

TNO Annual Review 2008







Characterising 2008:

Changing of the guard

Ambition for 2009:

In times of crisis, make the difference in innovation

TNO Annual Review 2008

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In matters of interpretation the more extensive Dutch version of the Annual Review will prevail.

(in EUR x million)

	2008	2007	2006
TNO (TNO Organisation including group companies)			
Government funding turnover	194.7	196.4	195.8
Market turnover	405.0	382.5	373.8
Turnover	599.7	578.9	569.6
Net turnover 1)	504.6	501.9	497.8
Added value 2)	407.8	401.8	390.7
Operating result before impairment of (in)tangible fixed assets	-5.3	8.1	10.5
Impairment of tangible fixed assets	-5.3	-	-
Operating result	-10.6	8.1	10.5
Result	-5.7	12.3	13.1
Result as % of the market turnover	-1.4%	3.2%	3.5%
Number of employees (effective average)	4,572	4,634	4,600
Number of employees (effective average at the end of the year)	4,580	4,658	4,590
Net turnover per employee (effective average) in thousands of euros	110.4	108.3	108.2
Added value per employee (effective average) in thousands of euros	89.2	86,7	84,9
Personnel costs per employee (effective average) in thousands of euros	82.8	78,2	75,8
Personnel expenses excluding additional pension payments	378.6	362.5	348.9
Operating capital	31.5	33.3	47.5
Equity	201.1	206.7	194.1
Cash flow 3)	53.9	56.5	62.2
Investments TNO Organisation	38.3	53.9	40.2
Investments group companies	19.7	6.5	7.5
Current ratio	1.19	1.22	1.28
Solvency	0.44	0.48	0.44

 $^{1)}$ Net turnover = turnover - direct project costs

 $^{2)}\ \mbox{Added value}$ = net turnover + other operating income - other operating costs

³⁾ Cash flow = result + depreciations + disinvestments + mutation of equalization account for investment funds

	2008	2007	2006
TNO Organisation			
Government funding turnover	194.7	196.4	195.8
Market turnover	316.9	307.7	303.9
Turnover	511.6	504.1	499.7
Operating result before impairment of (in)tangible fixed assets	-6.0	5.0	6.6
Impairment of tangible fixed assets	-4.2	-	-
Operating result	-10.2	5.0	6.6
Result (excluding result for group companies)	-6.6	9.1	9.4
Operating result TNO core areas	1.7	7.5	15.7
Result TNO core areas	4.2	10.2	17.7
Number of employees (effective average)	3,833	4,003	4,027
Number of employees (effective average at the end of the year)	3,813	4,033	4,024
Average term of work in progress and debtors in months (TNO core areas)	2.1	2.0	2.2
Solvency	0.47	0.51	0.47
Group companies			
Turnover	92.8	79.7	73.7
Operating result	-0.4	3.1	3.9
Result	0.9	3.2	3.6

Number of employees (effective average)739631573Number of employees (effective average at the end of the year)767625566

Ms. J.M. Leemhuis-Stout, M.Sc., chairman	Since 01-03-2001	Chairman of Cedris, the sectoral organisation for companies engaged in sheltered
		employment and labour integration, various executive and supervisory positions.
Ms. prof. M.C.E. van Dam-Mieras, PhD.	Since 01-05-2000	Vice-Chancellor of the University of Leiden
		Various executive and supervisory positions, including Advisory Board member of
		Deltares, Supervisory Board member of Unilever N.V., Supervisory Board member of
		Akzo Nobel Nederland BV.
Ms. prof. J.M. Bensing, PhD.	Since 01-09-2008	Honorary Research Fellow of the Netherlands Institute for Health Services Research
		(NIVEL), Professor of Clinical and Health Psychology at Utrecht University. Various executive
		and supervisory positions, including member of the Health Council; member of the
		Health Sciences departmental board of the Netherlands Organisation for Scientific
		Research (NWO); member of the NWO Quality of Care programme committee; Vice-
		Chairman of the Dutch Healthcare Research (ZON) programme committee; Chairman of the
		GGZ (mental healthcare) (ZON) working group; member of the Scientific Council for Social
		Oncological Research of the Dutch Cancer Society (KWF); member of the Social Sciences
		Council of the Royal Netherlands Academy of Arts and Sciences (KNAW).
H.W. Broeders	Since 01-07-2006	Executive Committee member of Capgemini S.A., Chairman of ICT-Office, various executive
		and supervisory positions.
E. Veltkamp, PhD.	Since 01-05-2002	Former Senior Vice-President of Research and Development at Unilever NV., various
		executive positions and non-executive directorships.
Prof. L. Koopmans, PhD.	Since 01-02-1999	Emeritus Professor of the University of Groningen, Non-executive Director of Eureko
		Achmea, NUON and other companies, Chairman of the Board of Supervisory Directors of
		Rabobank Nederland.
G-J. Kramer, M.Sc.	Until 01-09-2008	Former President of the Management Board of Fugro, various executive positions and
		non-executive directorships inc. Chairman of the Supervisory Board of Delft University of
		Technology.
J.G.F. Veldhuis, M.A.	Until 01-09-2008	Former Chairman of the Board of Governors of Utrecht University, various executive
		positions and non-executive directorships.
H.P. Drop, M.A., secretary	Until 01-09-2008	
S.J. Vlaar, M.A., secretary	Since 01-09-2008	

