAL NWO SUBSIDY FOR INNOVATIVE RESEARCH PROPOSALS

TLO researchers earn four prizes

Last July, NWO [the Netherlands Organization for Scientific Research] honoured four research proposals relating to the Sustainable Accessibility of the Randstad programme. All four proposals were designated 'excellent', and the Transport policy and Logistics' Organisation (TLO) section, part of the Faculty of TPM, was closely involved in all of them. NWO had the choice of 25 proposals, and a total of 3.4 million Euros to be allocated. TLO researchers Caspar Chorus and Bert van Wee are proud and delighted. So why did they win the jackpot, and what are their plans for the money?

"We were very surprised that all four proposals were honoured", says Caspar Chorus, lecturer and researcher in the TLO section and involved in three of the four proposals. He immediately adds: "Some of the credit must go to our colleague Eric Molin". Molin is temporarily absent due to health problems, but he was the driving force behind one of the four proposals. Chorus: "The applications for subsidy were made by consortia, groups of researchers from various universities. We spent a lot of time consulting with each other, probably more than the other applicants." Bert van Wee, head of section and lecturer in TLO, continues: "We were already working closely with our partners, but we didn't simply repackage existing programmes. Our proposals are completely new."

Serious questions

The four programmes, two of which are being headed by TLO, ask serious, far-reaching questions about the future accessibility of the Randstad conurbation. The research spans the period until 2030 - 2040. How will motorists react if they have to pay more to use their cars and less to own them? What will happen if oil supplies run out or fuel is rationed? These questions are within the normal scope of the TPM research field. "I think we would have had a lot of explaining to do if none of our proposals had been honoured", says Bert van Wee realistically. "But we worked on a total of seven proposals, so three did not receive subsidy. This is nothing to be ashamed of. You are competing with the

best research groups in the Netherlands. Furthermore, the three that were rejected were all positively assessed, one of them was even designated as excellent."

Smarter choices

The two programmes that TLO is heading are good illustrations of the innovative quality of the proposals. The programme *Synchronizing networks*, of which Eric Molin is the programme leader, is based on the assumption that people move through several networks simultaneously: the traffic network, the public transport network, the IT network. But do they get the best out of these various networks? Caspar Chorus explains: "Better coordination of the infrastructural networks and activities people use would substantially improve the accessibility of an urban area like the Randstad. For example, people take their children to the crèche on their way to work. Crèche staff have to be at their posts by then. Everyone is travelling at roughly the same time, often using the same mode of transport; the car. So what would happen if you designed the crèche as a kind of Park & Ride, and coordinated the opening hours to coincide with the arrival and departure times of the intercity trains? This is what we are going to research at TLO: how much can you expect from people if you change mobility in this way? It does not just include physical

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The value of an Electronic Child Dossier

On 17 September, a debate was held in response to the graduation report of TPM student Ton Monasso. The debate was organised by Capgemini (graduation company) and the 3TU.Centre for Ethics and Technology, in which the TPM philosophy section is one of the three participants. Ilse Oosterlaken reports.

Towards the end of the afternoon, bursts of spontaneous applause can be heard from the floor. Participants in the expert debate on ethics, IT and information exchange in the youth care sector are nodding or mumbling "yes, absolutely". Panel member Paul van Gennip (Helmond municipal authorities) has just explained that their system does not exchange factual information about problem children, it merely issues an alert: another care professional is also dealing with Kevin or Stacey. Experience has shown that this brings professionals from various disciplines into contact with each other. And the system causes no unacceptable breaches of privacy or stigmatisation of families. So is this incredibly simple signalling system really the best solution?

Earlier that afternoon, Professor of Ethics and Technology, Jeroen van den Hoven, had already explained to the audience, government representatives and staff who work in the youth care sector and/or with the Electronic Child Dossier (ECD), that IT systems are not value-neutral. "Never let a random IT worker tell you that version 2.0 of a software package has a suitable solution", he warned them. Using value sensitive design, shared values such as safety (of the child), privacy and autonomy can



become determining factors for the design details of the ECD. For example, who will have access to which data, when, why, and what are the possible consequences? But if the sector does not actively discuss this issue, you might just end up with IT systems that do not reflect the values mentioned above, but which do determine the working processes within the youth care sector.

And there is another way in which existing plans for the ECD are not value-neutral, added Professor of Social Education, Micha de Winter. These plans are based on the 'at risk model', which sets out important predictors at the individual and family levels. For example, if a parent was abused in his or her own youth. However, this encompasses a worldview in which an individual

parent is held exclusively responsible for child abuse, but which says nothing about the context in which the abuse took place. Studies have shown that factors in the neighbourhood (social control, easy access to social amenities, for example) also play a large part. An ECD that does not take this into account implicitly assumes a particular answer to questions like: what constitutes a good upbringing and who is responsible for this?

To return to the floor's seeming approval for a minimalist signalling system. Panel member Joke van Harten-Oudijk (Youth Care Agency, Limburg) decides to set the cat among the pigeons. "Whose dossier is it anyway?", she asks. The children's and the parents', answers Limburg in unison. So they are always asked to verify the information contained in the dossier (very little of which is currently digital). If they do not, this is also noted down. If you do it like this, sharing dossiers is a good thing, she ventures. Jeroen van den Hoven jumps to his feet. Moral autonomy, he says, is one of the basic values in ethics and is respected without question. This working method could also be built into computerised child dossiers; "That's what I call a perfect example of value sensitive design!"

More information, including the full report, is available on www.ethicsandtechnology.eu/expertdebat.

Systems engineering or engineering systems?

Systems Engineering and Policy Analysis. Is this not a paradox? A contradiction in terms? Surely policy analysis is political by definition and has nothing to do with engineering? And applied sciences certainly profess to be apolitical.

