

ThyssenKrupp

magazine

Responsibility

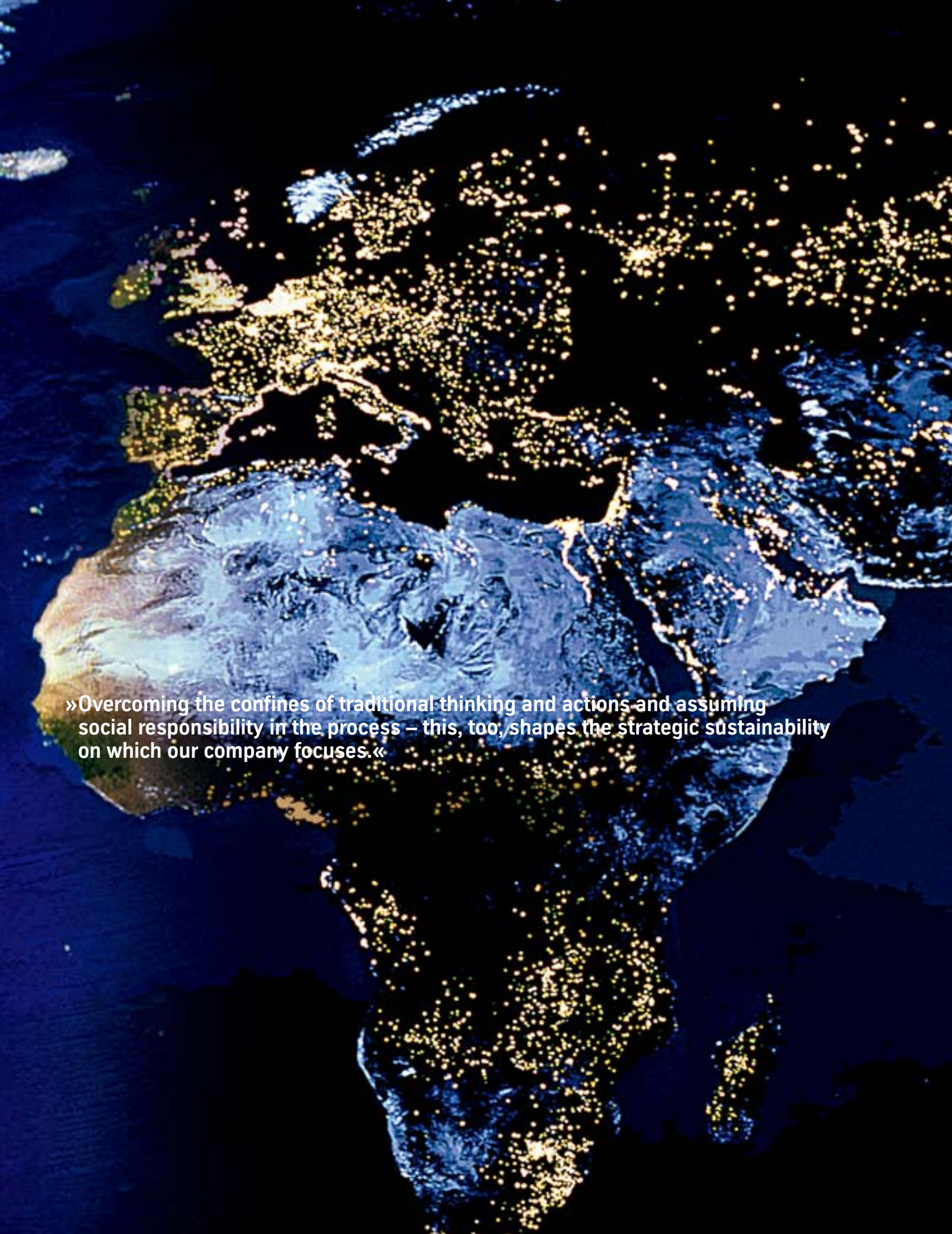


of tradition
processes.
cuses.»

ThyssenKrupp







»Overcoming the confines of traditional thinking and actions and assuming social responsibility in the process – this, too, shapes the strategic sustainability on which our company focuses.«

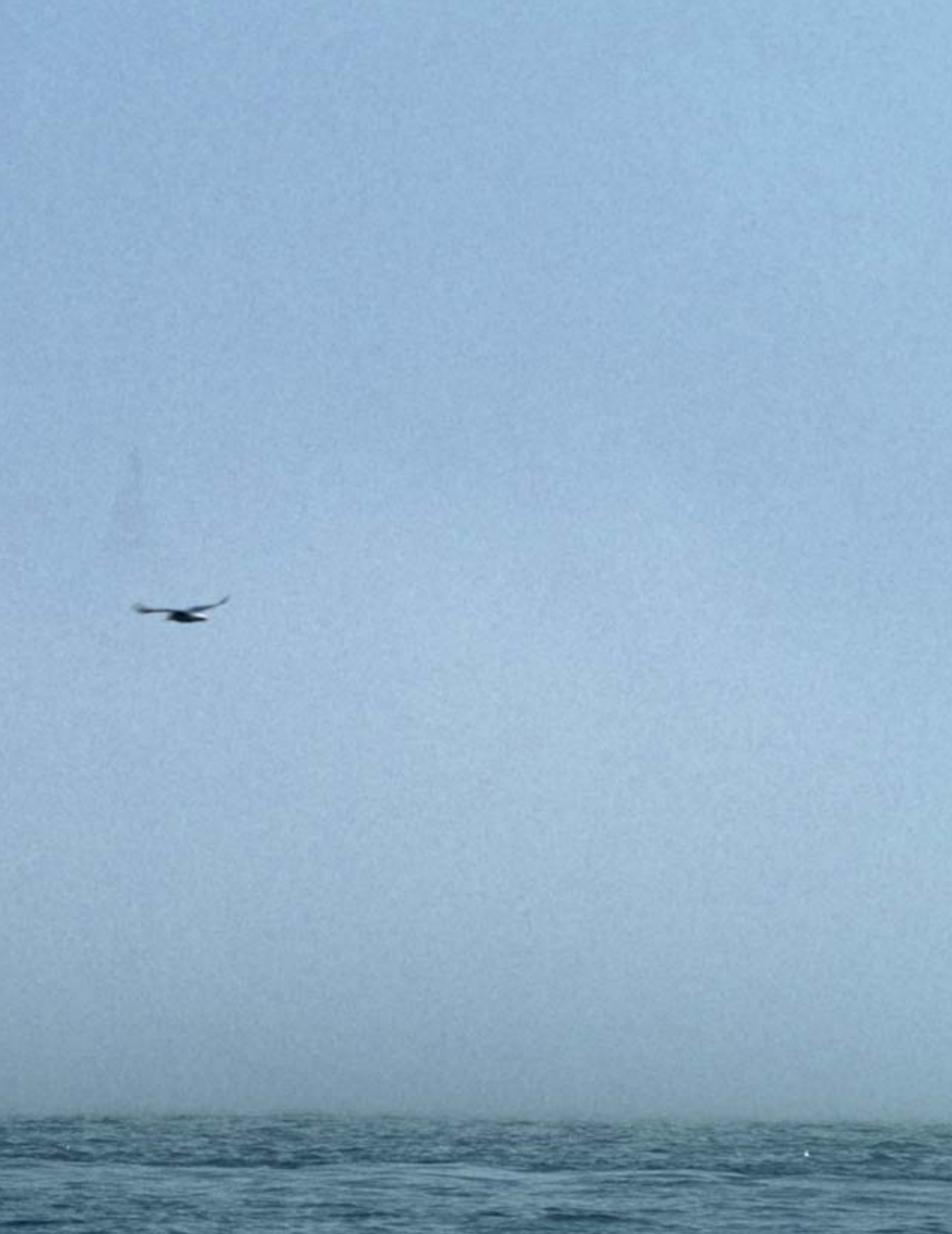




»One of the most difficult and painful realizations about life is that you cannot be everywhere and help everyone.«



»Anyone who wants to identify and use the future's potential has to be prepared to assume responsibility in areas that extend beyond his or her own immediate concerns.«



»Responsibility is the gravitational force whose pull gives us
a feel for reality and the consequences of our actions.«



The etymology of the German word “responsibility” runs all the way back to the 15th century. But you would have searched in vain for the word in a German encyclopedia that was published in 1968. It was not until 1981 that the dictionary devoted a half page to the concept. From where we stand today, that is hard to believe – after all, “responsibility” has long been recognized as one of the most important fundamental values binding our society together. Responsibility is the gravitational force whose pull gives us a feel for reality and the consequences of our actions. Taking responsibility seriously means that we consider the broadest possible repercussions of our own behavior on other people, our environment and the future of our planet.

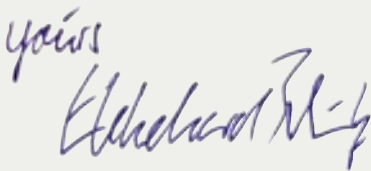
Every day, we at ThyssenKrupp assume our responsibility – for our products, for our employees, for the capital of our stockholders, for our environment and for our social communities. And we do it worldwide – after all, the responsibility of companies is literally borderless in an economic world characterized by international transactions, cross-national investments and global supply chains.

Gravitational force: responsibility

In some individual cases, this may occasionally lead to conflicting objectives, including areas where widely disparate expectations about our responsibility are held. Such cases often entail conflicts of interest and must be weighed on their own merits. Clear priorities have to be set. The values system of a company, its own living corporate culture, serves as the critical compass that provides our bearings.

We act responsibly, and we do not just talk about it – and we were doing so long before “sustainability” and “corporate social responsibility” became business buzz words. Responsible action has a long and productive tradition at ThyssenKrupp and in the predecessor companies. And our responsibility extends far beyond the activities of our Group’s companies and our industrial locations.

We go to great lengths to help solve global problems. Such efforts require us to stand shoulder to shoulder around the world, and we have forged this alliance through our work in numerous networks and partnerships. This latest issue of ThyssenKrupp Magazine is also an expression of our responsibility. In it, we show in concrete terms just how ThyssenKrupp assumes its responsibility. At the same time, it serves as a call for more commitment and self-initiative on the part of our society in the drive to create a prosperous future. For us and our children.

Yours


Dr. Ekkehard D. Schulz,
Chairman of the Executive Board of ThyssenKrupp AG

contents

10 ThyssenKrupp Magazine | 1 | 2006

48

Southern India after the devastating tsunami: What is our assistance accomplishing? An on-site report.



Responsibility

views

- 26 **How do you define responsibility?**
The views of Klaus Töpfer and Jakob von Uexküll

24 worth knowing

58 news

97 puzzle

102 imprint

forum

- 12 **Values and economics**
10 popular theses – commentaries from Joachim Fetzer
- 17 **Alfred Nobel**
Inventor, entrepreneur and patron
- 18 **Interview**
Gesine Schwan: Trust is the decisive factor
- 22 **Survey**
The obligations of entrepreneurs – as seen by the public and companies



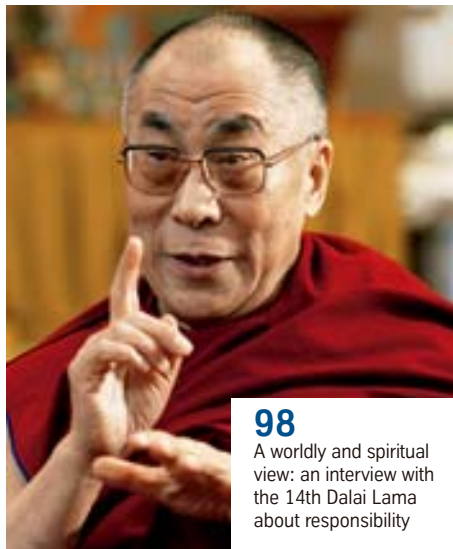
58

A feel for technology:
At the “do-camp-ing” project,
students become engineers



40

Lowering emissions:
a payoff for the
environment



98

A worldly and spiritual
view: an interview with
the 14th Dalai Lama
about responsibility

82

Employee suggestion
programs: ideas
that improve life in
the workplace



74

The many faces
of responsibility



92

The development of
new materials enables
us to think in other
dimensions

projects

- 30 An endangered treasure**
MOSE will help prevent flooding in Venice
- 36 The dream of independence**
Self-sufficiency in energy
- 40 A climate saver with economic potential**
A clever approach to emission reduction
- 44 LIZA – Insight into a think tank**
Innovative technology for the car of the future
- 48 Disaster relief**
Southern India a year after the tsunami
- 62 Energy**
Buildings collect the power of the sun
- 64 Research**
A ship for science

perspectives

- 66 Safety can be learned**
Worker protection programs in Mexico
- 70 At the beginning of progress**
A look at the history of corporate social services
- 74 The future belongs to our children**
Dreams that could come true
- 78 IdeasPark**
Hands-on technology
- 82 Will + fantasy + passion = creativity**
Capturing and introducing ideas
- 88 Faster and safer**
Airports practice a balancing act
- 92 Energy for dreams of the future**
The great hope: materials science
- 98 A feel for humanity**
An interview with the Dalai Lama

70

From company sports to household help: a walk through the history of corporate social services



Theses: Anke Bryson

Commentary: Prof. Dr. Joachim Fetzer, Technical
College of Würzburg-Schweinfurt

VALUES AND ECONOMICS

10 popular theses and their possible flaws

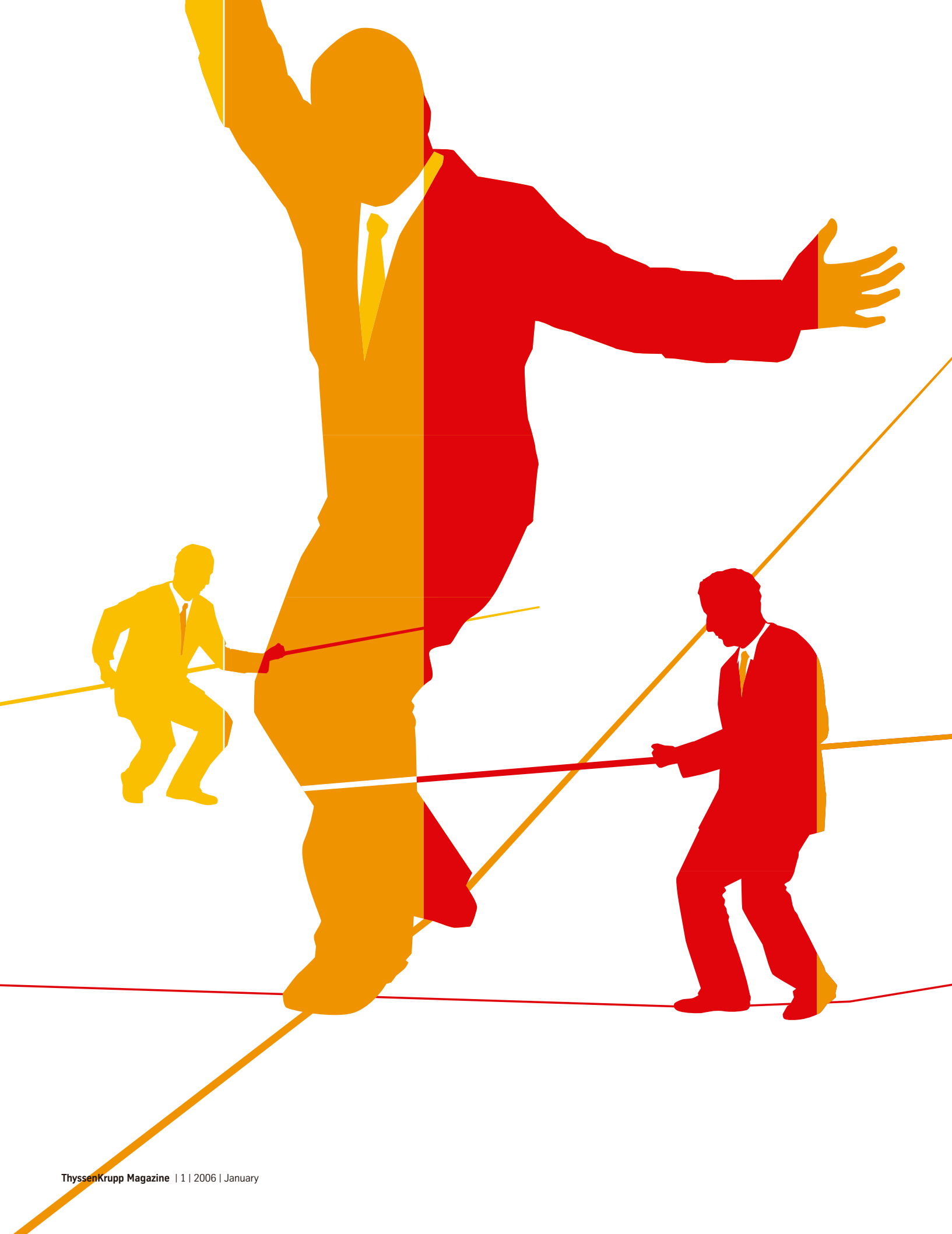
The debate about corporate responsibility and irresponsibility is (back) in vogue. This is a positive development because companies now have to legitimize themselves in their words and deeds much more than they once did. But this discussion goes in circles and can produce an exhausting debate between “a focus on shareholder value” and “an unending stakeholder dialogue.” We have tested out the accuracy of a series of popular theses that regularly turn up in this debate.