J.H.J. Mengelers, M.Sc., chairman	Since 01-04-2008	Various executive and supervisory positions, including: Executive Board member of
		Joanneum Research Forschungsgesellschaft mbH, Board member of EARTO (treasurer),
		Advisory Board member of NITG, Innovation Council member (Ministry of V&W), Supervisor
		Board member of Rabobank Eindhoven-Veldhoven, Member of the Eindhoven
		Manufacturers' community, Executive Committee member of Point-One, Board member of
		the STT Netherlands Study Centre for Technology Trends.
Ms. C.M. Colijn-Hooymans, PhD.	Since 01-10-2002	Various executive and supervisory positions, including: Deputy Crown-appointed member
		of the Social Economic Council (SER), Supervisory Board member of Royal KPN N.V.,
		Non-executive Director of Rabobank Vallei-en-Rijn, Member of the Advisory Council for
		Science and Technology (AWT) of the Ministries of OCW and EZ, Supervisory Board member
		of Radboud University Nijmegen.
VAdm. J.W. Kelder	Since 01-01-2009	Various executive and supervisory positions, including: Board member of the Netherlands
		Industries for Defence and Security (NIDV), Board member of the Dutch Maritime Network
		Foundation (NML), Non-executive Director of NMi (Holland Metrology), Non-executive
		Director of the Hague Centre for Strategic Studies (HCSS), Board member of Innovative
		Main Port Alliance (SIM), Board member of Netherlands house for Education and Research
		(Neth-ER), Chairman of the Board of Maritime Knowledge Centre Foundation (MKC).

VAdm. J.W. Kelder, chairman	Since 01-01-2009	TNO Board of Management member charged with the Defence portfolio.
J. Sikkel, M.A, deputy chairman	Since 01-03-2008	Ministry of Defence, Deputy Secretary-General: J. Sikkel, M.A.
J.G. Siccama, PhD.	Since 01-07-2008	Ministry of Defence, Knowledge and Strategy Policy Advisor (AKSB).
Major General Marine Corps	Since 01-11-2008	Ministry of Defence, Director of Operational Policy, Requirements and Planning.
H.A. van der Til		
A.W. Miedema, M.A.	Since 01-07-2008	Ministry of Defence, Director of Personnel Policy.
Rear Admiral J.W. Ort	Since 01-04-2007	Ministry of Defence, Director of Information and Organisation.
P.J. Keuning, M.Sc.	Since 01-04-2006	Ministry of Defence, Sub-department Head of Defence Research & Development.
L. le Duc, M.A.	Since 01-08-2004	Ministry of OC&W, Head of Science, OWB Board.
Major General (retired)	Since 01-04-2006	Chairman of the Strategic Advisory Council.
G.J.C. Roozendaal, PhD.		
Major General Marine Corps (retired)	Since 01-12-2006	
F.E. van Kappen		
Ms. A. van Rijn, M.Sc., PhD., expert	Since 01-05-2008	Ministry of the Interior and Kingdom Relations, Strategy Director of the Directorate-Genera
		of Security.
J.H.J. Mengelers, M.Sc., expert	Since 01-03-2008	TNO Chairman of the TNO Board of Management.
J.V. Elsendoorn, M.Sc., expert	Since 01-09-2008	TNO Defence, Security and Safety, Managing Director.
H.J. Vink, M.A., expert	Since 01-11-2008	TNO Defence, Security and Safety, Director of Operations.
E.F.W. Bleeker, secretary	Since 01-10-2004	TNO Defence, Security and Safety.

In 2008 the total consolidated turnover rose by 21 million euros to 600 million euros (see graph 1). A third of this figure – 195 million euros – has been made available via government funding to develop new knowledge. Just 27 million euros is available for 'knowledge for cross-theme capacity', or knowledge development that is not directly linked to demand from society or the ministries. The distribution of knowledge development via demand-driven programmes is shown in graph 2.

The market turnover of 405 million euros comprises 318 million euros from contract research in the five core areas: this knowledge application is based on the distinctive position that the core areas have managed to build up within the twelve themes via the demand-driven research referred to earlier (the knowledge development). Graph 3 shows the distribution of market turnover according to Dutch industry (42 per cent), International (35 per cent) and Dutch government (23 per cent).

The other 93 million euros of market turnover is commercialisation of knowledge by some 55 companies under TNO Companies B.V. This is the consolidated turnover of the group companies in which TNO has a holding of 50 per cent or more. There are also 29 companies that have developed so strongly that TNO now has only a minority holding. This commercialisation of knowledge receives no government funding and is therefore incorporated in a separate private limited company structure. These companies tend to have emerged as 'spin-offs' or 'spin-outs' of activities within the five core areas.

The total international turnover of the five core areas and TNO Companies B.V. rose to 140 million euros in 2008.



To retain a strong knowledge economy is crucial to the Netherlands. Everyone agrees that the ability of the Netherlands to compete worldwide depends on specialised knowledge development, crisis or no crisis. Now that there is a crisis the Netherlands needs all hands on deck in order to ensure it does not get left behind.

TNO sees its task as making a significant contribution to achieving this. The stipulation that TNO's task is to develop applied scientific and engineering knowledge for the common good as stated in article 4 of the TNO Act still applies:

'The aim of the Organisation is to help ensure that engineering and scientific research is geared to application and thereby to make related social-scientific and other application-geared research serviceable for the common good and all the vested interests therein.'

The Netherlands is currently undergoing difficult times, a period that is reminiscent in many respects of the early 1930s when TNO was founded. The economic situation was very worrying then, too, and there was a great need for applied knowledge to be developed for the common good, for innovation and for consolidation of competitiveness.

The fact that the development of applied knowledge for the common good is a core TNO task is unique in the Netherlands. TNO knowledge has to make a distinctive and visible difference in solving societal problems, especially where technology can play a role.

The year 2008 will go into history as the year of major economic malaise following the financial crisis characterised in part by the partial disintegration of several free market principles and the loss of faith in the financial world and its sense of values. It is also a year in which TNO had to confront disappointment. Disappointing because after four successful and profitable years, 2008 closed at a loss of around 5.7 million euros. This loss can be attributed to both a tight operational profit margin by the core areas and several major incidental setbacks.