Systems Engineering and Policy Analysis (and Management, of course) can be explained in two ways. Systems engineering or engineering systems. The first is about governance, which means being accountable within a system that involves many hands and many actors. Ministerial accountability is a perfect example. In the media, the focus is often put on the relationship between the Minister and Parliament. But in systems engineering, the relationship between the Minister and the civil service is just as important. The deal is: the Minister represents the dynamics and the momentum, the organisation stands for long-term solidity and stability. A Ministry is not simply a toy for the Minister.

Imagine a popular Minister of OCW (Education, Culture and Science). Someone with charisma. Does his own thing. Is a master of politics and publicity. No airs and graces, plenty of style. Spectacle: a public brain scan during the opening of the academic year. Has perfect control of the social agenda. Socialist, but not totally in awe of Wim Kok. Quietly aspires to becoming the Jacques Lang of Dutch politics. He makes long-overdue progress in the area of homo-emancipation. He joins the canal parade on a warm summer's day, gaily waving to the happy crowds. And quite pointedly to the mayor. On the OCGay Boat.

Great politics. But a systems engineering specialist should ask himself how realistic this is. The W has become thoughtlessly gay. Why not an OCW Gay Boat? If frivolity wins from structure in the name, what hope is there for the stability and resilience

of the civil service? It would certainly explain the unpredictability, obscurity and discontinuity of the funding for academic education and research that is currently plaguing the TU Delft.

The University of Amsterdam brain scan showed that the Minister became warmer under the collar thinking about culture, homos and Obama than when science was mentioned. Knowledge of systems engineering has taught us that a Minister who fails to take the civil service seriously will not do himself any favours in the long term. A place at the bottom of the higher education bigwig rankings is a bad omen at most. According to ScienceGuide, in the relative still of the summer 'the OCW top' issued the press with an 'informal warning of forthcoming trouble'. There would not be enough money for one of the core tasks; investment in knowledge. Another signpost for systems engineering. But then again: Ministers come and go. They are where the buck stops. Can set their own priorities. Even by considering something unimportant. Like science.

So how should the knowledge institutes respond to a nano-peek through the keyhole like this. The grumbling mass has wasted credit before. The solution is to focus on engineering

the systems. Americans talk about functional federalism: the management of concrete, substantive policy sectors like technology, mobility, aviation, transport, energy, water, living environment, healthcare, construction, space, living, infrastructure. This is functional systems engineering and policy management, firmly anchored in social issues.

In other words, Systems Engineering, Policy Analysis and Management; systems engineering with a point.

The TU Delft Executive Board wants the university to focus on four themes and streamline the knowledge accordingly: environment, energy, infrastructure and health. To my mind, TPM is doing this with body and soul.



FOR A THESIS ABOUT UNCERTAINTIES:

Rachel Carson *Milieuscriptieprijs* for alumnus Willemijn Oosterwijk

A bronze Rachel Carson medallion, 500 Euros and publication in the professional journal Milieu. Willemijn Oosterwijk (27) could not be more pleased. Last April, she graduated with honours from the Policy Analysis department with a thesis about 'uncertainties relating to implementation of the European Water Framework Directive in the Schelde catchment basin'. Last June, during the National Environment Day, her work was crowned with the Rachel Carson Milieuscriptieprijs, an award for theses on the environment or sustainability.

Willemijn studied Systems Engineering, Policy Analysis and Management, specialising in Energy, Water & Industry. Furthermore, in her fourth year she became the first ever female president of the Curius board. On completing her Bachelor's degree, she decided to study her subject in more depth, and chose a Master's programme specialising in 'water'. A logical choice, she thought: "I have always loved water. I'm a keen sailor, and I see water as something that characterises the Netherlands and the Dutch. Water has largely determined the course of our history and is still influencing our future."

For her final thesis, she joined Arcadis engineering consultancy in Rotterdam, where she looked into a question being asked by the Zeeland Public Works and Water Management Department: Which uncertain factors should be taken into consideration when drawing up a catchment basin management plan for the Schelde? And how can we structure and manage these uncertainties? "Attempts to devise the plan had shown that there was no single clear-cut method for dealing responsibly with the uncertainties it had thrown up."

The reason for asking this question was the European Water Framework Directive, which has been in force since 2000. "The aim of this Directive is to ensure that by 2015,

all European waters will be cleaner and of a higher quality than now. This applies both to the eco system and to the substances it contains, such as nitrates, phosphates and mercury. The problem is that although you can take measures to protect the environment, you cannot always oversee the effects. So many uncertainties about the ecosystem still exist, making it difficult to measure the consequences."

Broad-based research

Willemijn made her research into the uncertainties as broad-based as possible. She interviewed water managers, administrators and special interest groups, compiling an inventory of more than 60 uncertain factors. She then divided them into categories. "On the one hand you have the process-based uncertainties: what will Brussels do, for example? And what are the countries upstream and other parties planning to do? On the other hand, you have the technical uncertainties: what is the effect of a particular measure?"

The interviews came up with several new uncertainties for the Zeeland Public Works and Water Management Department. "The special interest groups turned out to have different uncertainties. For example: large agricultural organisations indicated that they were not quite sure when they were supposed to take action. The Public Works and Water Management Department on the other hand, was under the impression that this had been clearly arranged in the form of a consultative group. As the various parties all see different uncertainties, it is not enough just to analyse one party."

To get a better understanding of the various aspects that play a part when drawing up a catchment basin management plan, Willemijn has devised a conceptual model for the Schelde catchment basin. "This model is based on the three pillars of integral water management: the natural system, the policy system and the social system, comprising users and interested parties in the catchment basin. The model can be used at various scale levels: it can therefore be applied to the sub-catchment basin of the Schelde, but also to the whole of the Netherlands or even Europe."