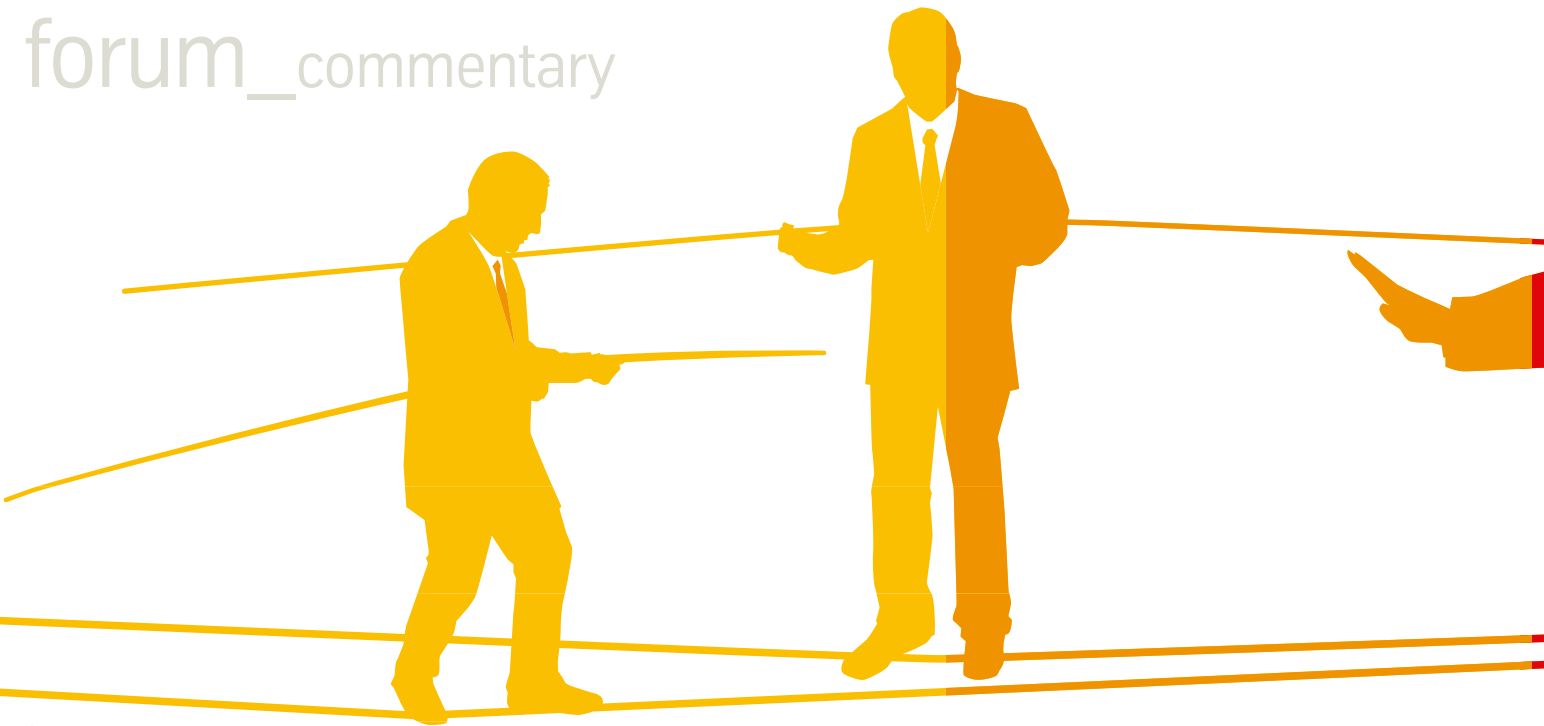
Thesis 1: A corporation’s primary responsibility is to make a profit, which will create jobs and fuel the economy.

Fetzer: Neither profits nor jobs are ends in themselves. As a result, they are not the primary responsibility of corporations, which actually have four core responsibilities in a market economy: to create and sell goods and services; to perform these tasks efficiently; to develop innovative products and processes; and to gauge and assume the risks that arise from their activities. In a functioning market economy, a solid profit is an indication that a company is successfully carrying out its responsibility in all four areas. It makes sense to measure a company’s management on profit performance for this reason and only for this

reason. But an indicator is only an indicator and not the matter itself. If the groundhog comes out of its burrow and does not see its shadow, then we are supposed to have an early spring. But the groundhog is not the weather.

Thesis 2: It is immoral for a company to lay off workers when its profits are growing. ►





► **Fetzer:** If the efficient use of resources is one of a company's core responsibilities, then this principle applies to human resources as well. In places where workers are not needed, a company can let them go. When times are bad, this is a moral obligation and must be done quickly. Frequently, though, the issue of fairness in the dismissal process gets lost. When times are good, personnel cuts are legitimate and can even be morally desirable in order to avoid crises which necessitate deep cuts. This has little to do with rising or falling profits. The number of jobs has just as little to do with a company's core responsibilities as the realization of profits.

On the other hand, it would be wrong for a company to lay off workers in an attempt to dress up its profits and then have to rehire them in the next quarter because it would be unable to fulfill its core responsibilities, serve its customers or develop innovations. That would be like building a tent over the groundhog's burrow on a sunny day to keep it from seeing its shadow. But that will not bring on spring.

Thesis 3: It is irresponsible to take on major entrepreneurial risks and endanger many jobs in the process.

Fetzer: It would be even more irresponsible to avoid entrepreneurial risks because this would mean a risk-free, or certain, doom. As the saying goes: Anyone who has never looked into an abyss cannot be an entrepreneur. Conversely: Anybody who jumps on the bandwagon of every presumed innovation has to be careful to avoid ending up in the abyss with the rest of the lemmings.

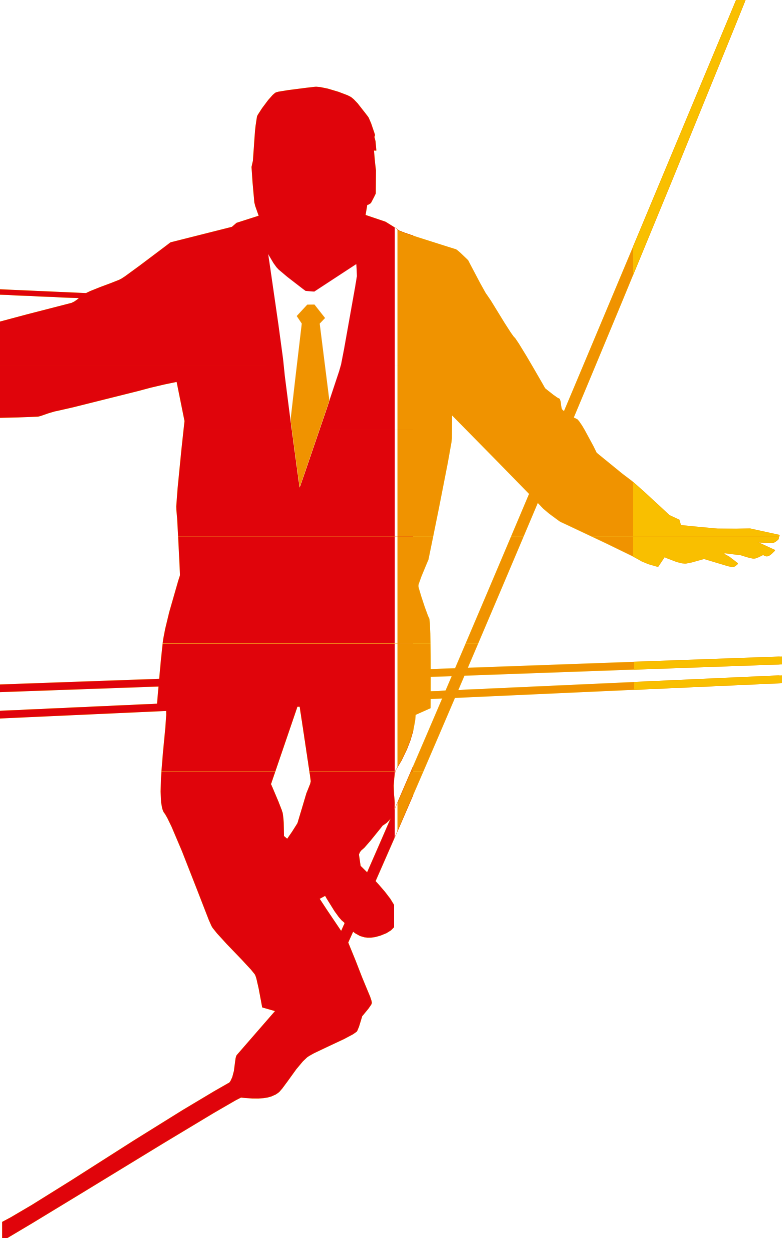
The introduction of innovations is one of a company's core responsibilities – and you cannot do that without taking risk. By the way, you cannot shunt this risk off onto the state, society or the environment – this poses a real moral temptation for many companies. Employees' participation in a company's risks, including job risk, is not immoral. Rather, it is logical. However, this must apply even more to decision makers and shareholders. If the impression is created that entrepreneurial risks are not being assumed by them, that will endanger the legitimacy of entrepreneurial acceptance of risk. This would pose a fatal obstacle to innovation.

Thesis 4: Companies can afford to be socially active only when they are successful.

Fetzer: It is important and fitting for companies to form close ties with the society where they do business. Anyone who is not active in society does not know his employees, his customers and the cultural context. This is not a good basis for long-term success. As a result, social commitment is a pre-requisite for success and not the other way around. But the central social commitment is still to do the job of the company well: to provide products and services efficiently and cost effectively; to introduce innovations; and to assume the resulting risk. If companies are not successful here, other activities in cultural and social areas will not be successful either.

Thesis 5: Environmentally friendly production is irresponsible if it diminishes a company's competitiveness and leads to job cuts.

»The development of innovation is part of a company's core tasks – and it is not possible without taking risk.«



Fetzer: Companies have roots. Shedding these roots all too quickly to become global players could be shortsighted. A job created in China by a German company should be one that is worthy of a German company – that includes, among other things, humane working conditions based on our principles and the right to fair representation for workers.

But what is unpatriotic about the drive to tighten the economic and cultural ties between a cosmopolitan Germany and a developing China? Even though it may be painful for those affected: In ethical terms, a job for a Chinese that is created under the conditions mentioned above is no worse than a job for a German.

Thesis 7: The demands of the capital markets and the concentration on short-term profit maximization today make it more difficult for companies to act responsibly. ▶

Fetzer: Use of the environment is always use of resources. The efficiency requirement always means resources should be used as sparingly as possible. Sometimes, this sparing use requires intense work and creates jobs, and sometimes it does not. It is needed nevertheless.

When environmental resources are free of charge, then there is a particularly large temptation to forget about using them sparingly in order to achieve cost advantages over competitors who you believe think the same way. That is understandable, and frequently unavoidable. But, in the end, it is irresponsible because the no-cost use of resources amounts to theft.

Faced with such a situation, companies must search for ways out of this dilemma: by gaining customers' support of their environmental strategy, by working out agreements with their competitors on improved production methods and by contributing to a national and supranational framework guaranteeing that environmental resources receive the price to which they are entitled. Such actions will eliminate the dilemma. All of this is difficult to accomplish and sometimes runs counter to the presumed short-term interests of the company. But it is necessary. The jobs argument may be politically useful. But it is not morally convincing.

Thesis 6: German companies have a patriotic responsibility. For this reason, they are acting irresponsibly when they cut jobs in Germany and create jobs in China.



Prof. Dr. Joachim Fetzer

Born in 1966, he specialized in business ethics during his studies in protestant theology and economics. In 2004, Fetzer was awarded the IW economic institute's Max Weber Prize for Business Ethics for his PhD thesis "The responsibility of the corporation." He has been a professor for business ethics at the Technical College of Würzburg-Schweinfurt since March 2005. Fetzer is a member of the board of the German Business Ethics Network and the Marburg Working Group for Theological Business and Technology Ethics.

Fetzer: Every era has its own plague. It was also difficult for companies to act responsibly during the era of apartheid in South Africa or during the Cold War. People should keep this fact in mind. It is true, though, that the structures of raising equity capital have changed dramatically in the past 20 years – along with the type of reporting requirements and lines of communication within companies. Many things have gotten faster and become more short term: Innovation and product cycles are two examples. But the changes have primarily affected the creation and dissemination of information. The relationship between management and investor will chill considerably if communications are boiled down to a set of key figures instead of being conducted over coffee and tea at an annual shareholders' meeting.

We should not complain about the demands of the capital markets. Instead, we should find ways that will enable investors to assume their responsibility for a company. One way is the effort to systematically address questions about the environment and social sustainability in annual reports and investor relations activities. A second way is the creation of ethical funds and, most of all, corresponding ratings. A third way would be a global information exchange on companies' social and environmental responsibility. Innovations are needed here.

Thesis 8: Governments or supranational agencies should rein in financial investors to prevent a swarm of locusts from descending on a company and picking it clean.