Despite these circumstances and disappointments, TNO succeeded as never before in substantiating its ambition to cerate added value for its customers and stakeholders.

The TNO | Knowledge for business section of this annual review contains examples of the impact we have had on society.

Changing of the guard

On 1 April 2008 Jan Mengelers was appointed chairman of the TNO Board of Management thereby succeeding Hans Huis in 't Veld. Later in the year Jan Willem Kelder was nominated to succeed Cees van Duyvendijk, the actual appointment being made on 1 January 2009. In both cases the relevant ministries were consulted for some time on the matter. This brought the position of TNO as independent knowledge organisation to the fore in relation to the direct authority of the government. The outcome was reconfirmation of the dual role of TNO towards the government and other stakeholders on the basis of the existing TNO Act. This has prompted a new era in which TNO with a very new management team in both the Board of Management and directors of the core areas is getting ready for the strategic choices that will realise its proposal for society: the new Strategic Plan 2011-2014.

Strategy progress 2007-2010

Our strategy focuses on gaining a distinctive position in the international knowledge infrastructure and creating impact in society through the development, application and commercialisation of knowledge.

Development and application of knowledge

Developing knowledge and making it applicable is increasingly taking place through networks and partnerships among governments, knowledge organisations and industry. TNO is proud of its important role in this strategic triangle, with the aim of developing new knowledge through sharing it. Since the beginning of the 1990s TNO has been developing knowledge to this end together with universities in knowledge centres, of which there are currently nineteen. This provides a solid knowledge basis for utilisation in other partnership initiatives. Different key initiatives have been started by TNO. A few examples are referred to here. The Fire-fighting Training Centre Amsterdam-Schiphol opened at main airport Amsterdam includes the TNO Fieldlab where new methods and technologies can be tested and developed for individual and team response to incidents together with the police and military police. In a consortium with the Haagse Campus (University of Leiden), Capgemini and the municipal authorities of The Hague, TNO developed scenarios for The Hague 2017: a safe and attractive city of international allure to live and work (City of Peace and Justice). The 'High Tech Automotive Systems' open innovation programme saw TNO working together with the Federation Holland Automotive to develop new concepts in the area of 'driving guidance' and 'efficient vehicle'.

The Strategic Plan 2007-2010 states that TNO will also participate in national research programmes encouraged and co-funded by the government. These provide an important stimulus to specific areas of public-private cooperation among industry, universities and technology institutes. Participation in these programmes does require TNO to make its own knowledge investments as 'matching funds'. In 2008 this amounted to some 50 million euros.

» TNO participates with matching funds in more than fifty national, varied research programmes, including the Dutch Programme for Tissue Engineering, Game Research for Training and Entertainment (GATE), Nanotechnology Network in the Netherlands, Transition to Sustainable Mobility and GigaPort Next Generation Network.

International cooperation

In the field of international cooperation TNO has scored well within the Seventh Framework programme of the European Commission in respect of approved project proposals. It is within this Framework Programme that TNO undertook a three-year cooperation project with Fraunhofer-Gesellschaft (Germany), VTT (Finland), CEA (France), SINTEF (Norway) and the respective ministries of science. The aim of this project is to gain better insight into how these RTOs, Research and Technology Organisations, operate. TNO is making efforts to intensify international cooperation in several areas. This is the reason for joint activities getting under way on four specific topics: CO2 capture and storage (CCS), emission-neutral building, offshore and safety.

» The percentage of selected FP7 project proposals from TNO is 27% for the first two tenders, considerably higher than the average European success rate of 21%.

The relationship with Russian knowledge institutes also plays an important role in international cooperation. We are working together in four fields to develop complementary knowledge positions over the longer terms. The cooperation comes in the form of an agreement with the Russian Academy of Sciences and the Lomonosov Moscow State University. It revolves around separation technology focused on CO_2 capture and storage for the oil and gas industry, opto-chemical sensors used in measuring instruments, nano-composites to change the properties of materials and medical nano-diagnostics.

Commercialisation of knowledge

Spin-offs

TNO has incorporated its private holdings into a single holding company: TNO Companies B.V., a private limited company that is not government funded and is legally separate from the public organisation. This formal construction prevents cross-subsidising and state support. TNO Companies B.V. extends the TNO mission by creating new high-tech and innovative SMEs. This enables the knowledge generated by TNO to be converted into economic and societal value in the shape of independent companies. Following years of intensive support and supervision by TNO Companies B.V., these companies are then sold, often in the form of a management buy-out. Up to the year under review around 30 of these former (and fully alienated) companies with a joint turnover of some 51 million euros have been active in the Dutch SME sector.

» The consolidated market turnover of TNO Companies B.V. – the holding of the TNO group company – rose in 2008 to 93 million euros, with the non-consolidated amount (minor holdings) to 20 million.



from left to right J.H.J. Mengelers, M.Sc. (from 1 April 2008), C.M. Colijn-Hooymans, PhD., J.W. Kelder.

TNO Companies B.V. established five companies and sold off six in the year under review. The expansion of new start-ups came mainly in the fields of analyses (DUCARES), legionella prevention (LEGYON, a joint venture with Vitens), social security (Dariuz), automotive (TTAI, a joint venture with TÜV Rheinland) and biological and chemical protection (BCPS). The consolidated profit of TNO Companies B.V. for 2008 was 1.1 million euros after devaluation on the basis of the worsening economic situation.