Willemijn Oosterwijk

The scientific value of Willemijn's thesis is in the way she has combined analysis with managing. "These areas of attention are usually considered separately. I have tried to link an analysis method with a management method. You could call it a marriage between the Policy Analysis section and the Policy, Organisation & Management section*."

Willemijn is now working with Arcadis as a Strategy & Decision-making consultant, where she is often deployed on large-scale technical projects. "The great thing is that I learned how to compile an actor analysis during my training, and I am now being paid to do it", she laughs. "I am also happy to be working with a group of young colleagues, and I like being involved with the technical side of the projects. I am learning how the theory works in practice."

**) editor: this is now the Policy, Organisation, Law & Gaming section.*

Best environmental thesis 2007

The Rachel Carson *Milieuscriptieprijs* is an initiative of the Environmental Professionals Organisation. The award is given to the most outstanding thesis to be written on the subject of the environment and sustainable development. Willemijn won the prize in 2007 from 12 entries because 'her complex analysis is in balance with the complexity of the problem'. The thesis was most in line with the jury's ideal of: 'a thesis that is full of insight and conclusions, but which is also practical in the means used to transform the insight into conclusions.'

TLO researchers earn four prizes

Joint-financier of the programme: the Ministry of Transport, Public Works and Water Management

The research programme Sustainable Accessibility of the Randstad is being jointly funded by three Ministries (Transport, Public Works and Water Management, Housing, Spatial Planning and the Environment and Economic Affairs), together with NWO. The Ministries also participated in assessing the proposals. Hedi Poot is senior knowledge advisor with the initiator, the Ministry of Public Works and Water Management. When asked about the importance of the programme, she replied: "We want to acquire more knowledge about the accessibility of the Randstad in the long term, we need more scientifically trained people and we want to mobilise the knowledge institutes on this subject. We must think long and hard about the trends that will affect accessibility in the long term, and we must do this now. These trends include changes in the composition of the population, in the energy transition, in the climate. The proposals that have been honoured correspond perfectly with questions the Ministry wants answered. Obviously they do not cover every single policy issue, but we have planned a second round for next year. More emphasis will be put on the link between accessibility and climate change, for example. We have devised communication plans to allow researchers and policy officials to consult about their findings. Regular meetings will be held and every sub-programme has a supervisory committee that includes representatives of the Ministries. This will guarantee our close involvement with the research."

mobility, but also the whole IT field. Would motorists make smarter choices if you put public transport information into a GPS car navigation system? Technology can help to synchronise the networks. It sounds abstract, but what we are actually doing is designing networks and predicting the flows within them. An awful lot of calculation goes into this research."

Scenarios for the future

The second sub-programme being headed by TLO is called *The value of recreation*. It will give us better insight into how the population values recreational activities and how this affects mobility. Programme leader Bert van Wee: "We tend to think that recreational requirements are of little societal relevance. But the leisure sector is rapidly becoming a large branch of industry, and the economic implications are massive. It should be receiving much more attention." Van Wee's team will first compile an inventory of the choices people make in their spare time: where do they go, what do they do there, how do they rate it? They will then examine the activity patterns of recreation and how they link in with mobility. The research will be carried out by VU University Amsterdam and Eindhoven University of Technology. Delft will turn the data from these inventories into scenarios for the future: how will recreation patterns be affected if major changes take place? If a steep kilometre tax is introduced, for example, or stringent policy on energy and emissions, whereby people are allocated a (transferable) quota of CO₂ emission rights for travelling. How would people respond to unorthodox measures like these? Would they go to a campsite on the Dutch coast three times a year

rather than Thailand by aeroplane once? What are their opinions on owning a second home? Van Wee: "The answers to these questions can have implications for spatial planning in the Netherlands. In the final phase of the research, a postdoctoral researcher will explore where recreational areas should be constructed for the eventuality that everyone stays in the Netherlands instead of going abroad, and how we should arrange the infrastructure to provide access to these areas."

Hawking output

So this is exciting new research, which will be carried out by still-to-be-appointed PhD students and postdoctoral researchers. The programmes will run for four years, but the TLO section will be 'standing on the barricades' as Van Wee puts it, right from the very start. He explains: "It is essential that the Ministries concerned and the Randstad authorities can make practical use of our findings. We are very keen to translate our research into policy. We shall be hawking our output via papers and at conferences, as well as through formal and informal contact with Ministry representatives." Conversely, the researchers hope to gain inspiration from policy officials.

Caspar Chorus: "This is a normal working method for TPM. In this respect, we are doing nothing spectacular or new. We must also ensure that our scientific results can be exchanged on a wider scale. We devise models and instruments that could be of interest to researchers who have nothing to do with the Randstad. The model work is at the forefront; the Randstad work should be seen as a case study."

Invitation to Conference on Scaling Up in the Healthcare and Education Sectors 27 November 2008

Continuous mergers have caused healthcare institutions and schools to expand in size over the past few decades. Much of this scaling up is the result of policy decisions, made on the assumption that larger organisations operate more efficiently and deliver higher quality. However, many of those involved are asking themselves whether this scaling up has gone too far and is now compromising efficiency, quality and accessibility. The Institute for Public Sector Efficiency Studies at TU Delft is therefore organising a conference to discuss this dilemma.

The following people will speak at the conference:

Prof. M. Meijerink (chairman of the Council for Public Health and Health Care)
Scale and care

Prof. P. Schnabel (director of the Social and Cultural Planning Office)
Small-scale on a large scale or large-scale on a small scale?

Dr M. Smet (senior researcher at the University of Antwerp)
Scale increases in the Flemish education sector

ir. P. Smets (consultant)
Looking back in amazement

Dr M. Mikkers (head of unit for economic analysis at the Dutch Healthcare Authority)
Efficiency benefits of hospital mergers

This will be followed by a panel discussion with a brief introduction by:

S. Slagter (chair of the Secondary Education Council)
J. Schnerr (board member of the General Hospital Partnership)

Dr M. Smet, ir. P. Smets and Dr M. Mikkers will also be joining the panel.