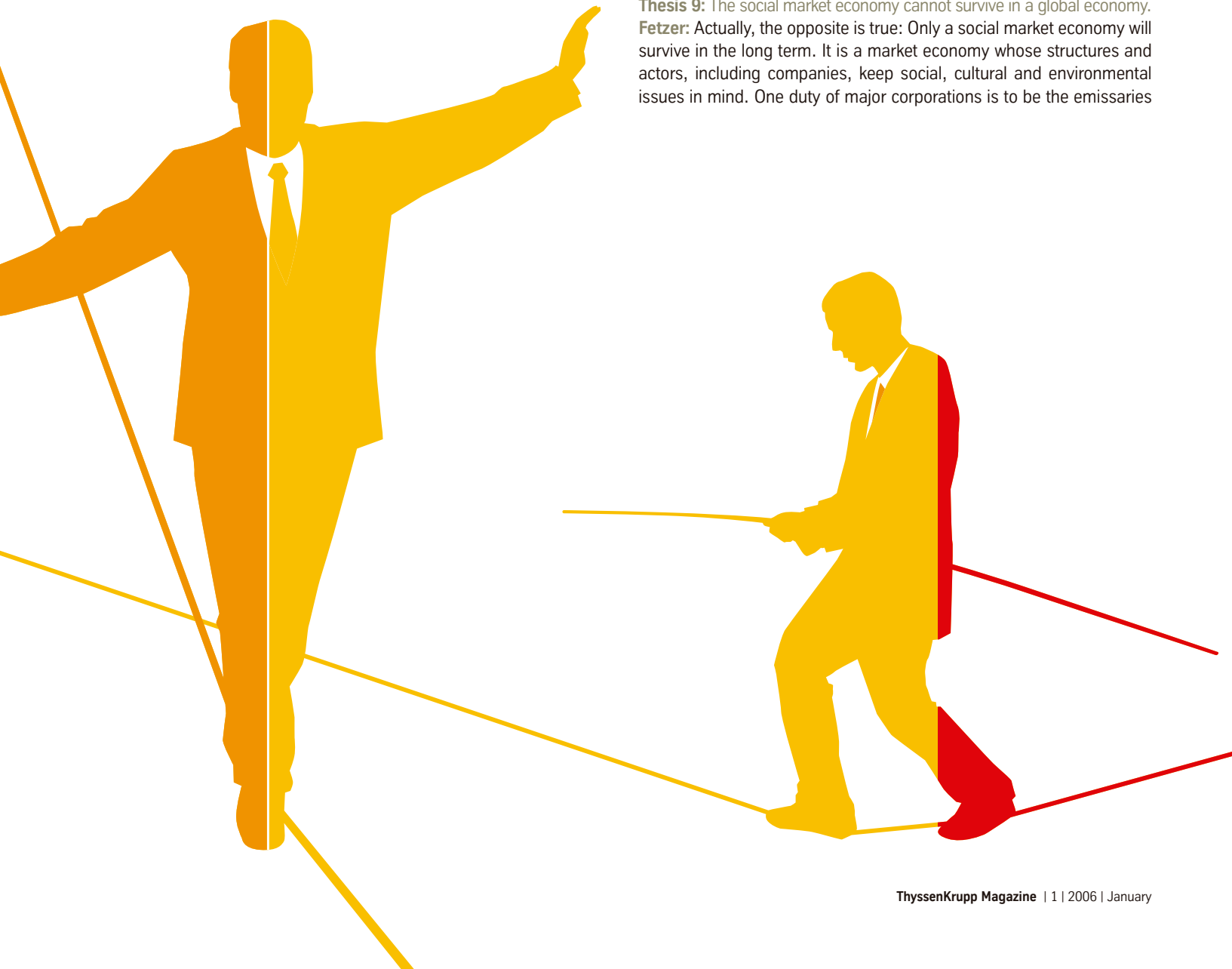
Fetzer: In the Bible, locusts are a just punishment handed down by God. A company "hit by a swarm of locusts" generally has already made some mistakes. In these terms, let's take a look at private equity for a minute: People who bundle their capital together and invest it to restructure a company shaken by a crisis and make it competitive again or to replace a departed shareholder can be considered to be helpers and not plunderers.

But you should keep one point in mind: The growing influence of private equity is a new development. New developments always pose dangers that you learn to deal with only after a certain amount of time has passed. These dangers could include financial investors who carry out their restructuring activities too quickly, too intensively or too half-heartedly. No one can rule out the possibility that they will go too far and contribute to bankruptcies that really would not have been necessary.

One thing is certain: Government or supranational agencies are not the better restructuring agents. Their job lies in other areas, including the creation of more transparency about the source of the money managed by the funds.

Thesis 9: The social market economy cannot survive in a global economy.

Fetzer: Actually, the opposite is true: Only a social market economy will survive in the long term. It is a market economy whose structures and actors, including companies, keep social, cultural and environmental issues in mind. One duty of major corporations is to be the emissaries



of a social market economy. The economic model of the earlier Federal Republic of Germany working in combination with the ethos of many people who established today's successful companies still remains an export hit.

But there is a caveat: If we understand a social market economy to represent Germany from the 1960s to the 1990s, with its halfway market-economic system and constantly growing welfare state; its reduced individual responsibility and willingness to take risks by citizens and companies; and its growing regulations, then we know one thing: We were able to afford it in a certain historical situation on this side of the Iron Curtain. It has reached its limits, and the current bickering in

Germany over the details of every change is definitely no export hit.

Thesis 10: Because economic interrelationships are so complicated today, it has become too easy to shun responsibility.

Fetzer: Escaping responsibility is a characteristic known to man since Cain told God after killing his brother: "I know not: Am I my brother's keeper?" And back then, the situation was really rather easy. It is correct to say that we must design structures in a way that does not make it so easy to shun responsibility. In the process, we must make the actors to whom we have granted broad freedoms responsible for negative events. ◀◀◀

Photo: Oliver R  ther | Illustrations: Tobias Wandres



Inventor, entrepreneur, patron – Alfred Nobel, the Swedish industrialist and benefactor of the Nobel Prizes

Entrepreneurs have always pondered the issue of business responsibility within the charged context of economic and social demands. Alfred Nobel, the inventor of dynamite, the successful industrialist and the benefactor of the Nobel Prizes, was one such entrepreneur. During his lifetime, he was torn between the promising benefits and ominous effects of his invention.

An excerpt from the Frankfurter Allgemeine Zeitung newspaper of Dec. 7, 1996, written by Heribert Klein: "His last will and testament still remain in effect today. His final request is expressed every year when the Nobel Prizes are awarded. The idea that he wanted to buy his moral freedom from the presumed evil captivity that he entered by earning riches from dynamite may be unfounded. Let's just call Alfred Nobel an avowed humanist. The following lines from a letter illustrate this

point: 'If you only could understand that one can help another human being without thinking about oneself or having an ulterior motive! Among the Israelites, this happened to only one person, Christ. As a result of his uniqueness, people handed him a diploma from the gods.'

A diploma from the gods for the 'dynamite king'? Granted, without Nobel, there would never have been such useful projects to the human race as the Gotthard tunnel or the construction of canals and railroads. But, there also would never have been the devastating power of cannons and artillery shells if explosives had not been constantly improved. Of course, he realized that. In 1875, he spoke in London about the pros and cons of black powder, and described the ambivalence associated with it: 'In a mine, it is supposed to explode without developing a propulsion force. In a rifle, it is supposed to develop a propulsion force without exploding. But in a shell, it serves both purposes. And in a fuse, as in fireworks, it burns very slowly without exploding.' A servant of many masters, provided it is the right masters.

(...) While pacifists focused on the power of words and appeals, Nobel, the entrepreneur and inventor, believed in the power of his factories that were better equipped to bring an end to war. The Nobel Prize Foundation – What else was it but a serious attempt to promote peace?"

Author: Heribert Klein

Responsibility was always a central issue in the life and work of Heribert Klein, a musical scientist, an organist and a many-sided journalist who was the editor of ThyssenKrupp Magazine from 2003 to 2004. From 1987 through the end of 2003, he was a business journalist at the Frankfurter Allgemeine Zeitung. At the newspaper, he interviewed and wrote profiles about many major politicians and businesspeople. In February 2005, he died of cancer at the age of 47. ThyssenKrupp AG thanks Heribert Klein for his commitment and creativity. It will always hold him in respectful memory.

»TRUST IS THE DECISIVE FACTOR«

Gesine Schwan talks about public and corporate responsibilities

ThyssenKrupp_magazine: Do you have any understanding for the anti-capitalism debate that swept across Germany last year?

Schwan: I have a lot of understanding for this debate. The massive spread of globalization since 1989 has dramatically reduced the ability of nation states to shape the global economy. A factual and conceptual gap has emerged with regard to the restoration of a balance between economic momentum and political design. To date, this gap remains unfilled, and it is rather difficult to fill it because the nation state simply cannot be replaced as a political actor, e.g. by a world government or even by the European Union.

I believe that there is in principle no alternative to the capitalist economy. But the challenge of our time lies in the tension between economic and political liberalism. Economic liberalism, on which the market economy is based, regards people as production instruments and consumers. And when production instruments become too expensive, they have to be rationalized or dismissed. Political liberalism, in turn, demands that a person must never serve merely as an instrument, but must always be an end in itself as well.

These two points of view do not necessarily contradict each other, but they remain in conflict with each other. It makes no sense to demand that an entrepreneur abandon his business principles, but it would be equally wrong

to abandon the political concept because the economic system as a whole cannot survive over the long term without the political dimension. Another value also plays a role: that people consciously and responsibly participate in the political process.

The anti-capitalism debate is an expression of uneasiness about this fundamental problem and about a perceived discrepancy of opportunities in our society. If people's fundamental longing for justice remains unsatisfied for a long time, outbursts and revolts will be sure to follow. Another problem arises when capital investors no longer feel responsible for the union between capital investment and human labor that makes up a corporation. Or when capital investors' responsibility for a company's long-term well-being is torpedoed by stock market criteria that virtually demand short-term business management because companies' success is measured on a quarterly basis.

These days, global players are continually confronted with such issues as child labor, slavery, corruption or even just plain fraud, mostly via their suppliers. Companies encounter competitors who totally ignore generally accepted moral principles. How can companies deal with such situations?

Schwan: The tasks here are to help those companies that want to observe standards, to establish good governance structures and to train the necessary actors. Such good governance structures would be much more complex than those of a normal nation state. They would be found at several different levels – from traditional democratic constitutional structures through regional alliances such as the EU to international organizations, the non-profit civil society and government alliances. Rules must be formulated and agreed on at these levels to ensure that such things as child labor become impossible over the longer term.

The public plays a key role in ensuring that such rules are observed. After all, the word "responsibility" also contains the word "response." When it comes to the question of who is the target of my response when I assume or exercise responsibility, there have traditionally been three entities: a transcendental one – God –, a social one and a personal one – your own conscience. And at a time when the transcendental entity is losing its hold over large groups of society, the middle level plays an increasingly important role. You cannot simply make an appeal to the conscience of big corporations. You also have to ensure that the parameters allow them to act in line with their conscience. That means that the public to whom they owe a response is well informed and ready to condemn abusive actions by refusing to purchase the respective company's products. That's roughly my concept of a system that would allow companies that voluntarily avoid child labor and similar things to uphold their principles in a competitive environment. ►



mobilizing forces that I may not even feel in myself. On the other hand, people can overextend themselves morally. Thus, I think: Everyone must find a balance for himself or herself, always realizing that he or she will fall somewhat short in the end. Where does the boundary lie between the responsibility of the state and the responsibility of corporations? Must companies automatically assume responsibility for such things as the training of apprentices when the government-run education system does not satisfactorily carry out this task?

Schwan: First of all, I think it is the responsibility of society to

»Everyone must find a balance in helping others, always realizing that he or she will fall somewhat short in the end.«



► That means you would not consider the idea of global social behavioral norms in the sense of a global economic code of ethics to be completely utopian?

Schwan: Not at all. Since such rules on the global level are voluntary, ethical codes automatically carry more weight than those on the nation-state level, where a government can enforce types of behavior regardless of people's values.

You have taken an active role in efforts to educate young girls in Kenya. At the same time, Germany is wrestling with such serious problems as youth unemployment and child poverty. How can a person create a proper balance between helping his or her own country and helping other parts of the world?

Schwan: There is not just one single balance, and there is no hierarchy. Just think about the concept of loving thy neighbor as thyself. You should help your fellow man – that can be anybody who is far from you or somebody you encounter on the street. You have to make sure that you push your conscience as far as possible. But you shouldn't go overboard. I consider Kant's maxim – "You can do what you should do" – to be correct insofar as the authority telling me what I should do – my conscience – also is capable of

define what responsibilities it will assign to the public sector and the private sector or civil society. If the society does not want to give the state enough authority to fulfill its responsibilities in education, infrastructure, health etc., then the society itself – i.e. companies, too – must come up with a way to fulfill these obligations or it will have to live with the consequences. I argue that there are fundamental public duties that should not be privatized and that private initiatives should be strengthened nonetheless. For instance, I consider education to be a public responsibility because education is the fundamental pre-condition for just living conditions, which, in the end, will benefit society. Overregulation is bad. But when there are no regulations, we will face a long-term problem concerning justice.

Do companies have a social responsibility beyond the workplace?

Schwan: Yes, most definitely. Business people are obligated to take entrepreneurial steps to protect their business, i.e. to

ensure the long-range growth of their companies as best as they possibly can. A business executive should not view himself or herself simply as an administrator of invested capital. After all, a company also consists of a human organization that exists within it and the community in which it operates. And this latter factor includes not only legal conditions or the infrastructure but also things like the education system that works to teach the workers of tomorrow.

The creative, risk-minded preparation of a company to perform future tasks should be shifted closer to the center of the public discussion than has been the case. Entrepreneurial activity must develop a partnership with employees and strengthen the creativity potential in the company. In many areas of German society, however, an authoritarian approach to motivational psychology still holds the upper hand. The thinking is that people are most likely to get to work when someone tries to put the fear of God into them by talking about the consequences that they would pay if they remained the way they were. Entrepreneurial activities should not be so authoritarian. They should take risks and promote flat hierarchies so that all people feel called on to join in and appreciated. This is the only way for entrepreneurs to gain the loyalty of their employees.

Many employees realize that they will bear much more self-responsibility for social insurance programs that the state has borne up to now. Given the growing worries about the future, how can the appeal made by our national president for more courage, confidence and a general awakening in Germany have an effect?

Schwan: I really don't know whether the trend actually has to head in the direction of the state withdrawing further and further from social insurance programs. It would be better to have a healthy balance. After all, under capitalist conditions, there can never be perfectly safe private insurance – we have seen that when retirement funds have collapsed in the United States. It is clear that the entire social insurance system no longer will be supported by the collective solidarity of society in the foreseeable future. But I think we still need this solidarity for a partial support system that makes the remaining risk somewhat calculable. After all, people want – speaking in pure economic terms – to live securely. But if the state does not provide a social safety net, people will create their own private safety net by doing such things as saving their money. And when this happens, the economists start complaining about weak domestic demand. It is definitely possible that the relationship between public and private social coverage will swing in favor of private programs, but that should happen within reasonable limits.

You should keep one other point in mind: When you are unable to provide institutional safeguards within a society, you will have to try to have mental safeguards. For example, you can cut back protections against layoffs when you know that society rejects the notion of leaving people out on the street. There has to be a mental safeguard that prevents people from simply being abandoned. From on high, you cannot mandate courage. We will gain more courage in society only with a certain fundamental safety net. People on the edge of society

are no longer productive. Of course, there is also too much parasitism, e.g. when people coolly figure out that it makes more sense for them to draw unemployment benefit than to take a job. But the problem of the welfare state in a free society is that there is no such thing as absolute protection from abuse. And that brings us back to the mentality question: When the members of a society are concerned only about milking the system for all its worth, cutting as many tax corners as possible and what not, then the society cannot function.