The market circumstances that were partly attributable to the economic trends were more difficult in many instances than in preceding years. The automotive activities of TASS and TÜV Rheinland TNO Automotive International (TTAI) were particularly adversely affected. Efectis Holding SAS, our Dutch-French joint venture, provided a very positive exception. Efectis Nederland B.V. is the Centre for Fire Safety in the Netherlands.

Premier depots

In 2008 much attention focused on identifying our patent positions, with more than 100 patent country maps being drawn up. We investigated whether the selected programme accents in our demand-driven programmes (DPs) took sufficient account of the patent positions already held by others and the innovation trends that are recognisable in the patent information. Compared to 2007 it is evident that the knowledge investments from DPs are beginning to lead to growth in our patents portfolio. In 2008 the number of patents granted had risen from 1134 to 1321 by the end of the year under review. There is growing market interest in these patents.

Our stakeholders

TNO considers it important to involve its government, industry and knowledge institute relations in the organisation's development. This is why each year the key stakeholders are invited by the Board of Management to take part in the TNO Round Tables. In 2008 internationalisation was the topic of discussion.

In addition, the Board of Management visited a great many business relations during the year. The new chairman of







J.C. Huis in 't Veld, M.Sc. (until 1 April 2008), C. van Duyvendijk (until 28 October 2008).

the Board of Management in particular made a point of becoming acquainted with the key stakeholders and spoke with the Cabinet Ministers Plasterk, Van der Hoeven and Van Middelkoop as well as several CEOs, among others. A number of business relations also visited TNO, the high point being a visit by the Innovation Platform led by Prime Minister Balkenende right at the start of the year under review. Other ministerial visits came from Minister Verburg, secretaries of state Huizinga and De Vries, the executive board of the Association of Dutch Municipalities, the governing board of the Ministry of Transport, Public Works and Water Management, the rectors of the universities of technology, Premier Stellmach of the Canadian province of Alberta and a delegation from the Russian Academy of Sciences.

Quality assurance

Following key projects with customers there is always an evaluation. Furthermore, there is a three-year cycle of customer satisfaction audit carried out by an external agency for every TNO entity in turn. In 2008 the fourth of these cycles was completed and compared with the previous cycle. A comparison that proved favourable, with TNO having succeeded in improving on all ten key service and product aspects, especially empathy, communication and accessibility. Knowledge and expertise are aspects traditionally highly regarded by customers, just as the 'end product'. A weak point, though, is delivery time. The direct consequence of the improvements can be seen in a better general customer satisfaction score for TNO.

CSR annual review

TNO is working on a better future, for both stakeholders and our own organisation in relation to our social responsibility. We deploy our knowledge in all kinds of areas and are presenting this year, for the first time, a separate Corporate Social Responsibility (CSR) annual review.

Our employees

In a knowledge organisation like TNO the employees are vital to realising proposed strategy goals so in 2008 we focused on the development of our employees targeting talent development, management development and recruitment strategy. As is evident from various internal and external employee satisfaction surveys, we have achieved considerable progress in these fields. In the employee commitment survey 'New TNO Level' of 2008 the employees scored a 7.4 (out of 10) for TNO and this was mirrored by the scores attributed for employee satisfaction by Intermediair and Incompany surveys.

TNO's success is largely attributable to various and complementary qualities, knowledge, experience and perspectives. For this reason TNO has a diversity policy. We aim to have 20% of management positions in 2013 filled by women, an aim that was already a fact in higher management in 2008.

The fact that our employees are highly rated both at home and abroad is evident from the awards and recognition received in the past year. TNO even gives its own award 'excellent young researcher' annually. This annual review contains a list of these TNO toppers.

 » In 2008 440 employees joined the organisation while 537 left. The largest group of new employees
 (45%) is younger than thirty. The split between men and women is 60/40%. Foreign employees made up 12% of new personnel, 55% of these being female.

Finance

In 2008 consolidated turnover rose by 20.8 million euros to 599.7 million (+3.6%). The result was a loss of 5.7 million euros, 16.4 million euros below the target for 2008. This loss in 2008 was largely attributable to additional provisions (Sixth Framework Programme, scientific fraud and reorganisations) and exceptional devaluations of various assets, particularly at the Delft site. Compared with the result for 2007 (12.3 million euros profit), there is a clear reversal.

Turnover

The turnover of TNO – the TNO organisation including group companies – was 599.7 million euros. The turnover for TNO excluding TNO Companies B.V. rose by 7.5 million euros to 511.6 million euros while the turnover for group companies, of the 100% holding TNO Companies B.V., rose from 79.7 million euros in 2007 to 92.8 million in 2008. This increase can be attributed largely to the turnover of privatisations (spin-offs) in 2008 from the public organisation.

The government funded turnover of 194.7 million euros fell slightly compared to 2007 (196.4 million euros) as a result of a reduction in government funding. Market turnover rose by 22.5 million euros to 405.0 million euros (in 2007 this was 382.5 million euros), equivalent to 68% of the total turnover. Turnover at home (industry and government) rose on 2007 by 8.3 million to 265.1 million euros while turnover abroad, including TNO group companies, rose by some 11% to 139.9 million euros. Net turnover (turnover minus direct project overheads) rose by 2.7 million euros to 504.6 million euros.

Operating expenses

Personnel expenses rose by 16.1 million euros, a rise largely caused by the effects of autonomous salary increases of around 7 million euros and a higher mutation in the personnel provisions of some 7 million euros. The other operating expenses fell compared to 2007 by around 5 million euros given a lower mutation within claims and other provisions (3.2 million euros), lower costs for use of engineering resources (2.7 million euros), lower costs of outsourced work (1.9 million euros) and lower general management costs (1.5 million euros). In contrast to this, costs of accommodation were higher (4.1 million euros). The rise in depreciation costs is mainly attributable to the exceptional devaluations on various assets.