Your chair for the day will be Dr J.L.T. Blank (IPSE Studies, TU Delft)

The conference will be held from 13.00 to 18.00 in the Museum voor Communicatie, Zeestraat 82 in The Hague.

If you are interested in attending, please contact Laura de Groot via telephone number +31 (0)15-2786111 or send an e-mail to l.degroot-charite@tudelft.nl.

Participation is free of charge



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Dean TPM: NWO money increasingly important

Theo Toonen, dean of the Faculty of TPM, considers the NWO subsidy to be a marvellous achievement. He is full of praise for his TLO researchers and adds: "My predecessor Hugo Priemus put a lot of work into developing the Sustainable Accessibility of the Randstad programme. It is largely thanks to him that we now have substantial funds to carry out this type of research. This source of funding is becoming increasingly important to the Faculty. More money is being transferred from the universities to NWO, and research projects honoured by NWO are automatically given a quality mark. This raises their profile, including on the international circuit. In terms of visitations and other assessments, they count as a positive peer review. Furthermore, this type of input financing gives you relatively more freedom to decide on the content of your research. This can be very different with commissioned research. All these aspects compensate for the 'bureaucracy' that many TPM researchers associate with NWO applications. The four proposals that have been honoured prove that an interdisciplinary field like TPM can also score well with NWO."

The four honoured research programmes

- *A super-network* - Eric Molin, TU Delft, in collaboration with TUE and RUN
In 'Synchronizing networks', the researchers will be developing a super-network to coordinate passenger transport and travel with important destinations and patterns of activity. Greater insight into patterns of passenger behaviour will have implications for spatial amenities, mobility and the infrastructure.
- *Recreational traffic now and in the future* - Bert van Wee, TU Delft, in collaboration with TUE and VU. The programme 'The value of recreation' aims to provide more insight into the needs and choices of people travelling for recreational purposes and mobility, now and in the future.
- *Smarter passenger information* - Harry Timmermans, TUE, in collaboration with TU Delft and VU. The 'TRISTAM project' is exploring the way in which passengers use passenger information, such as travel forecasts for congestion. Smart use of IT could improve the accessibility of the Randstad. For example, setting up work stations at home, or linking public transport information to car navigation systems.
- *More sustainable freight transport* - Lori Tavasszy, RUN, in collaboration with TU Delft and VU. The project 'Towards a sustainable multimodal freight transport system for the Randstad' is researching what would be needed to allow freight transport to travel not only on the roads, but also by water and rail, i.e. multimodal. How can we ensure that cities in the Randstad remain accessible despite this steadily growing mode of transport?

'Free rein for market forces in the energy markets'



SUPPORTING THE PROPOSITION

Dr M. (Machiel) Mulder

"In the same way as many other commodities, I think that market forces for electricity and natural gas should be allowed a free rein as far as possible. The market should be allowed to do its work, against a background of government monitoring and regulation. The advantages of market forces are manifold. Competition stimulates producers to work more efficiently and to modify their products in line with the wishes of their customers. Furthermore, decentralised organisation of the economy (in other words, unrestrained market forces) makes it less likely that a high-risk investment project will result in large-scale social damage: when there are large numbers of parties operating on the market, correct and incorrect forecasts of the future will even each other out.

Another point is that a decentralised economy has far fewer decision-making units. So innovation has far greater opportunities than in a central economy, in which the government is the only body with the power to decide where investments can and cannot be made. The idea that it is better to leave high-risk investment to the government is outmoded. A risk does not diminish simply because government is in charge. In general, and this applies to the energy market too, I suppose you could say that free market operation leads to more innovation, lower costs and lower consumer prices.

A common point of criticism is that liberalisation of the energy markets would jeopardise the guarantee of supplies and amenities. After all, we do not only want cheap power; we also want it to be permanently available. Is the market capable of accomplishing this? Can market prices guarantee an adequate supply of natural gas and sufficient electricity? And also: would they be able to respond adequately to geopolitical tension, as we are now seeing with the major gas producers in Russia?

In my opinion, to a large extent the market is in a position to guarantee the reliability we need. Price is an important incentive for investing in power plants and drilling for new gas deposits. Moreover, high prices will encourage all energy consumers (including households and businesses) to be economical and use electricity and gas more efficiently. This is hugely different from anything we have seen in the past: in liberalised energy markets, energy consumers now play a major role in guaranteeing the energy supply.

Obviously government organisations can also guarantee availability. This is how it worked right up until the nineteen-nineties. The government was responsible for a permanent supply of electricity, which it managed to provide partly thanks to a substantial reserve capacity. This capacity was only drawn on every now and then; mainly during periods of peak demand. This practice does not yield much profit and is therefore very expensive. Maintaining permanent supplies is more expensive than increasing the price every now and again, or even undergoing a physical interruption in the supply.

A lower reserve capacity is by no means a disaster. During periods of scarcity prices will obviously peak, a fact that is deemed politically unacceptable. Energy supply is seen as a basic amenity, which should be affordable to all. We have seen prices rise steeply over the past few years, and this is a less attractive aspect from this angle. On the other hand, it is a good investment incentive, which encourages electricity and gas companies to invest in new capacity.

High prices also spur consumers to cut back on their energy consumption. This has been proved in practice. In 2003 for example, there were rumours of an electricity shortage. It had been an exceptionally warm summer and problems cooling water meant that plants were producing less power. Prices rose sharply, but there was also a response in terms of demand: large-scale electricity consumers, particularly in industry, stopped production and sold all the electricity they had bought under contract on the market. Problem solved! The same happened in England with natural gas. The gradual depletion of the British gas deposits lead to a drop in gas production. The following cold winter saw prices soar. But a crisis was averted because consumers adapted their behaviour. And afterwards, huge investments were made, including in facilities for importing and storing gas. So the market is perfectly capable of guaranteeing an efficient energy supply!