In terms of Germany, I'm really not so pessimistic. But I do think that the public debate takes a wrong turn when it tries to bully people with such warnings as "things will get a lot worse." The only way that people will respond to such threats is by trying to batten down everything as tightly as possible. Let's assume for a moment that you were in charge of leading the German government. What would be your first steps aimed at getting Germany in shape to face the future?

Schwan: I don't think that there is one, two or five steps that could help us further at the moment. When I was running for the German presidency, I said with good reason that a special mission and a special opportunity were connected to this position. The opportunity was to put society in a position of being more cooperative and accepting of reforms by cutting through the thicket of ideological undergrowth. If we want to advance together, we first have to form a consensus on the challenges we face, the goals we have and the security we need. This is the only way that we can cut a path for reasonable solutions by the country's political leadership.

I'm still moved by the fact that so many people are willing to plunge into these complicated issues. In Germany, a lot of people are ready to embrace necessary change. This feeling must be strengthened, encouraged and mobilized. And you encourage people by taking them seriously. Trust is the decisive factor. ◀◀

The interview was conducted by Anke Bryson. | Photos: Frank Hülsbömer

Prof. Dr. Gesine Schwan

She was born in 1943 and has been a professor of political science who focuses particularly on political theory and philosophy since 1977. Schwan is a member of the Social Democrats' Commission on Fundamental Values, and has been president of the Viadrina European University in Frankfurt an der Oder since 1999. She was a candidate for the German presidency in 2004. Schwan is also a member of numerous advisory boards and commissions, and is the coordinator for German-Polish social and cross-border cooperation.

Just what does a “good company” look like? What is the crucial factor that creates a good reputation – business success or social commitment? Amid the intense public discussion about corporate responsibility in Germany, ThyssenKrupp AG asked itself a question in the early summer of 2005: What are the criteria that private investors use to judge a company? The assumption was that private investors did not look solely at dividends and stock prices. Rather, the thinking went, they would also increasingly demand that companies assume responsibility for jobs, training, innovations and investments. Polling institute tns infratest then developed a list of 75 characteristics that can describe a company. Half of these characteristics came from the area of “economic performance,” and the other half addressed the spectrum of “social responsibility.” A total of 500 private investors then offered their views on the qualities that

they considered to be most important in determining a company's reputation.

The result was surprisingly clear: “The assumption of social responsibility by a company actually plays a bigger role in shaping its reputation than its economic performance,” the market researchers determined. Among the 25 most important characteristics, 16 came from the area of responsibility.

The survey produced a clear expectation profile of how an “ideal” company should act: The most important factor is responsibility for jobs in Germany (cited by 71 percent of respondents), followed by the statement of “pursuing a long-term strategy instead of short-term profits.” Other important characteristics of a good company are investment in the training and professional development of its employees, the responsible use of natural resources, responsibility for Germany as a business and investment location, and the feeling that a company can be trusted.

The first characteristic from the area of business performance turned up in fourth place on the list with a respondent rate of 57 percent. But, even here, the desire for trust shaped the response: A company has a good reputation “when its name stands for quality.” Other desired characteristics are “good future potential,” a role as “an engine of the German economy” and strong innovative powers.

The first clear shareholder-value criterion – “when a company's value rises in the long run” – was ranked 21st, cited by about 38 percent of private investors. But nearly as many respondents demanded that “decisions should not be based solely on share-

THE ENTREPRENEUR'S OBLIGATIONS

What determines a company's good reputation?

Most frequent responses based on ranking to the statement "is crucial to me in determining whether a company has a good reputation."



Data in percentages
Source: tns infratest

Social responsibility in the company's view



Data in percentages, multiple responses possible
Source: Bertelsmann Foundation

holder value." The factors that are supposed to really interest private investors the most – an attractive stock price and an appealing investment for private citizens – were ranked in the middle of the list in 43rd and 44th place.

The investor as a "homo oeconomicus"? That is most likely a misconception. When asked about "corporate responsibility," many companies like to point to their support of the arts. But such efforts largely go right past the expectations expressed by the target group in the survey: Promotion of the arts ranked dead last in the study and was cited by only 3 percent of respondents. Ranking higher (29 percent) was the promotion of science and education at schools and universities. A company that assumes a "contemplative attitude" and that conducts a dialogue with the public can gain the support of every fourth person surveyed.

There was one other surprise at the bottom of the ranking: A company "that expands abroad" – takes advantage of globalization, in other words – and that "is completely different than it once was" – is more flexible and adaptive – is unlikely to do much to help its reputation. Conclusion: Private investors in Germany remain faithful to the ideals of the social market economy and to the concept of corporate social responsibility. Classic shareholder value and the principles of neo-liberalism were endorsed only by a minority of respondents.

The companies, in turn, recognize the challenge of adapting to the new competitive conditions created by globalization and assuming their social responsibility. This conclusion was reached by a Bertelsmann Foundation survey of 500 top decision-makers that was also conducted in the early summer of 2005 by tns infratest.

The executives consider the most important social demands to be responsibility for employees, the safeguarding of jobs and overall social responsibility. Two-thirds said they were convinced that the importance of social responsibility for companies would grow in the future.

The results have led to other questions: Do the values of the first survey reflect a rather low interest in economic interrelationships? Is an intense social-romantic view of the economy one cause of the "German disease"? Despite our export success, do Germans fail to grasp the rules of global competition? And despite the clear views expressed by top executives, are companies doing too little to assume their social responsibilities? <<<

The environment anno 1883

As far back as 1883, experts began realizing that humans' energy-production methods could harm the environment. In that year, Clemens Winkler, a chemist who was concerned about environmental problems, posed a question during his address at the second German Mining Convention that was held in

Dresden: "Does our mass burning of coal cause changes to the composition of the atmosphere?" Taking the point of view of the time, he dismissed the possibility as irrelevant. ("Waldsterben im 19. Jahrhundert" – The Death of the Forests in the 19th Century – VDI-Verlag, 1985)



The concept of **responsibility** appeared for the first time in the 15th century. It originated in judicial circles and was used in the sense of "respond." Responding meant "defending yourself in court." In this context, it was used as justification before the tribunal of God.



Cause and effect

A feeling of responsibility for the environment has led German households to dramatically reduce their water consumption in past years. This, however, also means that in many places the waste water system is no longer sufficiently flushed so that pipes are blocked by solid components that are normally flushed out with the waste water. This is why water-works regularly have to pump drinking water into the waste water system. The result: increased water prices and prospering pipe cleaning companies.

Wise words

Who said it?

1

“The price of greatness is responsibility.”

2

“You are responsible not only for what you do but also for what you do not do.”

3

“Liberty means responsibility. That is why most men dread it.”

4

“The fear of responsibility is the illness of our times.”

5

“Every time we make a decision, we think about the well-being of the seventh generation to come.”

Turn to page 97 to find out who made each statement.



25

“You cannot stop hoping that humans will come to their senses and behave in an ethically defensible way,” he said just before he died at the beginning of February 1993.

Just like his close friend Hannah Arendt, the son of a manufacturing family in Mönchengladbach used something more than his pen to fight totalitarian ideologies. After earning his doctorate under Martin Heidegger in 1928, he remained bitterly disappointed about his former professor’s leanings toward national socialism. In 1933, he emigrated via London to Palestine, where he joined an armed underground organization and became a militant Zionist. When he marched into Germany with the British Allies in 1945, he was able to keep a pledge that he had made to his parents: “I will never return, unless I’m a soldier in a conquering army.” By then, though, his father was dead, and his mother had been killed in Auschwitz.

While teaching at the New School for Social Research in New York, he complained about how “modern science leaves no room for reverence of the cosmic enigma and demystifies the world.” With his ethics of responsibility for the “continued habitability” of the world, he pointed to the world’s new vulnerabilities. Earlier, it was religion that raised the specter of the Final Judgment. To him, it was the “new global questions” that were threatening the planet. His attempt to create an ethical system for a technological civilization reads this way: “Act according to that maxim by which the consequences of your actions are compatible with the permanence of real human life on Earth.”

He had to wait until he reached a ripe old age before he became famous and his books gained a wide audience. He would have turned 103 on May 10 of this year.

Turn to page 97 to find the answer.

Anybody can make a mistake

Anybody who considers it his or her responsibility to help the human race progress can be totally wrong in his or her predictions. In 1932, Albert Einstein said: “There is not the slightest indication that we will ever be able to develop atomic energy.” In 1943, the chairman of IBM, Thomas T. Watson, forecast that five mainframe computers would be able to take care of all of the world’s needs. And, in 1957, Lee de Forest, the inventor of the cathode ray tube and a father of the electronic age, said that despite all of the progress, man would never be able to land on the moon. (www.planet-wissen.de)





»We live in a limitless world, limitless in our dependency
on the responsibility of others.«

Klaus Töpfer, Executive Director of the United Nations
Environment Program (UNEP)



A large, ancient tree with a thick trunk and dense foliage, standing in a grassy field. The tree's branches are spread wide, casting a shadow over the grass. The background is filled with more trees and greenery, creating a lush, natural setting.

»The impact of decisions made today is broader than ever before, both in terms of geography and time. The greater the freedom of decision, the greater the responsibility. The unique power of global corporations can be justified only if their actions contribute to the global good and do not restrict the freedom of future generations.«

Jakob von Uexküll,
founder of the Right Livelihood Award, also known
as the "Alternative Nobel Prize"

AN ENDANGERED TREASURE

A project called MOSE is designed to save Venice from suffering the same fate as Atlantis. Barriers anchored deep in the sea floor will help seal off the city from springtime flooding.





On winter evenings the sea, welled by a contrary easterly wind, fills every canal to the brim like a bathtub, and at times overflows them. ... The city stands ankle-deep in water. ... The pilgrim's shoe, having tested the water, is drying atop his hotel room's radiator; the native dives into his closet to fish out his pair of rubber boots. 'Acqua alta,' says a voice over the radio, and human traffic subsides. Streets empty; stores, bars, restaurants and trattorias close. ... Churches, however, remain open, but then treading upon water is no news to either clergy or parishioners." The words from Joseph Brodsky's grand book about Venice, *Watermark*, may bring a smile to readers' faces. And tourists who experience acqua alta in the city may think the flooded canals and piazzas are just the sort of attractions that really make the trip worthwhile. But acqua alta is a curse for the Venetians who have to put up with the flooding year in and year out. And it is a plague for the historic buildings that form the heart of the city. People have gotten used to the pictures of local residents walking along elevated boardwalks at Piazza San Marco. Oddly enough, the scene that turns the salon of the Serenissima into a hall of mirrors does not seem to be so threatening. It actually looks pretty photogenic. Catastrophic floods happen elsewhere. When Venice goes underwater, the floods increase the morbid charm of this city, which is drawn more to the sea than to the land anyway.

The overwhelming presence of the water, the symbol of Eros, birth and death, underpins the myth of Venice that artists never tire of painting. For Gustav Aschenbach, the protagonist of Thomas Mann's story *Death in Venice*, the city of the lagoon becomes a fatal attraction. Against his better knowledge, he remains in Venice, the object of his yearnings and his phantasmagoria: "The atmosphere of the city, that faintly fetid odor of sea and swamp he has been so anxious to flee – he now breathed it in, in deep, delicately throbbing drafts. ... What he found so hard to bear and even utterly intolerable at times was clearly the thought that he would never see Venice again, that this was a farewell forever."

The American author Harold Brodkey fell victim to the lure of the Serenissima as well: "Venice is a separate country. It floats at anchor inside its own will, among its domes and campanili, independent and exotic at its heart."

The city breathes with the tides

But "the most unlikely city," as Thomas Mann described Venice, can no longer simply rely on its own will. It has lost its independence. And instead of protecting its treasures, it seems to be sinking before its admirers' very own eyes. Many of the magnificent piazzas and churches look as though they are about to slip into a coma. The water is lapping away at the foundation and is threatening to dissolve the dreams made of stone.

"Save Venice!" – this appeal has become a myth, just like the city itself. After all, it seemed to be doomed for so long. The citizens failed to realize the seriousness of the situation. They could not or did not want to agree on a series of measures to rescue the city. Venice is visibly sinking into the mud. Today, it is a troubling 69 centimeters deeper than it was 250 years ago. Tectonic processes are playing a minor part in this process. The bigger problem is human interference and carelessness, both of which have disrupted the lagoon's extremely delicate ecosystem. A variety of causes is at the root of a problem that humans are now trying to stop with a gigantic technical outlay.

Venice is literally built on sand – gravel and clay sediment from the Alps that has been carried by the Brenta, Piave und Sile rivers for centuries to the lagoon and has created a group of 118 islets. A series of dunes has risen in front of the open Adriatic, throwing up a wall of protection from the sea's tides to the city and the lagoon. The biological balance of the lagoon has always been a fundamental basis of the city's prosperity. It is based on the constant interplay between the waters of the Adriatic and the mainland: The tide that washes in and out of the estuaries of Chioggia, Malamocco and Lido feeds the lagoon with nutrients and washes the city's waste out to sea. "The high tide usually arrives twice a day, and the low tide brings it out again twice a day, always using in the same route and in the same direction," Goethe wrote in his *Italian Journey*. "It would be completely different if the sea took other routes, attacked the tongues of land and flowed in and out wherever it chose."

Several phenomena must come together before ► parts of Venice will slip under water. The scirocco, a southerly wind that blows between October and March,

»Anyone who dares to harm the public waters will be treated as an enemy of the fatherland.«

Edict of the Sea Republic of Venice, 16th century

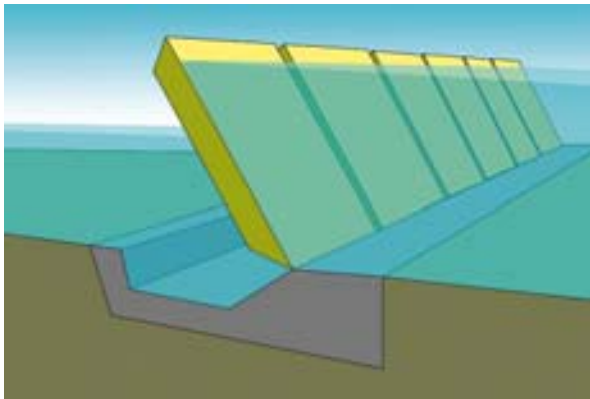


drives large tidal waves into the lagoon and prevents the water mass from flowing back to sea. To stop the water from rapidly rising, the water flowing into the lagoon would have to be able to spread out. But the water is unable to do so because the widespread construction along the coastal area has eaten up more and more space. One other factor is at play as well: Even more water can surge into the area than before because the shipping lanes for tankers have been dredged. If fresh-water rivers also reach flood stage, the canals of the city will swallow steps and stairways, and turn piazzas into ponds.

Climatic change raises water levels, too

Venice's amphibious existence poses a big enough problem in and of itself for the city, which was added to the UNESCO World Heritage List in 1987, even without its heavily symbolic acqua alta. The smallest of the problems caused by the city's location is the sinking of the old palaces whose weight considerably increases the static pressure on the ground. What really worries Venetians is the rising sea level associated with global warming. The "relative sea level rise," which was measured with instruments for the first time in 1872, has reached 30 centimeters.

Finally, Venice's gradual descent into water is the result of uncontrolled exploitation of nature. For decades, the industrial conglomerates of Marghera and Mestre have pumped out the groundwater under the lagoon. Toxic waste still fills the lagoon and is gnawing away at the wood piles on which Venice has stood for centuries. The waves churned up by the overabundance of motorboats that speed along the Canal Grande and its branches leave their mark, too. A drive to systematically clean up the canals was begun only in 1997. This was a project that was regularly done in the times of the Doges. For centuries, the Venetians have given the highest priority to the protection of the lagoon. As far back as the



▲ If flood conditions develop, the gates are raised to form a protective wall against the swelling Adriatic waves.