Liquid assets

At the end of 2008 liquid assets stood at 104.9 million euros, 7.3 million less than at the end of 2007. This fall is due to an exit cash flow from investment activities of 52.9 million euros compared to an entry cash flow from operational activities of 45.1 million euros. Investment spending in 2008 of 37.0 million euros relates to buildings, land and fixed technical installations. This amount includes the completion of the automotive site in Helmond, initial investments for the proposed new building in Cromstrijen and the completion of the Nanolab in Delft. In addition, 21.0 million euros were invested in technical resources, inventory and intangible fixed assets.

Communication

Our internal communication policy is geared to supporting mutual cooperation and creating a sense of pride in TNO. Our strong identity – based on our core values of integrity, independence, professionalism and social commitment – secures a good basis to develop and enhance our image and reputation.

Our external communication targets are multilevel account management, a proactive press and public affairs policy and our website TNO.NL. A world without (digital) networks has become inconceivable and TNO is actively responsive to it, also in its communication. In 2008 relationships with government, industry and knowledge institutions were consolidated, in part through the many visits made to and by TNO and our increasingly familiar 'Round Table' sessions. In 2008 the TNO alumni network, 'ConnecteD', was established. During the year under review TNO scored well in various image surveys. We continue to achieve high scores in aspects like 'social', 'dynamic' and 'sympathetic', without making any concessions to our very important 'reliable' value.

» The corporate advertisement campaign of TNO won the creativity award of the Burgundy Communication Group in 2008.

Looking ahead

A look ahead is, of course, only provisional. Given the economic situation and the financial result of the year under review, the key short-term themes are cost control – without this being detrimental to the quality of our output –, more focus and the face to the outside. In terms of the longer term, we aim to make TNO a knowledge organisation of world class, from 'world famous in the Netherlands' to 'prominent international player'. So, not just in the Netherlands do we want to offer our knowledge for a better world, but throughout Europe too.

We therefore set ourselves four key roles: first, TNO as a high-tech developer of new knowledge and solutions with and for customers, with innovation, quality and impact prominent. In the second role we see TNO as a supplier of the derivative knowledge products and services. The third task is the valorisation of knowledge through the founding of new companies and the commercialisation of patents. Finally, knowledge transfer to the SME sector is and remains a key cornerstone of our being.

The fact that the development of applied knowledge for the common good in the Netherlands is one of the key tasks of TNO means responsibilities that we are happy to shoulder. How we do this is the topic of intensive discussion with industry and government.

Our conclusion is that the recession must be tackled with innovation now, by developing additional intensive innovative power for one or more years in a number of themes so that we can, when the recovery begins, have the edge in these fields.

A short while ago we came up with a proposal, the essence of which is that TNO temporarily takes on specialist knowledge professionals in the short term. These highly qualified people, already working at companies, will focus on the five thematic areas identified by TNO together with industry and government as the most urgent themes confronting society:

- Energy like thin-film and flexible solar cells
- Public safety like safeguarding privacy in relation to improved surveillance methods, and privacy in a new information society in which internet will play an even more important role than now
- Mobility such as cooperative transport systems (intelligent vehicles and intelligent infrastructure) and hybrid urban transport
- Intelligent care using robotics and monitoring to improve productivity in the care sector
- Energy-efficient building.

It is about developing knowledge together with TNO over the coming years that society is, in our opinion, ready to grasp with both hands. We also believe that an intrinsic concentration is both inevitable and the only way in which the extra support will pay for itself and more in the future. We regard these thematic areas as providing a powerful national competitive position in respect of our neighbouring countries.

We believe that the necessary efforts will ask a lot of us if we want to make the picture of the future a reality. More than ever before we will have to focus on those areas that are fundamentally crucial for TNO. It is there where we will put our knowledge investment budgets. We will also look explicitly at those areas with demonstrable growth potential, despite stagnating market growth. As always, we have to build up our knowledge today for the markets of tomorrow.

We enhance science through far-reaching forms of cooperation with universities and scientific players in Europe. We put ourselves at the heart of society and confront issues that matter to society, playing a prominent pioneering role in five to ten fields. We are conscious of the long road ahead in achieving that picture of the future, a road we look forward to traveling together with our employees and business relations in society.

Delft, 11 March 2009 J.H.J. Mengelers, M.Sc., *chairman* C.M. Colijn-Hooijmans, PhD. J.W. Kelder Good corporate governance implies the presence of a good corporate structure and is of particular importance to those governing and overseeing TNO. They draw guidance from the Good Governance Code for Implementing Bodies. This underpins, among other things, the various regulations governing TNO. In 2008, with a view to increasing the transparency of TNO's governance, the organisation's regulations were posted on both 'Spider', TNO's internal network, and the TNO website. Now, the regulations of the TNO Board of Management, the TNO Supervisory Board, the remuneration committee and the selection and appointments committee are publicly available, as are the TNO Company Code and the complaints procedure based on the General Administrative Law Act.

In 2008 the TNO Supervisory Board comprised seven members. In accordance with the TNO Act, in 2008 J.G.F. Veldhuis resigned his supervisory role for reasons of age. Professor J.M. Bensing was appointed as his successor with effect from 1 September.

The Minister of Economic Affairs (EZ) rejected the recommendation of the TNO Supervisory Board to reappoint G.-J. Kramer; her standpoint being that since it is current policy to reduce the age of board members, reappointment should only be considered in exceptional circumstances. Various meetings between EZ and TNO resulted in a shared understanding of the desired candidate profile. The three members of the TNO Board of Management are appointed by Royal Decree. Two members, including the chairman, are proposed to the Crown by the Minister of Education, Culture and Science (OCW), the third member by the Minister of Defence. By decision by the Crown on 1 April, J.H.J. Mengelers was appointed chairman of the TNO Board of Management.