However, this does not mean that there is no place for government: on the contrary! The market cannot produce optimum results without help; it needs the government to generate free market operations and to be responsible for monitoring. In the Netherlands, the Office of Energy Regulation is responsible for monitoring in its capacity as part of the Netherlands Competition Authority. This Office regulates matters including the access of market parties to the transport infrastructure and ensures that network owners act without prejudice. Dominant positions are dealt with, so that the market can be allowed to operate freely. A good working relationship between market and government will create an efficient energy market."

Dr Machiel Mulder is Economics Expert with the Office of Energy Regulation, which operates as part of the Netherlands Competition Authority. He specialises in market forces, regulation, energy markets and environmental policy.



OPPOSING THE PROPOSITION

Dr. A.F. (Aad) Correljé

"A state-driven energy sector would be going too far, but I do not think that the market in the energy sector should be allowed to operate under a minimum of conditions. It is a highly complex system, which means that the operation of market forces will only become profitable if the government keeps a tight hold on the reins. The government must batten down the hatches firmly and take on a managerial role to steer all parties concerned.

You should let the market do its work, assuming the market is in a position to do so. If market imperfections and market failure are to be avoided, the market structure and the goods it is providing must both be suitable. To my mind, the image created during the past twenty years of how the market in the energy sector has developed is concealing several fundamental problems. For example, the structures and effects on the supply and demand side could never satisfy the conditions for a free market system. Take the supply structure for natural oil and gas, for example. This is controlled by a small group of mainly foreign producers, whose objectives in no way comply with the market model: to make a profit on certain commodities and to invest in production capacity.

Strategic and national economic considerations and political motives often dominate. This interrupts the supply side of the market. But convoluted market information about production and investment further complicates the functioning of the market. Investment plans for oil, gas and electricity have to be worked out far in advance. A poor information supply is a crucial problem.

You also see problems on the consumer side. Energy consumers do not respond strongly to fluctuations in the price of energy in the short term. Energy consumption depends on the installations and equipment people have in their homes. This makes it difficult to bring about a change in energy consumption. The equipment and devices are already there and so they have to be used. Another factor that plays a role is the lack of transparency. Consumers often do not know how much energy they use. The bill comes at the end of the year, making it difficult to make structural changes to consumption. A reaction sometimes follows in the long term. People will start buying energy-efficient household equipment. But little is known about when and how people do this. The assumption of a flexible market whereby supply responds to demand and vice versa is therefore incorrect.

Alongside the problems sketched above, another factor is that some of the energy markets and infrastructure have a stronger public character than is generally presumed. We need a system that is able to cope with uncertainties and that can respond adequately to all eventualities. However, it is by no means certain that the market is capable of this.

So the main question is how much infrastructure do we need? Market parties see this as expenditure, and want to keep the costs as low as possible. Investing in infrastructure is out of the question. However, I think we should construct an excess of infrastructure, so that this aspect will never let us down. But is this what the market would do? No, not unless they knew beforehand how much the investment would yield. If not, extra capacity will not be created. This will lead to scarcity in the supply of energy and ultimately, to high prices.

As long as prices remain low and we have over-capacity, as we did in the nineteen-nineties, the market will appear to be operating well and everything will be fine. But prices have been rising over the past few years. The transport sector and businesses such as horticulture and consumers in general, do not accept imperfect market operations. This leads to price rises, higher peaks and more uncertainty. Logically, they pass the buck back to the government. Ultimately, the energy supply will always be a public matter.

The environment forms another external aspect. You cannot expect the market to invest in the environment of its own accord. Greenhouse gases and health effects play no part when setting prices. This demonstrates the need for a government that can clamp down where necessary. If government fails to make decisions, like with CO₂ levies and the emission quota, uncertainty will reign. And as a result, the market will not function as it should."

Dr Aad Correljé is energy expert and senior lecturer in Economics and Infrastructures with TPM. He is also attached to the Clingendael International Energy Programme.

continuation of page 1

News in brief

More new students

The start of the new academic year saw a huge increase in the number of new students in the Faculty of TPM. The number of bachelor students has increased from 120 last year to a staggering 184 this year. The Master's programmes in MoT and EPA have 34 and 26 students respectively, and number of students taking the follow-on from the Bachelor's programme, the Master's programme in SEPAM, has increased from 40 to 55.

Arachnion ten years on

Arachnion, the TPM faculty's alumni association, celebrates its tenth anniversary this year. It is organising a special meeting on Friday, November 28, to mark the occasion. All TPM alumni are invited. For further details, see www.arachnion.tudelft.nl.

Curius secures first place in Battle of Concepts

Curius has won 2,000 Euros in the Battle of Concepts. This formula has been around for a little more than a year. Students and graduates up to the age of 30 devise concepts for so-called 'Battles', which businesses publish on the site www.battleofconcepts.nl. The best 20 entries win prize money varying from 1,800 to 60 Euros. However, for the very first time, a prize was given to a student association. The association with the most top-20 entries in the ABP pension fund battle stood to win 4,000 Euros. As Curius and the Intermate student association from Eindhoven both had two concepts in the top-20, the prize money was split. Alongside the prize money, Curius also received a nice bonus. Every Curius member who gets into the top-20 before 31 December will earn another 50 Euros for Curius.

Emerald Literati Network Award for Marijn Janssen

Marijn Janssen from the ICT section, together with Anton Joha and Vishanth Weerakkoday, has been presented with the Highly Commended Award by the Emerald Literati Network. Their paper entitled 'Exploring relationships for shared service arrangements in local government', was selected as the best by the editors of the journal *Transforming Government: People, Process and Policy*.