13th century, the so-called Water Councils passed laws on the issue. "Anyone who dares to harm the public waters will be treated as an enemy of the fatherland," according to a later edict of the sea republic, which was as serious as it sounded.

Venice's rise to a sea and trading power began with the conquest of Constantinople in 1204. The city became one of Europe's most important trading centers: Sugar from Cyprus; wine and oil from Greece; cotton, silk and spices from overseas formed the basis for the immense wealth of the Serenissima, who was able to successfully defend its claim to power against its major rival, Genoa. At the start of the 15th century, 3,300 trading ships were sailing under the Venetian flag, and the republic controlled the entire Mediterranean. The sea power's backbone was its arsenal in the eastern district of the city called Castello. In a huge, fortress-like shipyard that was considered to be the first industrial operation of the modern times, thousands of workers constructed every ship that guaranteed Venice's dominance. But the powerful sea republic was unable to keep up with modern times. In 1498, Vasco da Gama discovered a sea route to India and brought back 5,000 baskets of pepper. Lisbon then became the decisive power in spice trading. Traders from Portugal, Great Britain and the Netherlands were the new rulers of the seas. Venice's trading monopoly crumbled, and its star as economic power began to fade.

Bulwarks against flooding

Up until recently, the city built on silt and wooden piles that oscillates between stone-hardened history and timeless beauty was in danger of failing to recognize the signs of the times. But officials have acted and created an ambitious project that is designed to prevent Venice from suffering the same fate as Atlantis. The project is called MOSE. The acronym stands for "Modulo Sperimentale Elettromeccanico." It is a gigantic effort in which ThyssenKrupp GfT Bautechnik is playing a major role.

The MOSE project will use barriers anchored deep in the sea floor to block the lagoon entrances during tidal surges. During normal water conditions, the water-filled gates will lie flat on the sea floor, invisible from sight. If flood conditions develop – when the tide rises more than 115 centimeters above sea level – air pressure will be blown into the steel gates. Within an hour, the gates are to be pumped empty and raised to form a protective wall against the swelling Adriatic waves. Without the system, the deepest sections of the Piazza San Marco are soaked when the water climbs to 80 centimeters. One-third of the city's alleyways are covered when it climbs to 120 centimeters. Based on current water conditions, the retractable dikes would have to be closed for a few hours only 10 to 20 times a year. If the sea rose faster than calculated, the situation would be completely different.

The system of barriers consists of 79 floodgates that are to be completed by 2011. ThyssenKrupp GfT Bautechnik is providing materials and machine technology as well as



The lagoon of Venice
with its estuaries

Sheet pile wall

Sheet pile walls are profile panels made of sheet steel that are driven into the earth and anchored to each other to create a stable wall of steel. Sheet pile walls have been used for more than 100 years particularly in harbor construction. Another exemplary product can be inspected on the island of Tresse. Since an open landfill was completely isolated with 3,400 tons of material here, many canals, including the Canale Industriale Sud, have been sealed off with sheet pile walls.

technical and logistical know-how. To ensure that operations between such units as production and processing run smoothly, skilled interface management is required. "We provide the planning support, the sheet pile walls, the pipes and the anchors as well as do the processing, the coating and the logistics," Tilo Quink says in describing ThyssenKrupp's responsibilities. "The pipes alone are 1.5 meters in diameter, are 37 meters long and weigh 32 tons each."

The delivery of such big and heavy construction elements is a logistical masterstroke – and it is even more impressive because an exact schedule has to be kept. ThyssenKrupp is delivering 15,500 tons of steel for the construction of new locks at

Bocca di Malamocco, one of the three estuaries that are up to 1.6 kilometers wide. The locks will enable ships to travel through the lagoon.

It will take six more years before Venice can seal itself off whenever it would like. Then, the Venetians will be able to leave their rubber boots in their closets. And the clergy may have to look for other miracles. <<<

Author: Margit Uber | Photos: Bilderberg, LOOK, Agentur-Focus, Consorzio Nuovo Venezia

Survival triumph of the strong individual” is how the writer and sociologist Herrard Schenk describes the ability of the shipwrecked character to avoid being eaten by the animals on a lonely island far from civilization and to set himself up comfortably during his nearly three-decade-long, involuntary stay. Unlike Robinson Crusoe on his lost island, humans have become increasingly dependent on the achievements of civilization, with its technical innovations and complex, multi-labor economy that has grown into a global network. Fears arise, and people confront them with “fantasies of self-sufficiency,” as Schenk calls them. These dependencies manifest themselves particularly in the area of energy. Without energy, no economy can function, no machine or process can run, and no cars and trains can roll. Showers, stoves and heating systems would remain cold. Coal, natural gas, oil and especially oil were the dominant sources of energy for years – each finite and unequally distributed around the world.

This dependency emerged into plain sight during the 1970s, when the first oil price crisis occurred and dealt the world its first energy blow. Since then, energy costs have risen. “Having to depend on others, in this case the countries without oil reserves on the oil suppliers, creates a feeling of being susceptible to blackmail. There are still enough

THE DREAM OF SELF-SUFFICIENCY

domestic fossil fuels, anthracite and lignite, to last for more than 100 years. But the reserves cannot be used without limits by today’s technology because of the damaging CO₂ emissions,” says Professor Joachim Luther, head of the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg. Their use is also restricted by another aspect – the cost effectiveness of mining them depending on the price of competing energy sources. The 64-year-old scientist knows very well that oil crises and fear have done something more than feed fantasies of self-sufficiency. In fact, they have also fueled research into the alternative ►

It's nice when you can enjoy pure energy: Iceland has an abundance of geothermal power.



energy sources of wind and sun. Necessity is the mother of invention. For 25 years, Luther has been exploring solar energy with one goal in mind: to make such energy systems marketable. "As a result, cities and countries are not supposed to be completely self-sufficient, that is totally independent like an island. Given the current infrastructure with such things as power grids, it would be crazy and much too expensive. But, we must develop the technical basis for effective and environmentally friendly energy supplies in industrial countries as well as in emerging nations and developing countries."

On the way to reaching this goal, Luther's institute has already made some tremendous strides in solar energy, including top production levels, world records for the efficiency of solar cells as well as the introduction of new energy-conserving building concepts.

A project being carried out on Utsira, an island in southwestern Norway, has a much higher goal. Researchers are striving to obtain true energy self-sufficiency. The roughly 200 residents on Utsira are trying to figure out how well they can live after they are disconnected from the power grid and have to rely on two wind turbines.

In Germany, Fürstentum County is not working to gain complete independence from classic electricity producers. Instead, it wants to make an energy about-face. "We want to produce our own electricity and even generate a surplus that we can feed into the grid for a price," says Birgit Baidl, the official directing the project in Fürstentum County. The goal is to cut energy usage in the county by 50 percent, to boost energy efficiency and to use all forms of renewable energies.

"We want to reach a point where the county completely uses renewable energy sources by 2030," according to the program's agenda. Besides solar-energy roofs, the project aims to use all renewable sources available in the area, including biogas produced on farms, trash and, last but not least, biomass made from wood and plant oil.

A clean, self-directed effort

The plants of ThyssenKrupp Steel AG in Duisburg fit nicely into such efforts as well. At this traditional steel-making location, the energy needed for the manufacturing process is made on site from waste products. In addition, the environmentally damaging flaring of production-related gases is being avoided. The foundation of this high-tech solution is an integrated smelting plant that includes a coking facility and two power-producing units. The power plant units churn out a total of 750 megawatts, and this electricity is fed into the company's own steel-production operations.

Dr. Michael Joks, responsible for energy and plant management at the site, describes the concept this way: "Our integrated smelting plant is considered to be one of the world's biggest and most advanced of its type and, in terms of energy utilization, the most effective." It is based on an alliance among the Duisburg production areas in the Bruckhausen, Beeckerwerth and Schwelgern plants. And it ensures that little electricity or gas has to be purchased from external suppliers, which is not the case at the electric-furnace steel plants or mini-mills.

"We get just 8 percent of our gas from outside suppliers. For electricity, we are 95 percent independent of external suppliers. In addition, the company's energy alliance generates so much electricity that ThyssenKrupp Steel can even sell some of it to the public grid," says engineer Jürgen Hoffmann.

This degree of self-sufficiency in the integrated smelting plant outfitted with power-producing units is the result of a sophisticated system of process engineering, process combinations and energy-conversion



Because the alliance's systems have boosted energy efficiency so much, excess capacities can even be fed into the public grid.

steps. And the process relies on the coke and coal that are already available on site for production: as raw materials for the coking plant, the sintering plants and the blast furnaces that, in the end, churn out 11 million tons of pig iron – the latest yearly production figures at this site.

Gases as energy suppliers

The heart of this efficient energy dream is gas. Three varieties of it: coking-oven gas, blast-furnace gas and converter gas. These gases, known as unavoidable gases because of their makeup, are produced as part of the steel-making process. But instead of sending these gases up a smokestack and burning them, they are now being processed as energy suppliers. They could be in the form of fuels or converted into electricity and process steam – with the primary goal of producing high-quality flat steel in a cost-conscious and environmentally friendly way that can be used to create such things as cars, home appliances, cans and construction parts for customers.

This, of course, is not a self-contained system in the truest sense of the word because it is dependent on coal and coke. "But it is an integrated, intelligent and efficient system that works like a cascade and uses the created energy during every step," the energy researcher Luther says.

Comparatively speaking, blast-furnace gas has a rather poor net calorific value and, as a result, is used primarily for undergrate firing in the coking plant. The high-calorific coking-oven gas is piped to production facilities that operate at high temperatures. Converter gas has a mid-range calorific value and helps maintain the correct temperatures in processing facilities like the reheating furnaces of the hot-strip mill.

Blast-furnace gas is fed into four gas-expansion turbines that convert its pressure potential directly into electricity. In this process alone,

Oversight of energy usage and distribution requires a high level of expertise.



nearly 300,000 megawatt hours are produced each year. A ramified process-steam network is also supplied by the heat recovery boilers in the steel mills. Gaps in the supply are filled by power-plant cogeneration. This power heats the pickling baths in the coating plants. Other steam is used to produce hot and cold water, and even runs the heating and air-conditioning units at the site, including the offices. And there is still enough energy left over for the district heating supply of Niederrhein. As a result, 25,000 apartments can be heated.

A total of 800 experts monitor the distribution of energy and the use of the diverse media – above all gases, but also steam, pressurized air, water and, of course, electricity.

The striving for independence today is accompanied mostly by efficiency increases and improved environmental protection – and so it is here. For the processes in the Duisburg energy alliance are not only low in sulfur and CO₂. CO₂ emissions are actually reduced because residual energy is exploited systematically and efficiently, meaning that additional CO₂ emissions elsewhere can be avoided.

The energy and plant management has already made tremendous strides in its work on energy self-sufficiency. But the group is still not satisfied. “We want to cut the 8 percent share of natural gas some more,” Joksch says. The idea of being self-sufficient like Robinson Crusoe, however, remains a dream. <<<

Author: Ulrike Wirtz | Photos: laif, Dieter Rüchel

A comparison of energy sources

The importance of recovery systems becomes clear when the scope of conventional energy sources is presented in an overview. The information on “reserves” refers to technically exploitable resources. “Resources” are considered to be reserves that are verifiable and geologically possible but that cannot be economically exploited at the moment.

Crude oil

Reserves: until 2043

Resources: until 2067

Crude oil/oil-bearing substances

Reserves: until 2062

Resources: until 2157

Natural gas

Reserves: until 2064

Resources: until 2149

Natural gas/fuel gas substances

Reserves: until 2064

Resources: until 2766

Hard coal

Reserves: until 2207

Resources: until 3425

A CLIMATE SAVER THAT'S GOOD FOR BUSINESS

CO₂



CO₂





CO₂

2 008201 220140

With an innovative process, a responsible company ensures that the nitric oxides that are responsible for acid rain and smog, the greenhouse effect and the depletion of the ozone layer are removed almost completely from the emissions of nitric acid plants – with a positive impact on the environment and business.

Sir Humphry Davy didn't live to a particularly ripe old age. That's because he had a nasty habit: He liked to sample and sniff all sorts of unknown chemicals. As a result, the English chemist died in 1829 at the age of 51. But his joy of experimentation did produce some important findings. During one of the experiments he conducted on himself, Davy discovered the anesthetic effect of laughing gas. After inhaling the gas, he said he experienced "exhilaration," wanted to laugh and was flooded with ideas. Within just a few years, N₂O had become the laughing stock of annual fairs. For a century, laughing gas had a largely positive image. But that changed suddenly when scientists realized in the 1970s that N₂O is a particularly potent greenhouse gas. Even though the concentration of the gas is nearly 1,000 times lower than that of carbon dioxide, its greenhouse effect is about 300 times as powerful. It continuously rises into the atmosphere – as nitrogen fertilizers decompose and biomass is burned – and accumulates there. Laughing gas contributes about 5 percent to the greenhouse effect. To make the situation worse, the sun breaks down laughing gas in the upper levels of the atmosphere into molecules that attack the ozone layer. ►



Winner in the Innovation Contest 2005

Michael Groves, Meinhard Schwefer and Rolf Siefert (from left to right, outside the nitric acid plant in Linz) received the first prize in the ThyssenKrupp Innovation Contest 2005 for their EnviNOx® process. The innovation contest is being held for the seventh time in 2006 and awards successfully implemented ideas from various areas of the company. The most likely prize winners are solutions that help create new or improved manufacturing technologies, products or services.

Major sources of laughing gas include nitric-acid production facilities. Each year, more than 300 such facilities around the world spew out about 400,000 tons of N_2O in their waste gas – the biggest share by far of industrial laughing-gas emissions. Nitric acid, HNO_3 , is an essential ingredient used to produce various fertilizers and plastics. Glittering facilities produce nitric acid from ammonia, air and water. The ammonia is heated to form nitric oxide. In high towers, water rains down on the nitric oxide, producing nitric acid.

The production of one ton of HNO_3 creates about seven kilograms of laughing gas as an unwanted byproduct. It escapes into the atmosphere with the waste gas. But Uhde GmbH, a company that builds nitric-acid and other industrial plants around the world, thought that was just too much. Within the space of just three years, a small team from the Dortmund subsidiary of ThyssenKrupp developed a completely new industrial approach to eliminate laughing gas – the EnviNOx® process. The first industrial-sized facility has been in operation at AMI Agrolinz Melamine International in Linz, Austria, for two years.

One catalyst, dual effect

“When I came to Uhde at the end of the 1990s, the issue of laughing gas was floating through the air,” Dr. Meinhard Schwefer remembers. The Kyoto Protocol, the international agreement designed to cut emissions of greenhouse gases, was being written at the time and the issue of environmental protection was on everyone’s mind. “We knew we had to tackle the issue of laughing gas,” the EnviNOx® project head says. Schwefer is a chemist and an expert in catalysts, those molecular pace-makers that accelerate chemical reactions without using themselves up in the process. He realized that he would have to find the right catalysts if he wanted to break down laughing gas into its harmless components before it left the nitric-acid plant – as nitrogen and oxygen.