On 1 July, the Supervisory Board and the Council for Defence Research recommended Vice-Admiral (retired) J.W. Kelder as successor on the TNO Board of Management to Vice-Admiral (retired) C. van Duyvendijk; the latter was granted an honourable discharge with effect from 27 October 2008. In the final months of 2008 several discussions were held with the Minister of Defence on the topic of the lastmentioned joint recommendation. The Minister adopted the standpoint that the recommendation would not translate into a nomination unless the TNO Supervisory Board made far-reaching changes to the remuneration policy, which had already been adjusted downwards, and took the step of incorporating benefits received under the Former Military Personnel Benefits Act (UKW) within this policy. In December 2008, following considerable deliberation, the TNO Supervisory Board finally felt compelled to bring the issue before the court in interlocutory proceedings. The court pronounced that the salary policy is the preserve of the TNO Supervisory Board, that the UKW must continue to be disregarded by the TNO Supervisory Board and that

the Minister is not entitled to refuse a nomination on the grounds of remuneration. In a letter to the Lower House (16 January 2009), the Cabinet let it be known that it has proposed the new member of the TNO Board of Management for appointment by the Crown. This Royal Decree dated 2 February has since been published. The TNO Supervisory Board held five ordinary meetings in 2008 and various Board members twice attended a consultative meeting with the Central Works Council as part of the discussion of general progress. No separate meetings of the remuneration committee were held. Remuneration was a topic of such significance in 2008 that, where necessary, it was included on the agenda of TNO Supervisory Board meetings. The selection and appointments committee met twice. Four special closed meetings of the TNO Supervisory Board were held, all on succession matters concerning the TNO Board of Management and the TNO Supervisory Board. In August 2008 the TNO Supervisory Board discussed its own functioning with respect to its members' interaction and the functioning of the TNO Board of Management.

One of the actions by which TNO's financial accountability is discharged is the sending each year of the annual review and annual accounts to the Minister of OCW by the TNO Board of Management. The annual accounts as approved by the TNO Supervisory Board are accompanied by an auditor's report. In addition, at the request of the Ministry of OCW, the accountant undertakes a separate audit concerning the rightful spending of funds. This audit is based on the TNO audit protocol, as agreed between the OCW, the accountant and TNO. KPMG was appointed as the auditor of the annual accounts 2008 by the TNO Supervisory Board. In keeping with tradition, the TNO Supervisory Board discussed the report with the auditor in the absence of the TNO Board of Management. As in the preceding year, this year the auditor reported that no points primarily concerning the TNO Supervisory Board required discussion.

In January 2008 the Minister of OCW informed the Dutch Upper House that the Independent Administrative Bodies Framework Act, which provides uniform rules for independent administrative bodies, does not apply to TNO. While TNO is indeed an independent administrative body, it has no public authority. In view of this, TNO does not satisfy the definition of an independent administrative body as used in the Framework Act.

In November 2008 deliberations took place between the Minister of OCW and the TNO Board of Management. In March 2009 the TNO Supervisory Board discharged the TNO Board of Management.

Delft, 11 March 2009 On behalf of the TNO Supervisory Board J.M. Leemhuis-Stout, *chairman* Each year a number of TNO staff accepts an award, recognition or distinguished appointment from an external party, often an international association or organisation. The TNO toppers of 2008 are:

Name
Award – Awarding organisation
Peter Essens
Excellence Award - Human Factors and Medicine Panel.
Nico van Ham, Alan Creemers, Jeroen ter Meer and Willem Duvalois
Achievement Award EAEM – Ministry of Defence Canada.
Hans van den Berg and Remco Litjens
Best Paper Award - 6th International Conference on Wired/Wireless Internet Communications in Finland.
François Furthner, Bas van der Putten, Gerwin Gelinck and Erwin Meinders
Best Peer-Review Paper Award, Organic Semiconductor Industry.
Rob Kooij
Best Paper Award - Institute of Electrical and Electronics Engineers (IEEE).
Eric Groen and Wim Bles
2008 Life Science Book Award - International Academy of Astronautics.
Jan Nijenhuis
Rien Koster Prize – Dutch Association of Precision Technology.
Peter Essens and Anne Helsdingen
Excellence Award - NATO Human Factors and Medicine Panel.
Wouter Lotens
Scientific Achievement Award 2008 - NATO Research Technology Organization (RTO).
Marco van der Meijden and Mark Visser
NCW Award - Institute for Defense & Government Advancement (IDGA).
Pascal Paulissen
Scientific Achievement Award – NATO Research & Technology Organisation (RTO).
Annemarie Brouwer, Marieke Thurlings and Jan van Erp
Best Paper Award – Graz University of Technology.
Irek Karkowski
Best Practice Award 2008 – Institute for organisational development in the health and welfare sector.
Bert Boltjes, Jaap van den Oever and Shuang Zhang
Distinguished Technical Paper Award – OPNET Technologies.
Adrian Pais
MGA GOLD Achievement Award – Institute of Electrical and Electronics Engineers (IEEE).
Hans Quak
2nd prize in the Journal of Operations Management (JOM) - Premier Business Management Journal.
Erik Fledderus
Teaching Prize – TU Eindhoven.
Ed de Mulder
Paul Formarier Prize – the Royal Flemish Academy of Belgium for Science and the Arts.
Márcia Péter, François Furthner, Bas van der Putten, Gerwin Gelinck and Erwin Meinders
Best Peer-Review Paper Award - The Peer Review Committee.
Nina Schaap
Best Science Paper Award - TRAIL Research School.
Margriet van Schijndel-de Nooij
Manual Junoy Memorial Prize – International Federation of Automotive Engineering Societies (FISITA).
Albert Jansen
AGV Award 2008 – Amstel Gooi and Vecht Higher Water Board.