Prize for best TU thesis goes to SEPAM student

The Batavian Society for Experimental Philosophy has awarded Maarten Kroesen the prize for the best TU thesis for 2007. The title of the thesis concerned is 'Noise annoyance and Schiphol'.

1000th TPM graduate

Last June Hedwig Vollers' graduated. The ceremony was more festive than usual as she was the 1000th student to graduate from the Faculty of TPM. The title of her thesis was: 'Registration to Aid Patient Safety in the Netherlands'. Graduation supervisor: Prof. W.A.H. Thissen (Policy Analysis section).

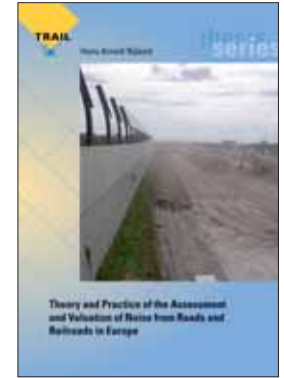
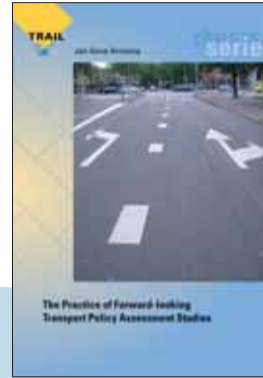
Appointment of Wim Veen

As of 15 May 2008, Professor Wim Veen of the EduTech section has been appointed as a member of the Supervisory Board of TELEAC/NOT. The Board is chaired by Wim Deetman. He has also been appointed to the Council of Experts van Stichting Kennisland [Kennisland], an organisation that focuses on digitalising and marketing audiovisual material from public broadcasting services.

Start of TPM IT Multimedia cases project

Last June, the Faculty of TPM officially launched the 'Multimedia cases' project. This project aims to deploy modern online interactive forms and use 'rich media' to create an environment in which students, as young professionals, can learn independently. It will make use of new IT possibilities for flexible education. Information will be made available for various subjects with various learning aims by means of IT. Highly informative teaching cases based on current research data are being produced as part of the project, including *Bos en Lommerplein* and *Mainport Rotterdam*. Education will also be made accessible in the fields of policy analysis, presentation skills and entrepreneurship.

Dissertations



JOHAN HENDRIK VAN MOSSELE, 'The purchasing of maintenance service delivery in the Dutch social housing sector; Optimising: commodity strategies for delivering maintenance services to tenants', Delft, June 2008

If housing corporations aspire to tenant-friendly maintenance, their strategic policy must give consideration to tenant preferences in the way the service is delivered, including when this is provided by external parties. Insight is needed into the aspects tenants consider important in terms of maintenance to their house, and this should provide starting points for tenant-based purchasing policy. These are the key issues in this research into the purchasing of maintenance service in the Dutch social housing sector. Purchasing policy must derive from the policy of the housing corporation as a whole. The composition of the purchasing team plays an important part in optimising the purchasing process. Service delivery to tenants can be improved by planning and carrying out the various maintenance services during a single period. Tenant satisfaction is largely determined by the maintenance of central heating systems, water installations and hinges and locks on windows and outside doors. This directly meets the safety and security needs of the tenants. Then there are the maintenance services that are clearly visible to tenants. To the tenants, the most important aspect of service delivery is the result of maintenance, followed by the competence of the workmen and their ability to complete the work in one go without unnecessary extra work. Keeping to agreements and making information and complaints procedures accessible are another essential element of tenant satisfaction in relating to maintenance.

JAN ANNE ANNEMA, 'The practice of forward looking transport policy assessment studies', Delft, September 2008

New railways? Extra roads? Pricing policies to reduce environmental harmful transport emissions? Politicians face tough choices. What are the costs of these proposals? Will the plan result in the expected impacts? What are the risks of a plan? Who wins, who loses? This thesis is about the practice of helping public decision-making by answering these kinds of questions. Four cases of policy-related ex ante evaluations are evaluated. Ex ante evaluation refers to forward-looking assessment of the likely future effects of new policies of proposals. The assessment methodologies used in these four cases are not unique, and are not invented or improved in this thesis. Scientific literature pays relatively much attention to transport policy impact modelling and methodologies for valuing policy impacts. Examples of these valuation methodologies are cost-benefit analysis, multi-criteria analysis and combinations of those two. Less is written about the practice of ex ante transport evaluation.

This aim of this thesis is to fill this scientific gap by describing and analysing the practice of policy-related ex ante evaluation in transport, based on experiences of the author. The four cases in this thesis show the importance of being clear about choices, assumptions and uncertainties. Without clarity, ex ante evaluations will become unused 'black boxes', or they may lead to wrong policy decisions. The cases show a different approach of dealing with future uncertainty.

The Dutch government has stated the importance of testing policies and investment plans in different possible futures. Testing evaluates the future robustness of the impacts of a plan, giving policy-makers insight into the uncertainty related to ex ante estimates, instead of giving a false feeling of certainty as may have happened in two of the four cases, in which only one future was used.

LOTTE ASVELD, 'Respect for Autonomy and Technological Risks', Delft, Juni 2008

Technological developments can undermine the autonomy of the individual. Autonomy is one's ability to make and act upon decisions according to one's own moral framework. Respect for autonomy dictates that risks should not be imposed on the individual without her consent. Technological developments can bring about risks, which often confront the individual in ways beyond individual control. This research deals with the question: How should autonomy be respected in the context of technological risks? It is argued in this thesis that respect for autonomy requires amending current decision procedures on the acceptability of risks. These amendments should be based on a specific, original concept of autonomy; narrative autonomy. Narrative self-understanding forms the core of this concept of autonomy. Respect for narrative autonomy requires that anyone who is concerned about risks associated with a technological development, is allowed to influence the decision regarding the acceptability of those risks, provided that the arguments put forward are compatible with specific constraints. Why this is an important condition for decision procedures on risk and how this recommendation can be implemented is illustrated with case-studies on public debates concerning biotechnology, mobile phone technology and vaccination.