He found what he was looking for at a conference where a researcher was presenting an iron-zeolite catalyst. Laboratory tests had shown that the crystalline substances could destroy laughing gas. The key point: They need other nitrogen oxides (NO_x) in order to work optimally. Schwefer realized one other thing at once: These NO_x nitrogen oxides are in the waste gas of nitric-acid plants. Since the middle of the 1980s, they have had to be removed from the waste gas with the use of special cleaning methods because they produce smog and acid rain. These catalysts could therefore do two things at once: They could attack laughing gas and NO_x nitrogen oxides at the same time. The Austrian partner was willing to install an experimental plant.

Together with his colleagues Rolf Siefert and Michael Groves, Schwefer built a test container the size of a construction trailer directly under the steel, 60-meter-high nitric-acid tower. It is still there today and is crammed full of measuring instruments – a small, unassuming hut filled with testing and analysis equipment worth about 1 million euros.

The only requirement was that the new cleaning module would not affect the production of nitric acid in the slightest way. That meant that the only course of action would be to remove the nitric oxides directly from waste gas that was more than 400 degrees Celsius. The researchers had to find a very active iron-zeolite catalyst that could take the heat. In the container, Schwefer, Siefert and Groves began to systematically test all sorts of iron-zeolite catalysts – in two stainless-steel reactors that were about the size of a thermos. Using a small duct, the experts diverted some waste gas and let it flow over the catalysts in the reactors. Every substance was tested for about a week at various temperatures, pressures or gas speeds. Finally, the researchers

reached their goal. An optimal zeolite catalyst from Süd-Chemie AG in Munich was capable of reducing more than 90 percent of the laughing gas and NO_x nitric oxides at the same time – and within an unusually wide temperature range.

The cooperation partners in Linz liked the idea and decided to build the first industrial-sized EnviNOx® plant. The construction of the major laughing-gas cleaning plant began roughly a year after the test phase started. About nine months later, the EnviNOx® reactor went into operation in September 2003. Today, about 120,000 cubic meters of waste gas flow through the two catalytic steps in the tower every hour. A major portion of the laughing gas is destroyed in the first step. The remaining laughing gas and the NO_x nitric oxides are eliminated in the second step.

Every year, the EnviNOx® plant cuts N_2O emissions by more than 2,000 tons. That would amount to the emissions of about 400,000 new diesel cars that drive 10,000 kilometers a year. In terms of their greenhouse impact, 2,000 tons of laughing gas equal nearly 600,000 tons of carbon dioxide. That is a huge amount for one single industrial plant.

Lucrative emission clean-up

It is not surprising then that the climate-protection commissioner in the Austrian state of Upper Austria took notice of the EnviNOx® reactor. By joining the Kyoto Protocol, Austria has pledged to reduce its emissions of greenhouse gases by 13 percent between 1990 and 2012. Austrian industry must cut 1.25 million carbon-dioxide equivalents even as it boosts production. With 600,000 tons, the plant in Linz produces nearly half of the required industrial savings by itself. In recognition of this success, the climate-protection commissioner of Upper Austria, the engineer Andreas Drack, awarded the “climate saver” prize to AMI in 2003. “This is clearly the largest single reduction activity for climate protection designed to help Austria reach the Kyoto target,” a statement said.

Schwefer, however, is thinking about the business potential of the EnviNOx® process. That is because the Kyoto Protocol also includes global emission trading, an activity that began in 2005. Under this portion of the agreement, a country has to cut half of its greenhouse gas emissions through its own efforts – possibly through the use of more efficient power plants. The second half can be covered through the purchase of so-called certificates. A company that is emitting too much greenhouse gas can buy the certificates, a type of environmental coupon, from a country that exceeds its greenhouse gas targets. That means that the industrial operation has to pay for its excessive emissions.

Schwefer says: “For many years, waste-gas cleaning was an unpopular matter because it basically just eats up money. But the certificate trading suddenly made it economically worthwhile.” Most of the nitric-acid plants are located in countries that have a high demand for fertilizers – in India, China, Russia or Egypt. “By installing EnviNOx® technology, plant operators in these countries could secure another



▲ The EnviNOx® technology has been in operation in Linz, Austria, for two years.

source of revenue at very little expense,” Schwefer says. He adds that it is much easier to save huge amounts of greenhouse gases through laughing gas cleaning than through other technical efforts to reduce CO_2 .

Even though the catalysts in the Linz laughing gas tower have been working successfully for more than two years now, the research is continuing. Schwefer and his colleagues are still diverting waste gas and directing it through test reactors in their container.

No so long ago, they made changes that allow the process to work extremely well below temperatures of 400 degrees Celsius. The proven catalysts do not work at the same consistency when the temperature falls below this level. But the waste gas of many HNO_3 facilities reaches a temperature below 400 degrees. Schwefer, Siefert and Groves have come up with a solution that will enable nearly all nitric-acid plants to eliminate laughing gas. That is worthwhile because the HNO_3 factories of the world pump out a total of 400,000 tons of N_2O every year – as much as 120 million tons of carbon dioxide. ◀◀◀

Author: Tim Schröder | Photos: Ingo Bach, Uhde GmbH

Use of nitric acid

Nitric acid is used mostly (about 80 percent) for the production of ammonium nitrate, above all for fertilizers. About 10 percent goes to the production of adipic acid, among others for nylon synthetic fibers, and 5 percent each to nitrobenzene and nitrotoluene, which are used in soft and hard foamed plastic.

Because there seems to be a limit to the human capacity to concentrate and react, the cars of tomorrow are being designed to assist drivers in every way possible. In order to aid the environment as well, vehicles must become lighter and, as a result, produce lower emissions. Nowadays, developers are tinkering with sensors that automatically activate the brakes when a child crosses the path of a car, and cruise control that automatically determines the distance to the preceding driver. The car of the future is designed to prevent accidents or – if unavoidable – to protect the people involved as best as possible. This is one of the tasks of LIZA, the lightweight construction and innovation center for automobiles.

The glass walls of the 160-square-meter office are transparent. But an outsider's view into LIZA's den reveals little. The rectangular room, crowded with desks and computers, looks suspiciously mundane for an innovation center. But looks can be deceiving. The treasures hidden here are the ideas, which are safely stored in the heads and hard

SAFE KEEPING

In 1888, a motorized tricycle was advertised with the slogan, "Always ready to run! – Comfortable and absolutely safe!" Of course, there is no such thing as absolute safety, a fact that is shown by the more than 2 million accidents that occur on German roads alone each year.

drives of the 10 employees who work at the center in Bochum, Germany.

LIZA was opened in January 2005. Ralf Sünkel and Peter Seyfried lead the team of inventors. Both of them are engineers – like most of those here – and they exude enthusiasm when they talk about the 14 projects they have in the pipeline. The first secrets are scheduled to be unveiled in the spring of 2006.

As a "think tank," LIZA has the material and application expertise of ThyssenKrupp Steel as well as the processing and production know-how of ThyssenKrupp Automotive. Because LIZA is financed by both ►



▲
The heads of the 'think tank': Dipl.-Ing. Peter Seyfried (l.) and Dr. Ralf Sünkel (r.) are optimistic about the future of LIZA.

► company segments, the developers work independently from customer orders. “We don’t develop what the customer wants, but rather what the customer needs,” Seyfried says. This, however, does not mean that they ignore market demands. “It doesn’t help if you have a great idea or a great concept when nobody is going to buy it,” he adds.

These market demands include safety, which plays an increasingly large role when customers choose a new car, and conservation of natural resources. Currently, the developers are working on, among other things, a solution that will reduce the risk of death and injury to pedestrians in the event of an accident (see box). LIZA is also developing lighter materials for automobiles to reduce fuel consumption and, as a result, emissions. “We are showing that environmentally friendly technology, driving comfort and car safety are not a contradiction in terms,” Seyfried says.

To increase the chances of success, management carefully selects the most promising ideas from a large number of suggestions gathered at so-called idea workshops, among other places. The initial work is done on the computer. Virtual models are tested for weight and durability, and various grades of steel and construction methods are applied. Team members also regularly visit the company’s own production centers, consult with the engineers there and study existing models.

When the concept is complete, LIZA converts it into a prototype solution in a vehicle. Then, the market potential of the product is assessed by LIZA and the customer teams of the operating units through direct client contact. If the product has sufficient potential on the open market, then the customer teams customize it for the individual automobile manufacturers and prepare it for production.

According to Seyfried, LIZA’s innovative solutions should be completed by the time the automobile manufacturers begin the preliminary development phase, or around five years before the start of production. As a result, it takes patience before one can judge whether a project will be financially successful. New technologies need anywhere between three years and 15 years before they make their mark on the automotive sector. “The success of LIZA projects is then realized in the operating units,” Sünkel says.

In the meantime, the engineers are already fiddling around with their next project. “We can never really say that we are totally done developing. We have to be the masterminds behind the products of tomorrow. Particularly in the car body, there are still many areas that are critical to car safety that need to be optimized,” Seyfried says. ◀◀◀

Author: Aaron Kirchfeld | Photos: Oliver Rüter



Safe streets for pedestrians

One of LIZA’s first projects is to reduce the risk of injury to pedestrians in the event of an accident. According to the European Union, one-fifth of all traffic fatalities in the EU member states involve pedestrians hit by vehicles. Nearly 80 percent of these fatalities are caused when the pedestrian’s head hits the hood or windshield. In October 2005, the EU introduced a new directive that requires vehicle manufacturers to meet specified standards for vehicle-to-pedestrian collisions. The goal is to reduce pedestrian deaths by half by 2010. A second set of regulations is also planned for September 2010. Currently, two types of solutions – passive and active – are being used or tested in the industry. LIZA is concentrating its efforts on developing an active solution.



▲ Developing concepts for the future of automobiles: Dipl.-Ing. Andreas Untiedt (top left), Dr.-Ing. Ralf Polzin (top right), Dipl.-Ing. Andreas Breidenbach (bottom left), and Sandrine Jourdan (bottom right) at work in LIZA.

Active solutions:

Active solutions for car safety help avoid accidents. These are used in vehicles that do not have sufficient space between the hood and the engine block, among others. One strategy is to equip vehicles with sensors that detect an impending collision with a pedestrian and then activate a mechanism – a spring of some type or pyrotechnics – that lifts the hood to create sufficient space between the engine and the hood. Other active solutions include external airbags, but this option is still considered too costly.

Passive solutions:

Passive solutions for car safety help reduce the severity of injuries, e.g. through sufficient clearance between the hood and the engine block. Studies have shown that pedestrian head injuries are significantly reduced if there is at least two to three inches of space between the hood and the engine. Other passive solutions include more flexible hoods, which absorb the impact better and as a result reduce injury.





NOT STRANDED

South India a year after the devastating tsunami. A visit to the area reveals one thing: The fear has not yet disappeared – completely. But the future appears promising. Offering help to self-help, relief organizations like Germany's Kinder-nothilfe are making sure that people will be able to rebuild their lives themselves.



A fisherman who is afraid of the water. It is a fear that has been welling up in V. Ramachandiran since December 26, 2004. Every day since, he has to fight the feeling, this latent unease, when he heads out into the Gulf of Bengal. But he has no choice because he has to feed his wife and nine children. Four of them are orphans, the children of his sister who did not survive the same tsunami that is the root of the fear that still haunts him. "She lived right over there," Ramachandiran says and points to a knee-high collection of bricks and concrete where a house or hut most likely used to stand. The beach in Chendrapadi, a fishing village on South India's eastern coast, is no setting for vacation catalogue pictures: It is littered with debris, piles of branches and the carcasses of fishing boats left behind by the giant wave. The water drove the simple canoes, really just logs that have been lashed together, hundreds of meters from the beach and into the heart of the village. In the weeks that followed the storm, though, the village's fishermen did not have to rebuild their vessels. That is because so many colorful, roomy and stable wooden boats, bearing such signs as "Salvation Army" and "Hessen hilft" (Hesse helps), arrived in the coastal region of India's Tamil Nadu state after the sea-based earthquake and tidal wave struck. In fact, the number of replacement boats was so large that not all of them are being used.

Long-term aid with employee donations

Ramachandiran soon received one of the new boats as well. But there is something more than boats that is needed to bring tranquility and a new routine to the village where 143 people were killed by the tsunami. This is a mission that has been taken on by the St. Joseph's Development Trust (SJDT), one of the biggest non-denominational and independent non-governmental organizations in South India, that is working jointly with the Kindernothilfe, a relief group for children in Germany. The trust's projects in the districts of Kanyakumari and Nagapattinam are being financed by ThyssenKrupp. This is where the funds donated by ThyssenKrupp employees during the February 2005 fund-raising

Sustainable aid means promoting own initiative.

drive "An Hour for Asia" are being put to work. The money that came from the employees' paychecks and additional funds donated by the company itself is flowing into regions where poor farmworkers and fishermen from the lower castes live.

"Before we launched this project, they were just sitting around at home," says Brother I. Sebastian, the executive director of the SJDT. "Now, they have jobs again and can feed their families." In cash-for-work programs, above all farmworkers and small farmers are being paid with the donated money to rebuild the foundations of their lives. Their fields were flooded by the wave. They lost their crops, and they cannot plant new crops in soil that has been contaminated by salt. With the assistance of experts, they are repairing streets and paths, are cleaning and desalinating ponds and canals, and are building wells and reservoirs. It took longer to motivate and teach the local population than it would have taken engineers flown in from industrial nations to do these jobs. And enough donated money would have been available even to pay for these engineers. But the aim of the work is to help the ►

52 people take responsibility for their own lives again. Many of the small farmers and agricultural workers, most of whom lease plots measuring less than a hectare from major landowners, missed out on the first relief and compensation payments that were distributed after the catastrophe. "We were told, 'No one was killed in your village. So, you won't get any aid'," says the farmer Jayerkelin. Finally, the Indian government came up with some rice and a few rupees. But Jayerkelin and her husband still had no jobs. Their fields were salinized, and they do not have any seeds. When the wave hit, Jayerkelin ran for an entire day without stopping. "We didn't even dare to look back," she says.

New jobs for the untouchables

In the village of Ananthamangalam, agricultural workers are building a reservoir as part of the cash-for-work program. But when the subject of compensation for the lost crop is brought up, a heated discussion begins. Once, government employees stopped by, but the landowners stepped in, they say. "Don't give them anything. They will just get rich and won't work for us anymore," A.J. Kennedy, an engineer directing the reservoir project, says in describing what the landowners are saying in Tamil. He says his own village suffered only light damage. But he says that when he saw most of the immediate relief money going to the fishermen, he decided to do something for the farmers in Nagapattinam. "It is not because they were less affected," he says. "They are dalits."

The farmers are something that Mahatma Gandhi called "harijans," the children of God. But to many Indians in the upper castes, they remain what they always were, even though the Indian constitution bans all forms of discrimination: the untouchables, or dalits, the suppressed, as the members of this group that even falls below the lowest caste call themselves.

"Nobody helped us," says one of the farmers in Ananthamangalam and adds that the major landowners even tried to cheat the small farmers. "They told us: 'It will take at least seven years to get the salt out of the soil. Wouldn't you rather sell the land and go to Chennai?'" This is exactly what the SJDT and Kindernothilfe are trying to prevent from happening. That is because the untouchables, people without any

sort of education, will experience only misery in big cities. At home, on the other hand, they have a future: If everything works out, the monsoon will wash the salt from the fields in a few months. Then, the dalits will be able to plant rice again. And Kindernothilfe and the SJDT plan to provide them with seeds and start-up financial aid. The canal and road construction projects that are expected to be completed by then will accomplish two things: They will bridge a period without pay for the agricultural workers. At the same time, they will improve the villages' infrastructure and water systems.