Every four years TNO devises new research programmes. These are series of research studies related to a coordinating theme. Our choice of subjects is not arbitrary. On the contrary, we work on the basis of social themes set by the Dutch government: topical subjects and issues that that are both interesting and relevant from a policy perspective – and that demand new answers. After four years, the responsible ministers evaluate our research and, adjust the research programmes as necessary. In 2008 TNO worked on twelve social themes (see below). These themes form the framework for TNO's knowledge development, enabling it to have a substantial impact on our society. Together with our clients, we are working on projects that are helping to build a better future.

Public safety

Safety is a hot issue. For good reason. Criminals are working on an ever broader scale, terrorism has an international arena, petty crime is also on the increase and vital facilities are vulnerable. The threat of natural disasters is also growing. But people in the Netherlands still want to be and feel safe – without compromising their privacy and freedom of movement. TNO contributes to these goals by combining its research efforts on various fronts, like intelligence, ICT and behavioural science. Our focus lies on three key areas: effective and safe intervention, acting on intelligence and information, and a systematic approach to safety and infrastructures.



Defence

The Dutch armed forces take a significant part in international operations, whether peace missions or active intervention in military conflicts. To keep our armed forces effective and affordable, the Ministry of Defence needs scientific and technological knowledge and expertise. Which is why TNO acts as a knowledge partner for the ministry. Not only do we develop smart technologies and materials for the army, air force and navy, we also advise on optimum organisation and operational command processes. In such a way, we help the ministry to defend Dutch and allied territory, maintain international order and support national and international authorities in keeping the law, combating disasters and offering humanitarian aid.



Healthy living

Life in the Netherlands is getting unhealthier by the day. Younger people in particular hardly exercise and prefer to eat fast-food than a good meal. Moreover, the population is ageing, and with ageing comes deficiency. And so our healthcare system can hardly cope with demand. Creative solutions for these problems are absolutely vital. TNO is helping to achieve this by bringing its knowledge and expertise in the field of healthy living. Our focus lies on youth and health, exercise and health, and innovation in healthcare.



Food

Healthy food in a prosperous country like the Netherlands would seem quite natural. Yet ever more Dutch citizens are struggling with excess weight and other health problems. In response, we are being more demanding of what we eat. It must be tasty and suit our lifestyle but it mustn't make us fat. And, most of all, we want it to be healthy. Moreover, our food must be safe and must stay that way even when new dangers are lying in wait for us – new infections and pathogens or resistance to antibiotics. TNO is helping to generate solutions to such food issues through its fan of scientific disciplines, from chemistry to ICT.



Employment participation and the ageing population

Employers prefer staff who are young, healthy and enterprising. But the pool of older people in the employment market is growing faster than the younger group. Moreover, the total number of working people in the Netherlands is declining all the time. To prevent employment productivity falling even further, more people have to stay healthy and in work for longer. Anyone currently not in employment must be encouraged to work in the near future.

TNO contributes knowledge and expertise in order to maintain the current level of employment participation.



Accessibility

Dutch people sit in traffic en masse. And it isn't only the roads that are congested. Water, rail and air options are all close to maximum capacity. Consequently, the continued growth of passenger and goods transport presents Dutch and European society with huge problems, such as substantial investment in the construction and maintenance of infrastructure and terminals, not to mention the impact on quality of life. Traditional solutions, such as more asphalt, are no longer sufficient to accommodate the growing transport requirement. Innovative and smart alternatives are vital. And TNO is contributing a significant share of those.



Construction and spatial development

The Netherlands is a small country, and the art of living there is to design the space such that the various stakeholders, from residents and companies to road users and environmental groups, can live in harmony. So that the country can be developed sustainably. Sustainably for the people that live there, for the environment and for the economy. TNO examines how the various interests can best be weighed up against each other and served. And, more importantly, how you can use that input to improve policy.



Living with water

In the Netherlands we are quite used to it: living below sea level. However, our delta is becoming increasingly more densely populated, and climate change is causing sea levels to rise. This has generated water targets, both national and international. Examples include the Dutch targets set by the National Governing Agreement on Water, the European Framework Directive on Water and the Millennium Development Goals of the UN. Achieving these targets is a crucial social task we face: action is the order, innovation the necessity. TNO is a supplier of the innovation.



Energy (management)

We are using ever more energy. An excessive number of home appliances are pushing up energy consumption and flights to far-off destinations are commonplace. The result is that our energy sources are becoming exhausted. And yet we want our children to be able to skate and ski in the winter when they grow older. This means that we will have to change the way we manage our energy needs – but how? TNO is investigating by studying the exploration and production of oil and gas as well as sustainable (geo-)energy.



Natural and built environment

More and more people are living in our country; their mobility and activity are increasing and their consumption is ballooning. The space that exists is therefore being used more intensively and is being put to multiple uses. TNO wants to help reduce the strain on the natural and built environment by developing knowledge for policymakers, among others, and by focusing on two areas: the quality of our living environment and the sustainable use and management of the subsurface.



High-tech systems, processes and materials

Faster and smaller products continue to come on to the market and offer greater functionality. Whether it's a hearing aid or a mobile phone. To manufacture these microsystems requires special high-tech instruments and production equipment able to work on micro, nano and even pico scale. Such systems are developed not only in Japan and America but also in the Netherlands. Dutch industry wants to hold on to its competitive edge through the innovative use of high-tech materials. TNO is helping them with its knowledge and expertise.