HANS ARNOLD NIJLAND, 'Theory and Practice of the Assessment and Valuation of Noise from Roads and Railroads in Europe', September 2008, Delft

Noise exposure may have adverse health effects. This research shows that in a given situation the outcome of the noise calculations may differ between different European countries, when applying their national calculation methods. This is one of the reasons why good quality internationally comparable noise data are scarce. Harmonisation of calculation methods, as the European Commission is aiming at, is therefore an important issue. The research further shows that monetisation of the impacts of road and railroad noise mainly occurs in North Western Europe. This monetisation is often obligatory in the case of major national or European infrastructural projects. The only noise impact monetised is usually annoyance in the residential context. To attach the right price to noise, other impacts in other contexts should be monetised as well. Noise policy is usually primarily aimed at making the source (e.g. traffic) less noisy. The research shows that the benefits of the application of a number of so-called source measures in the Netherlands would clearly surpass the costs. A major obstacle for implementing the noise abatement measures is the problem that costs will be carried by others than those who will be the beneficiaries. The solution for this will be far more a political challenge than a scientific one.

Professor Profile

NAME

Cees van Beers

POSITION

Professor Management of Technological Innovations. Appointed as of 1 September 2008.

Career in a nutshell

"In 1991, I graduated from the Faculty of Economics at VU University Amsterdam. During my dissertation period, I saw myself working in the business sector or for a government organisation, but by the time I'd finished, I knew it was a career in science that I wanted. But if anyone had told me that I (a quantitative economist) would end up as a professor at TU Delft, I would have had them locked up. After all, unlike at the Massachusetts Institute of Technology in the United States, very little research into the field of economics and management was being carried out in Delft at that time." "After working in jobs at the economic institute of Leiden University and the Institute for Research into Government Publications, in 1999 I came to Delft as a lecturer and later associate professor with the Economics of Innovation section. Since 1 September 2008, I have been Professor Management of Technological Innovations."

Ambitions

"I always aspired to being a professor. If you are interested in science and you work at a university, it is almost your duty to want to be a professor. Of course there is no guarantee that you will, and I was perfectly happy in my old job as associate professor. But once I knew there was a chance of this specific chair, well..."

"There are two reasons why I think this is a special chair, and why I am going to make the most of it. The first reason relates to the subject matter, which covers strategy and entrepreneurship in businesses operating in the high technology field. I trained as an economist, and these are amazingly interesting subjects to analyse from the economic perspective. The second reason is that this chair fulfils a vital role in terms of the education in TPM. Education in Management of Technological Innovations is an important master's programme. Many of our students are later appointed to management positions within so-called high-tech businesses. We equip them with management skills, such as learning how to think strategically and make strategic decisions. Strategy in high-tech businesses is very different from strategy in a large-scale bakery, for instance."

The man behind the prof

"I am 48 years old, unmarried but living with my partner on the edge of the dunes in The Hague. I love jogging, hiking in the mountains and skiing, although I don't go skiing every year nowadays. I read a lot: professional publications and German and Russian literature. I read German books in German, but I can't quite manage Russian books in

Russian, ha ha. I also like going to the cinema, preferably on a warm Sunday afternoon when it's nice and quiet."

Best and worst character traits

"I can communicate clearly and I am not lazy, except on holiday. If other people were asked about me, I think they would describe me as someone who gets things off the ground. Our PhD programme, for example, which Scott Cunningham and I put a great deal of effort into three years ago at the request of the then-dean. To my mind, PhD policy is a very important aspect of the faculty. In the olden days, a student was awarded a PhD, given a gift book and told 'goodbye, see you in four years'. I've seen many a PhD candidate get stranded or bow down under the pressure and that's not good for anyone. Not for the PhD student, and not for the faculty either."

"One of my less attractive character traits is that I sometimes find it difficult to be patient or understanding with people I consider to be slow on the uptake or who appear shallow-minded. They tend to make me grouchy. It's the same when students don't do as well as I had expected. But the opposite is also true; I can be truly pleased if someone does better than I had thought."

Who has inspired you?

"Two men. My grandfather, who was director of a concrete goods factory. He always took a straightforward and uninvolved, almost scientific, approach to practical operating problems. Being able to contemplate things from a distance is essential in the scientific field. The second man is Professor Hans Linnemann, who supervised my dissertation. Particularly because of his applied science-based approach to analysing economic and social problems."

Which subjects would you like to put on the political agenda?

"Stimulating sustainable innovations, to which the Cabinet pays far too little attention, despite the best efforts of the Innovation Platform. Also eliminating non-sustainable energy policy, such as regulatory energy tax. There are no incentives for businesses to invest in sustainability, in fact quite the opposite."

Favourites

"NRC columnist Heldring. He is not as pretentious as many other newspaper columnists. I don't watch much television, but when I do, I watch comedy series for a bit of light relief. I am particularly fond of series such as The Blackadder with Rowan Atkinson and Cheers."

Best moment in my career

"In 1998, when I spent a period carrying out research in Australia at the University of Adelaide. I had a great time and I still have professional contact with some of the people I met there. In 1997, when I had an article published in the international economic journal *Kyklos*. That article is still quoted, even today. And then of course, there have been countless interesting lectures. The Economics of Innovation in the master's programme in EPA is a good example, where I discussed and analysed scientific articles with the students. That was always one of my favourites."



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Deze krant is ook verkrijgbaar in het Nederlands. Een los exemplaar kunt u telefonisch of via e-mail bestellen bij de faculteit

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Curius



Here we are again! Another new year for Curius. That means a new board, with a new programme packed with fantastic days out, big companies and a lot of fun. We have got through the first few weeks with all the activities for first-year students, but there is still plenty more to do during this first period. Another TB Café has been planned and all minors students have been promised a delicious BBQ. And last but not least... Curius is going live on air!