As a result of the work, a water hole with a white crust of salt has been converted into a large reservoir. It is fed by canals that the farmers first had to pump out and clean. The next step is to repair and expand them so that they can collect rainwater again. From the earthen edge of the reservoir, you cannot see the sea. But the farmers can point out how far the floods reached – about two kilometers inland.

Education and rights for children and women

The technical and economic reconstruction of the area is just one part of the SJDT projects. Another goal is to create social structures that will give the dalits more say in the future. Brother Sebastian considers education and information about citizens' rights to be the keys to success. To push the issue forward, the SJDT has set up kindergartens, other educational opportunities and women's groups.

"If a village has no infrastructure, the government must do something. If there is no drinking water, you can demand it," he says. In the past, efforts to improve living standards failed all too often because the dalits knew nothing about their opportunities or rights. In the women's groups, they are learning how to find out about their rights, to fill out applications and to submit petitions. Each group is also setting up its own savings account. "Most of them didn't have the slightest idea what a bank is," Brother Sebastian says. "Now, they are learning to manage their finances, to make financial decisions and to do financial planning." That is a key feature of the project because women are to be handed economic responsibility later within the framework of loans and the purchase of land. The organization is promoting the female members of the



Plant a tree and build a house

How a native people in India is supporting the reconstruction drive



Ten years ago, Navaneetham could not read or write. Today, she is running in a local election in the district of Kanchipuram south of Chennai. "Since the ITWWS was set up, everything is better," she says. She is the president of the Irula Tribal Women's Welfare Society (ITWWS). She is a woman who is no bigger than a child, has a touch of gray in her hair and teeth damaged from betel leaves, a stimulant that people chew. She answers a question about her age in a few sentences, shaking her small, wrinkled finger in the process. Maybe 40, she says after a while. It is a number that evidently shows how far she is from the Western way of tracking time.

The Irulas, a tribe that is among India's native peoples, have fewer rights in Indian society than even the untouchables do. Until the 1970s, they lived in the woods of Tamil Nadu, at one with nature as hunters and gatherers. The men were known for the deft way they handled snakes. But then the trade of products made of snake skin was banned. At the same time, officials turned various lizards and other animals that filled the Irulas' daily menu into protected species, and the tribe was pressed closer together on a smaller and smaller area by the disappearance of the forests. The Irulas had to become day laborers, and it became clear for the first time that they did not have any rights and that the government did not even recognize their existence.

After several hundred Irula families banded together and formed the ITWWS in 1986, the existence of the tribe in the forests of Tamil Nadu was officially recognized. This alliance also served as their first step toward autonomy. As a result, the group has ensured its own survival. Irula women built a center that is devoted to the cultivation and processing of medicinal plants and herbs. "Today, we are using the knowledge that has been passed down from generation to generation as a source of income," says a young Irula woman, Koppusam Devi. "Now, Indians are coming to us. They come not just to buy our products. They also want to learn from us and get advice because they have lost this old knowledge."

In a tent made of green gauze, the Irulas are growing mangroves and other plants from the coastal region. Every seedling is needed to help replace the destroyed vegetation on the beach of Kanchipuram.

After the tsunami hit, ThyssenKrupp decided to support the Irula community through Kindernothilfe in its effort to aid destroyed villages near the coast. "The people are fishermen and have not belonged to our alliance. But they have lost everything, and we wanted to help them because they are Irulas," says the young Bobby, who is responsible for the tsunami project at ITWWS.

On one afternoon in Vayalore, children and elderly people are sitting between metal crates that have served as emergency shelter for fishing families. Just a few meters away, the other village residents are building new houses – their houses. They are being paid for by the ITWWS with the money that the headquarters received from ThyssenKrupp and Kindernothilfe. Each person, man or woman, gets 100 rupees a day from ITWWS. That is unusual in India and confirms something that Koppusam Devi proudly says of her tribe: that it is more advanced in many areas than Indian society.



Responsibility or a guilty conscience – what fuels the urge to give?

Germans donated around 2.3 billion euros in 2004, putting their nation at the forefront of the world's charitable countries. After a hurricane pounded the United States in September 2005, then-Chancellor Gerhard Schröder described his fellow citizens as people who were "generous and warm-hearted" when he issued an appeal for donations.

What prompts us to keep digging into our pockets in an attempt to give the basic necessities of life to those who have just lost everything? Is it a guilty conscience that grows out of the good life we lead in comparison to most of the world's population? Or is it a newly awakened realization that we live in "one world" and that our fates are tightly intertwined?

By now, most people understand that recent natural catastrophes are related to environmental change and that this change is linked to the rich countries' huge appetite for energy. They also know that their lifestyle contributes considerably to this usage. This is the area where people must focus if they want to go beyond short-term relief and provide long-term help that will eliminate the cause of poverty and devastating storms, says Rolf Haubl, director of the Sigmund Freud Institute in Frankfurt am Main. Such aid would represent a true sense of responsibility, Haubl says. One important factor is individual action. People feel overwhelmed when they are "buried in information" and, at the same time, see no opportunity to intervene. In this respect, the

media perform a helpful service when they provide information about donation campaigns as part of their reporting about catastrophes.

One issue is often ignored, though: People can act responsibly on the local level to address global problems. Friedhelm Hengsbach, a social ethicist at the St. Georgen Graduate School of Philosophy and Theology in Frankfurt am Main, suggests that the "waves of overflowing generosity" could be "counterproductive" if they overwhelmed relief organizations. He says structural solidarity, including increases in development aid, are more important than spontaneous help. But, he says, "we are not moving forward on this issue right now."

Short-term donations, however, remain important – particularly when people have been shaken by a major earthquake, hurricane or flood. The rallying cry could be: to do this and not stop doing that. Haubl also urges people to enter into partnerships aimed at easing structural, poverty-linked problems. Such actions form a direct link to people and reduce the chance that the donations will not reach the intended recipient. More and more people are pursuing this course of action. They regularly donate small sums to an orphan in Africa or a street-children's project in Latin America, and watch over the years to see whether any success has been achieved with their money.

Author: Heike Leitschuh-Fecht, "akzente" agency



society in particular. "First of all, we want to raise the status of women in their own families because they still experience intense discrimination," Brother Sebastian says. "We also believe that if you educate a woman, then you educate an entire family."

Brother Sebastian says the most vulnerable group in society is the children. The organization has set up kindergartens for those between three and five years old. In the kindergartens, the children receive both extra food and psychological care. The kindergartens are like pre-



schools. The children learn the alphabet and do some arithmetic. But they also have a chance to play games. The older ones, like the children of the fisherman Ramachandiran and his sister, attend a supplementary schooling program that the SJDT offers in the afternoon. The children have received new school materials and uniforms from the group and are supposed to learn the things that the public school does not teach. "Values like solidarity, equality and justice" are to be taught to the children, Brother Sebastian says. But the primary goal is for them to develop hobbies and interests, and to use creative activities as a means of getting away from the memories. "They come home in the evening feeling excited," Ramachandiran says. "And they are showing interest in everyday things again." ThyssenKrupp has provided 500,000 euros to be the sole sponsor of a similar program in the district of Kanyakumari on the southern tip of India.

From a nightmare to everyday life

It was particularly difficult for the children who had seen their friends and relatives drown in the flood and their villages overrun by water to return to their everyday lives. The history teacher R. Sugantha says her classroom was nearly empty every morning in the weeks that followed the tsunami. "My students were totally scared and did not want to leave home. Many families also had no idea how they would pay the school fees after the tsunami destroyed the foundation of their lives," she says. As a result, Sugantha went from house to house, talked with parents and children, and promoted the free afternoon classes offered by the SJDT. At the program, the 30-year-old teaches a group that includes three children who were turned into orphans by the tsunami. "The atmosphere in the groups has changed over the last few months. The children are getting livelier and more open day by day," she says. In fact, the small pupils sitting knee by knee in neat rows on the floor of their schoolhouse, which may be all of 15 square meters big and is covered by palm leaves, on this hot September day show no signs of the chaos that crashed into their lives roughly nine months earlier. The

children, their eyes wide awake, recite poems, perform dances, proudly count from one to 10 in English and laugh a lot – just like children.

If the program being led by Brother Sebastian achieves its goals, people in Tamil Nadu will be able to say later that everything improved after the tsunami. Even now, the things that people are building in their villages and the things that children and women are learning are major improvements in the living standard that the dalits had before the tsunami.

Brother Sebastian hopes that the women's groups will form the framework of structures that will bring the villages together. "Little by little, we would like to hand more responsibility to local leaders. In the end, the restructured communities should have a chance to buy their own land and to work it together." The SJDT plans to support the farmers with loans and know-how. Brother Sebastian considers this the way to produce independence from the major landowners and a better life with more secure incomes in the group.

Author, Photos: Kristina Merkner

Tsunami relief projects in India supported by ThyssenKrupp

Support of small farmers in the Nagapattinam region

Amount of donation: €350,000

Activities: Desalination, repair of irrigation systems, reconstruction of canals and ponds, expansion of existing wells and reservoirs

Reconstruction and village improvements in the Kanyakumari region

Amount of donation: €500,000

Activities: Establishment of community centers that offer kindergartens, children's educational programs and women's support groups; purchase of fishing boats; re-establishment of small businesses

Aid to the untouchables and the Irula tribe

Amount of donation: €250,000

Activities: Purchase of fishing boats and nets, construction of permanent housing for people in emergency shelters, basic medical care

Medical center for Kanyakumari and Nagapattinam

Amount of donation: €200,000

Activities: Construction of four medical centers to provide basic services, emergency care and psychological assistance to flood victims

»The amount of responsibility does not depend on the number of employees«

Interview with Ralph Labonte, Labor Director of ThyssenKrupp AG, and Thomas Schlenz, chairman of the company works council, conducted in South India nine months after the tsunami hit.

ThyssenKrupp_magazine: How would you describe the responsibility that you bear for a major corporation like ThyssenKrupp? As you know, it is a responsibility on which the hopes of more than 184,000 employees from countries around the world rest.

Labonte: I think the idea of bearing responsibility fundamentally means that a person is prepared to listen in order to achieve the best possible balance among the various interests, wishes and viewpoints within the company. We certainly cannot always address the individual interests of our employees around the world. But that is not our job. As a company, our job is first and foremost to be successful in business. In the final analysis, it is this success that enables us to consider the vital interests of our workforce.

Schlenz: The responsibility I bear arises primarily from the trust extended to me by the employees whose interests come together in the works council. It certainly is difficult to assume a position of global representation – particularly because the conditions under which representatives work vary greatly in international terms. We already have a European works council in Europe, and I'm mulling over the possibility of a global works council.

Have there been times when you felt that responsibility was a burden or a challenge?

Labonte: I have experienced both. The amount of responsibility does not depend on the number of employees. It is particularly painful to be in a position of responsibility when you have to make decisions that will have an immediate and negative impact on employees' lives. They are particularly painful when you are forced to shut down business locations. Unfortunately, that is something I have had to do several times in my career. At such times, we have never made the decision lightly. We have weighed the arguments against one another for a long time and

kept our employees informed about the process. Unfortunately, there are situations in which the business and technical issues don't allow you to make any other decision. Of course, responsibility can be challenging and motivating. It is really a lot of fun to experience and represent the human side of the company. And it is incredibly motivating when you can help people in the name of the company. One good example that comes to mind is our long commitment to basic occupational training.

Schlenz: The most difficult thing about our job has to be when people are laid off and become unemployed. For me, every day that I am successful in the team sport of representing workers is a great day. In the past, we have frequently been able to prevent shutdowns by presenting business arguments, by working out job guarantees and by creating additional apprenticeship positions.

In a world where you hear in a matter of seconds about a major accident or disaster that has happened 20,000 kilometers away, you could always have a guilty conscience. How does a global company deal with such emotional overload?

Labonte: One of the most difficult and painful realizations about life is that you cannot be everywhere and help everyone. As part of their social responsibility, our national representative offices take action when a national catastrophe or other serious problem occurs. When extremely bad disasters like the tsunami in December 2004 happen, the entire Group is called on to act. Whenever we provide aid, we want to provide strategic aid. By that I mean that we do not provide fast assistance that goes into thin air in a heartbeat. We provide the support that will help people get back on their feet again.

Schlenz: Three years ago, when Germany was hit by serious flooding, ThyssenKrupp employees provided impressive assistance. Many donated money and helped out directly in the flooded areas. I think it is wonderful that our company has such a culture and that we have moved it forward a little bit.

The focus of the projects in India is not just money. These activities are also designed to provide responsible, sustainable help to self-help. How can you ensure that no new dependencies are created?

Schlenz: One of my major concerns was that the money donated by our



▲
Ralph Labonte (left) and Thomas Schlenz
during their visit in South India.

employees and the company should not be wasted on administrative costs. I wanted every euro to go to the people in need. The help to self-help is also having a positive side-effect. It is leading to a significant change in the people's culture. Here in India, the change is in the relationship between men and women, and the discrimination of women.

Labonte: To achieve this, we first had to learn to be disciplined. Right after the tsunami hit, we wanted to get to the scene right away and to immediately ease the suffering. But then we talked to experts and realized that this was the wrong approach. As we see today, we have been able to launch projects in conjunction with a skilled partner, Kindernothilfe, that we plan to support for the next three to five years. The projects must learn to stand on their own two feet. If we accomplish this, we have chosen the right course. I am convinced that this will be the case.

How do you respond to employees who wonder why the company is providing a helping hand to India of all places? Germany, after all, has its own pressing problems to deal with. Just think about child poverty or unemployment among young people.

Schlenz: Of course, we are active in Germany as well. And that help is not just limited to the flood-stricken areas. We also help adolescents who did not do so well in school improve their employment opportunities.

In India, however, we have learned that you cannot compare people's suffering with the problems in your own country. If a problem arises in Germany, then it can usually be solved through a social network that does not exist at all in India.

Labonte: We certainly are a company with German roots. But, today, every second employee at ThyssenKrupp works outside Germany. That shows you that solidarity, help and support cannot remain kept behind a national fence. I agree with Mr. Schlenz: In Germany, we also have experienced many blows that we have had to address. But for the people in the Third World, it is not a question of having more or less social protection. It is really a matter of simple survival. We will always have to set priorities there. And I doubt our employees in Germany would even raise such a question. They have already shown that they are willing to provide whole-hearted help. ◀◀

Tinkering around to beat the band

With “do-camp-ing,” students become engineers

“Challenger” is the name they gave their kayak. They thought it fit so nicely because the vessel sat “so serenely in the water.” And when



nobody spoke up after the question of “who got his pants bottom wet” was raised, the up-and-coming young engineers could beam about the results of their own handiwork – and with good cause: They had had less than three days to plan and build the kayak.

The kayak made of steel was created in one of seven projects that 66 students in the 11th and 12th grades conducted at last year’s summer vacation project week called “do-camp-ing.” The name of “do(rtmund)-camp(us)-ing(enieurwissenschaften)” (dortmund-campus-engineering) reflected the focus of the program: During this week-long “dip” into science, the students from college-preparatory high schools lived in a tent city at the University of Dortmund and worked in the university’s facilities. The boat builders and other participants got their technical support from experts at the University of Dortmund and the project partner, Thyssen Krupp AG – after all, most

team built a grass-green miniature version of the “X-Wing” fighter plane from Star Wars as well as several steel versions of conventional paper airplanes.

“We found the way” was the conclusion of the “pathfinder” team, which created a computer-steered vehicle that could find its own way through a labyrinth.