Optimum use of ICT

ICT has assumed an expanding role in our daily lives. From the comfort of our sofa we can visit the bank, order a DVD or pick up information from the town hall. The use of ICT in our society is enormous, and we have not even begun to exhaust the possibilities. How can we use ICT even better in our society? What services and networks can you develop to further improve the communication and information exchange between people in home and work situations? And what is an appropriate strategy for this? TNO is working to answer these questions.





TNO was established by law in 1932 in order to support companies and government that did not have their own R&D capacity. TNO is an organisation that is able to give an objective scientific assessment, independent of private or public interests.

In most cases TNO's customers exercise the option to exploit themselves the knowledge developed by TNO. But TNO also is commercially active with the knowledge it develops, putting this knowledge directly into the marketplace. This commercialisation is in the hands of TNO Companies B.V., an entity separate from the public TNO organisation. Shareholdership by the public TNO organisation enables knowledge to be channelled to the private domain. This public-private organisational structure of TNO is also a response to the very latest market and government insight.

TNO in figures

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after appropriation of result

(in EUR x thousand)

			31-12-2008		31-12-2007
Fixed assets					
Intangible fixed assets	1	2,783		3,523	
Tangible fixed assets	2	256,996		242,023	
Financial fixed assets	3	3,381		4,946	
			263,160		250,492
Current assets					
Stocks and work in progress	4	-12,499		-17,820	
Receivables	5	102,529		87,856	
Cash	6	104,902		112,173	
			194,932		182,209
Tabal			450.000		400 704
Total			458,092		432,701
Financed as follows:					
Equity:					
- General reserves	7	142,926		153,691	
- Appropriated reserves	8	58,205		53,040	
			201,131		206,731
Third-party interests			1,065		361
Investment funds equalisation account	9		48,945		33,655
Provisions	10		31,623		31,689
Long-term debt	11		11,919		11,376
Short-term debt	12		163,409		148,889
Total			458,092		432,701

(in EUR x thousand)

			2008		2007
-	40	500.000		570.000	
Turnover	13	599,663		578,906	
Other operating income	14	12,229		14,048	
Operating income			611,892		592,954
Direct project costs	15	-95,095			-77,026
Personnel costs	16	-378,609			-362,463
Depreciation intangible fixed assets		-1,716			-1,145
Depreciation tangible fixed assets	17	-32,679			-30,081
Impairment of tangible fixed assets	18	-5,327			
Other operating costs	19	-109,020			-114,152
Operating costs			-622,446		-584,866
Operating result			-10,554		8,088
Interest received			5,000		5,203
Interest paid			-1,095		-706
Result on ordinary operations before taxation			-6,649		12,58
Taxation			-612		-36
Income from financial fixed assets			1,385		-310
Result on ordinary operations after taxation		-/-	-5,876		12,239
Third-party interests			159		54
Result			-5,717		12,293
Appropriation of result:					
Result			-5,717		12,293
Additions to:					
- appropriation reserve for civil operating risks		-2,903		-	
- appropriation reserve for defence operating risks		-156		-299	
- appropriation reserve for development cooperation		-		-1,150	
- appropriation reserve for new defence buildings		-8,845		-5,374	
		,	-11,904	, -	-6,823
Withdrawals from:					
- appropriation reserve for civil operating risks		3,700		-	
- appropriation reserve for defence operating risks		-		455	
- appropriation reserve for development cooperation		1,101		1,003	
- appropriation reserve for new defence buildings		1,938		7,487	
			6,739		8,94
Result after movements in appropriated reserves			-10,882		14,415



from left to right N.J. Snoeij, PhD., D.C. Zijderveld, MPA, N. Harize



TNO Defence, Security and Safety

Public safety is becoming an increasingly

important theme both inside and outside national borders, TNO's research contributes

to efficient and effective armed forces,

from left to right J.V. Elsendoorn, M.Eng., H.J. Vink, PhD., prof. P.J. Werkhoven, PhD., G.D. Klein Baltink

TNO Board of Management and TNO Corporate Staff Organisation

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TNO Quality of Life

Healthy food, good working conditions, healthcare, sport – these are all major influences on the quality of our daily life. That's why they are attracting increasing attention. From TNO, too: we research ways of safeguarding and improving people's health and performance.

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and a safer society.

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M.Sc., E.J. Sol, PhD., M.Sc., C. Eberwijn, M.Sc.



TNO Science and Industry

To be competitive internationally, industry has to innovate: with new products, new materials, new design and development methods. TNO helps industry take on this challenge.

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TNO Built Environment and Geosciences

How can we optimise and sustain use of the space that is available to us in such a densely populated country? TNO examines how that space and the built environment can be best planned, used and managed, and how to make optimal use of the natural subsurface resources.

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from left to right G. Bosveld, M.Sc., P.G.M.C. van Alphen, M.A., prof. E. Huizer, PhD., M.Sc., A. Sanderman, PhD.

TNO Information and Communication Technology

Make smarter use of ICT so that business and government get more of a return on their investments. TNO's research generates innovative ICT applications for operational processes and information management.

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from left to right N. Suesan, C.J. Faber, PhD., LL.M., S.J.W. Vos-Poppelaars, chartered accountant, J.H.J. van Nesselrooij, M.A.

TNO Companies B.V.

By founding new, high-value, innovative SME companies, TNO Companies B.V. embodies TNO's mission concerning the transfer of knowledge. Through the commercialisation of knowledge in this way economic and social value are added to technologies.

Location

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Statement of the TNO Board of Management

The consolidated and company balancesheet as at 31 December 2008 and the consolidated and company profit and loss account for the year then ended have been derived from the financial statements of TNO for the year 2008. Our auditors issued and unqualified opinion on these financial statements in their auditor's report, dated March 11, 2009. This auditor's report, as part of the Dutch Annual Audit, can be obtained from TNO.

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