We had already been warned last year that a lot of first-year students had enrolled for Systems Engineering, Policy Analysis and Management, so we moved the Introduction Weekend for First-year Students to another, larger venue. As usual, this turned into a crash course in Curius, which later yielded rich rewards during the Central Introduction at the Introduction Week (or OWee). Strong and unforgettable ties were forged between the first-year students!

During the first weeks of lectures, the StarCo added a little extra by organising all kinds of activities for first-year students. In the very first week, a staggering 400 eggs were consumed with bacon at the first year breakfast, and serious amounts of popcorn were popped during the MovieNight. The StarCo is now working hard organising the first Lunchtime Lecture.

And to crown it all, there will be a course in speed-reading, which is always handy for exams!

To encourage social contact, a special drinks evening was organised during week two. Everyone was invited to the faculty to join each other for a drink. But this is not the end of it! At the end of last year, a start was made on a series of drinks evenings in the TB Café. There is not yet a real building, but it's still great fun. So this year we intend to carry on where we left off. The TB Café will be a regular feature on the programme and everyone is welcome!

This year, Curius is trying to introduce students to the media. The first steps have already been taken. Fifteen members of Curius appeared in the audience at the Pauw & Witteman talk show, and a large group is present in the Dutch contingent at NL Test. We are hoping to arrange many more trips like these. So keep an eye on the posters.

Although our year has only just started, the coffee machine at the Hok is already working overtime. Whether you are a first-year bachelor's student, a new master's student, a student who fancies a nice free cup of coffee or just someone wanting a chat, a warm welcome awaits, all year round!



The 16th Board of SVTB Curius

TPM's educational programmes

- BSc Systems Engineering, Policy Analysis and Management ('Technische Bestuurskunde', TB)
- MSc Systems Engineering, Policy Analysis and Management (SEPAM)
- MSc Management of Technology (MoT)
- MSc Engineering and Policy Analysis (EPA)
- MSc Transport, Infrastructure and Logistics (TIL)
(in cooperation with the Faculty of Civil Engineering & Geosciences and the Faculty of Mechanical, Maritime and Materials Engineering)
- MSc Information Architecture (IA)
(in cooperation with the Faculty of Electrical Engineering, Applied Mathematics and Computer Science)
- MSc Geomatics
(in cooperation with the Faculty of Civil Engineering & Geosciences and the Faculty of Aerospace Engineering)

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Did you thoroughly read the available information and are you considering enrollment in a TPM-programme? Are you not sure your educational background is sufficient?

Then please contact one of our study advisors:

Drs. Marja Brand (m.j.c.c.brand@tudelft.nl)
Ir. Daniël Holt (d.holt@tudelft.nl)

ASK TPM

"There should be a clearer distinction between the Bachelor's and Master's phase of university studies. This would motivate students to think harder about the second half of their training." These are the words of Minister of Education, Ronald Plasterk, spoken during the opening of the academic year at the University of Amsterdam on 1 September. "At present, there is a 'soft switch'. The transition from one programme to the next is barely noticeable. I want students to take a conscious step and think twice about their future. However, it is not my intention to drive students away from university after the first three years." But Plasterk obviously wants the Bachelor's phase to become a clearly defined entity. How does TPM view this development?

We asked Dr Els van Daalen, director of education in the Faculty of TPM, and Dr Ivo Bouwmans, programme manager of the Bachelor's programme in Systems Engineering, Policy Analysis and Management.

"Plasterk advocates a 'hard switch' and we are jumping into line: the decision to introduce a 'hard switch' has already been taken in Delft, starting with the student intake of 2007. They will only be admitted to a Master's programme once they have successfully completed a Bachelor's degree.

Now, students who still have to pass a few subjects for their Bachelor's degree may also take subjects for a Master's programme which counts as a 'general Master's' for that Bachelor's programme. The advantage to these students is that they do not fall behind during the transition from Bachelor's to Master's programme. In order to prevent students from lagging behind after the 'hard switch' was introduced, TU Delft has decided to create two starting dates for Master's programmes; September and February. We will also review the TP-Bachelor's curriculum to see where we can do away with unnecessary obstacles and improve the transitions.

Over the course of time, the TPM Bachelor's programme in Systems Engineering, Policy Analysis and Management has taken

on a completely different orientation (focusing on analysis) from that of the Master's programme (focusing on design). The teaching forms and our expectations of the students are also different. This can be seen in the aim of the Bachelor's project, which is now starting to resemble a final Bachelor's graduation project.

TPM also offers Master's programmes that are not general Master's, namely Engineering and Policy Analysis (EPA) and Management of Technology (MoT). These programmes are already part of a 'hard switch'. All students start the programme at the same time. They feel like a real team and are willing to learn from each other. They progress more swiftly and gain a better understanding of the cohesion in the programme because they take the subjects in the correct order.

Another advantage of the 'hard switch' is that it shows students the importance of a good study and progress plan early on. We hope that this will have a positive effect on their attitude to studying during the initial years.

We are noticing that students are no longer automatically opting for a general Master's programme, but are taking more time to acquaint themselves with what is available. Very few students leave and go into employment immediately after the Bachelor's programme. Demand from the job market

is an important factor here, and is perhaps postponing this development. Students regularly choose Master's programmes other than the general Master's these days, but our students are so happy in Delft that they rarely opt for a Master's programme at another university. This too may be a long-term development. We also expect increasingly more students to start looking across the international borders. On the one hand this means that the faculty will lose more students on completing their Bachelor's degree, but on the other hand TPM can respond by making Master's programmes more attractive to students with other forms of prior education. We are offering new transfer courses to cater to this development."