In the end, this statement applied to all of the teams. Each achieved its goal – whether the group was setting out to cover nuts with chocolate, to create a micro-engraving in silicon or to build a sensor dimmer. And, of course, to test out each participant’s own interest in the natural sciences and technology in the real world.

“Hands-on technology is much better than theory,” one participant declared, and you had no trouble guessing which major she would choose once she got to college. That is reason enough for the University of Dortmund and ThyssenKrupp to invite another group of tinkerers to the campus this summer.



▲
“That thing is stupid. It always wins!” – an expression of frustration about the Lego robot that is better than its own programmer. Over a frame the participants had built themselves, the robot fed a “four-wins” game with stones. The test proved one thing: Even the moderator van Veen did not have a chance and lost after just a few moves.

of the students were working for the first time with the “real” materials and production machinery.

“Now we know why people traveled by water for so long before they made up into the air,” a joking Abraham van Veen, head of the Center for Student Information and Advisement, said during the final presentation of the projects to the participants and their mentors. “Three days just weren’t enough time to take care of the aerodynamics,” acknowledged the 17-year-old Nils, who enthusiastically described his experience with the project team called “paper fliers of steel.” Using a CAD (computer-assisted design) program, his



◀
After figuring out how to bond individual parts, and to perform the jobs of screwing and gluing in very close quarters, and sealing the hull and stern with PET bottles, the kayak builders could take their roughly 20 kilogram vessel out on its maiden voyage. Once on the pond, they found out that their kayak had a “very good feel.”

COMMUNITY COMMITMENT

»As dependable as God himself«

The 20th World Youth Day of the Catholic Church 2005: Wherever you looked, you saw a sea of beaming faces, banners and flags, and heard a jumble of languages, spiritual songs and appeals for compassion and social commitment. From August 11-21, the faithful from all parts of the world gathered in Cologne to celebrate a festival of belief and



congregation with Pope Benedict XVI. More than 1 million people from 188 countries gathered at the altar hill of the Kerpen Marienfeld for the concluding Mass. It was a major event that preached commitment and breathed commitment. And some of this commitment was provided by apprentices from ThyssenKrupp Steel AG in Duisburg and Bochum. They constructed and did the final assembly of 3,000 ciboria and

100 chalices made of Nirosta sheets that were donated by ThyssenKrupp for the celebration of the Eucharist. The liturgical vessels were designed by Padre Manfred Kollig, head of the liturgy department for the office of the World Youth Day. The bowls resembled a hemisphere and were designed to represent an open world into which God flows. And the steel used in the bowls? "A precious, dependable material, as dependable as God himself," Kollig said.



Standing up to the storm

It began with "Arlene" and finally ended with "Epsilon" – the record-setting hurricane season of 2005. Between the beginning of June and the end of November, there were 26 named hurricanes, including three of the devastating category "5." The worldwide response to the amount of destruction and suffering caused by Hurricane Katrina showed that people's concerns do not ease when one global catastrophe follows another. The hurricane that swamped New Orleans triggered waves of compassion and good will. When the job became too much for government services, private helpers jumped in to fill the void. This latter group included ThyssenKrupp employees in the United States. They invested their free time, vacations and pay to help out colleagues and others who had lost everything. "Convoy of Compassion" was the name of the five tractor-trailers that employees of ThyssenKrupp USA and ThyssenKrupp Logistics drove on short notice to the southern United States in September. The trucks' normal loads – metals, car and elevator parts, and hundreds of other company products – were replaced by water, diapers, canned food, detergent, bandages and other basic necessities. The relief supplies were collected by ThyssenKrupp sites throughout the United States and Canada. A total of 75 tons of relief supplies were delivered to the devastated region.



»Discovering Future Technology" honored

"Technology is great" is how some of the 60,000 big and small visitors viewed ThyssenKrupp's IdeasPark in September 2004. Now, ThyssenKrupp AG has received some official recognition for its contribution to the debate about innovation and its effort to fuel enthusiasm about technology among members of society. The initiative, "Discovering Future Technology," has, among other things, won the German PR Award 2005 in the category of "Issues and Reputation Management." A new installment of the initiative is scheduled for 2006.

Black, sticky and valuable: oil sands

When scientists predict that the Earth's oil reserves will last for only 40 years, they are talking about liquid crude oil. But that is far from the only form of oil in the world. In northern Canada, for example, oil sand fields are considered to be the most important oil reserves after Saudi Arabia's. Even the Indians used oil sand, a mixture of bitumen, sand, water and clay, as a sealing compound for their canoes. Thanks to innovative materials, cutting-edge technologies and larger equip-



ment, the mining of oil sands has become commercially worthwhile in recent years. Still, the mining and the industrial processing of oil sands pose extreme challenges for mining and processing companies. To produce 1 ton of oil, 14 tons of oil sand have to be dug up. Because the temperatures in northern Canada swing so widely, the mining and processing equipment must be capable of handling extremely different consistencies in the oil sands – from the malleable-sticky sand of summer to rock-hard sand in winter. Oil sand is also extremely abrasive, creating tremendous wear on the mining equipment. The latest steel alloys have extended the service life of excavators and bucket teeth from eight hours 25 years ago to six months. Canada is planning to increase oil production from the sands from the current level of 700,000 barrels a year to more than 2.2 million barrels in 2025. Krupp Canada, a subsidiary of ThyssenKrupp Technologies, is doing its part to ensure future oil production by delivering essential equipment and components, including crushing plants and temporary storage facilities.

◀ Extreme differences in consistency create a major challenge for mining and processing equipment: During the Canadian winter, oil sand is frozen hard as rock.

AUTO TECHNOLOGY

The car of the future steers itself

The gasoline pump is a thing of the past, and the environment no longer has to bear a burden – thanks to fuel cells. The car wash's job is handled by the self-cleaning auto body. An array of sensors protects the vehicle from accidents. And the driver comfortably leans back while his car goes about the job of sizing up the parking space and then getting the vehicle into it. An unbelievable utopia? Not by a long shot. Developers are busy working on all of these innovations, which will be designed to make the life of a car driver easier and, above all, safer. The work is farther along on some projects than on others. The car of the future will be steered by DuoPML, a new type of system for which ThyssenKrupp Presta SteerTec GmbH won a third prize in the innovation contest that ThyssenKrupp AG organized last year. The developers' primary motivation was to introduce the benefits of electrically assisted steering to luxury-class vehicles. The experts are already sure of one thing: The future belongs to



active safety elements in the car, particularly intelligent steering systems. At the moment, electrically assisted steering systems are limited to vehicles in the small and middle classes because the front-axle loads of the luxury-class models need electricity that current 12-V vehicle electrical systems have trouble providing. Thanks to the finely tuned interaction of actuator engineering, sensor technology and software, DuoPML makes it possible to perform such driver-assistance functions as crosswind compensation, automatic lane changing and parking help. And it does so with model efficiency: The steering system needs no external source of energy because it can rely on the servo pump already integrated into the vehicle. And it won't be too long before this presumed utopia arrives: By 2010 at the latest, the car with active steering will be available, Gerd Seidel of ThyssenKrupp Presta SteerTec estimates.

MONUMENT PROTECTION

Meseberg Castle – the high-tech inn

Christian Ludwig von Kaphengst would have been delighted by three helicopter landing pads and elegant elevators available to the guests of his extravagant parties. Such extras would have been fitting for the man who was known as the “rakish Kaphengst” because of his lifestyle and who was a favorite of Prince Heinrich, the



▲ The restoration of historic buildings requires top-notch engineering and technical solutions that preserve the unique character.

Modern vehicle technology with active safety features helps master even the trickiest driving challenges.



brother of Prussia's Frederick II. He could even afford stables for 20 majestic horses. Once scandal led to his being banned from the Rheinsberg court in 1774, Kaphengst used the king's cover-up money to buy Meseberg Castle, one of the beautiful estates on Brandenburg's Lake Huwenow, only five hours by horseback from Berlin. The relative nearness to Prince Heinrich enabled the relationship that drew such critical glances to continue, and the balls and garden parties hosted by the fun-loving Kaphengst were soon the talk of the town in Berlin.

In the next 200 years, the castle changed hands numerous times. Its owners even included the descendants of the poet Gotthold Ephraim Lessing. The East German government used it as a day nursery and a cooperative store. After German unification in 1990, it stood empty for a long time until the Messerschmidt Foundation stepped in and renovated it from top to bottom. Now, a new chapter is being written in the multifaceted history of the “magical castle,” as the writer Theodor Fontane called the Baroque edifice in his *“Journeys Through Brandenburg County.”* Meseberg Castle will become the successor to the Petersberg Federal Guest House near Bonn for a German government that now makes its home in Berlin. The helicopter landing pads will serve state guests who are expected to begin arriving sometime in autumn 2006. And while the exterior will be as beautiful and idyllic as it was during the times of Kaphengst, the interior will be filled with the latest technology.

From the start it was obvious that a standard solution would not do in this feudal setting. Wherever technical modernization can endanger a national treasure, workers must deal gingerly with the inheritance that has been passed down from generation to generation. As a result, the construction was carefully aligned to the local sites, and the materials were selected in close cooperation with the Office of Historic Monuments, the architect and the client. The glassed-in elevator of a ThyssenKrupp subsidiary now gives riders a clear view of the dreamy estate as it travels past the outer window on the rear wall of the shaft.

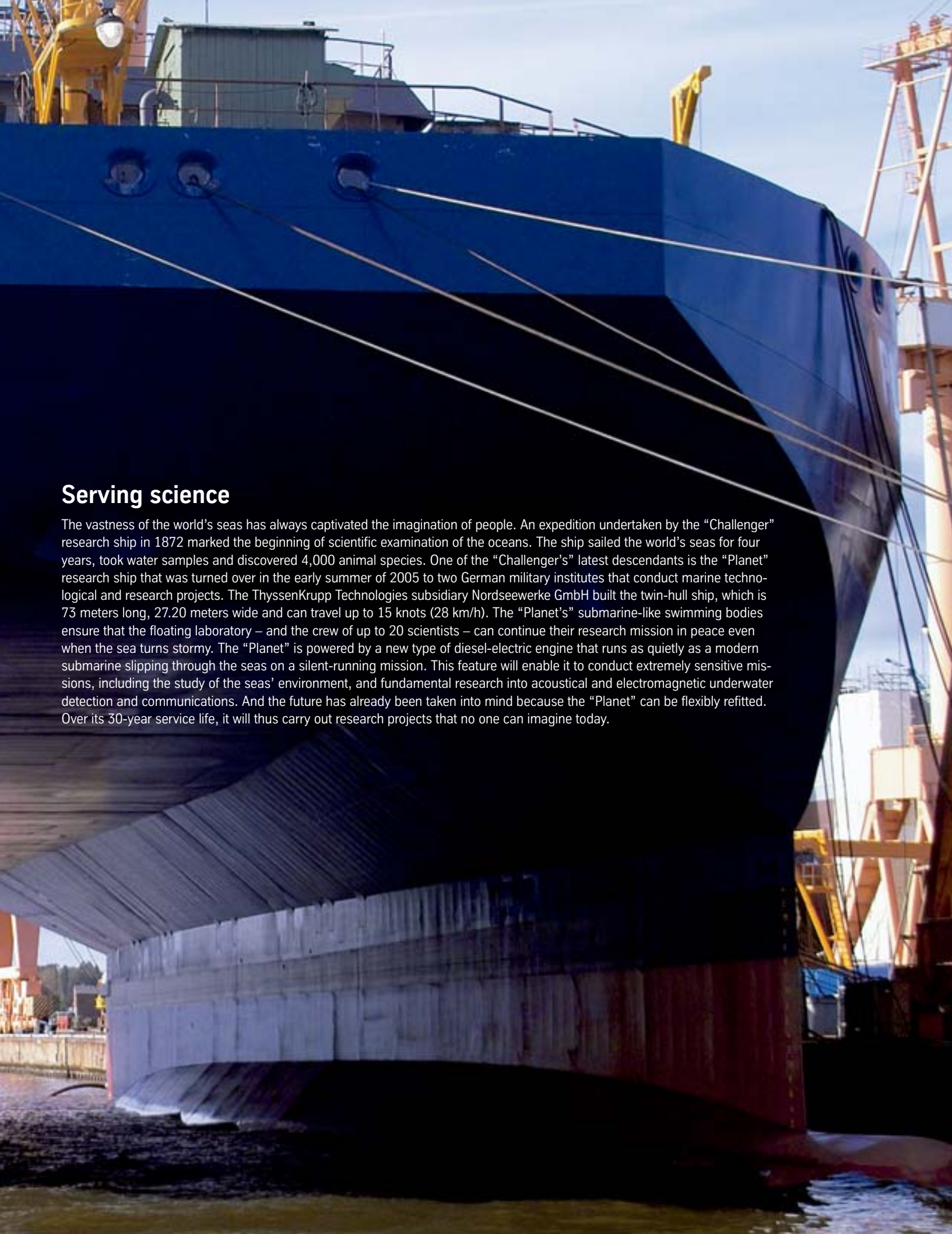
“It is absolutely quiet. The trees stand protected from the wind. They rustle more softly than anywhere else, ...” Theodor Fontane wrote. But this calm will soon be a thing of the past once international conferences and summits make the castle in Brandenburg famous.

Electricity rather than concrete

Practicality and appeal need not be mutually exclusive. Where gray power-plant towers once dominated the landscape, cladding made of solar-cell packages placed on green elements of steel sheets now provides a touch of appealing color. The three towers of the recently modernized power plant in Duisburg-Wanheim that rise up to 80 meters in the sky have been completely covered on the southside with ThyssenKrupp Solartec modules, a facade and roof system that can effortlessly master architectural challenges. Using photovoltaics, the direct conversion of sunlight into electricity, the power plant's integrated solar-power unit outputs around 10,000 kilowatt hours per year. That amounts to the annual usage of two row houses. Photovoltaic modules help conserve the environment's resources because they can do many jobs at once. Besides producing electricity, they can also provide protection from the weather as well as serve as heat and noise insulation. Because each of the three layers that make up the solar foil absorbs a different segment of the spectral region of daylight, the Solartec modules produce electricity even when the sky is overcast or when they are covered with snow.





A large blue and white research ship, the Planet, is being lifted by a yellow crane at a shipyard. The ship's hull is painted blue on top and white on the bottom. It has a twin-hull design. The ship is being hoisted by several thick cables attached to a yellow crane. The background shows other industrial structures and a clear sky.

Serving science

The vastness of the world's seas has always captivated the imagination of people. An expedition undertaken by the "Challenger" research ship in 1872 marked the beginning of scientific examination of the oceans. The ship sailed the world's seas for four years, took water samples and discovered 4,000 animal species. One of the "Challenger's" latest descendants is the "Planet" research ship that was turned over in the early summer of 2005 to two German military institutes that conduct marine technological and research projects. The ThyssenKrupp Technologies subsidiary Nordseewerke GmbH built the twin-hull ship, which is 73 meters long, 27.20 meters wide and can travel up to 15 knots (28 km/h). The "Planet's" submarine-like swimming bodies ensure that the floating laboratory – and the crew of up to 20 scientists – can continue their research mission in peace even when the sea turns stormy. The "Planet" is powered by a new type of diesel-electric engine that runs as quietly as a modern submarine slipping through the seas on a silent-running mission. This feature will enable it to conduct extremely sensitive missions, including the study of the seas' environment, and fundamental research into acoustical and electromagnetic underwater detection and communications. And the future has already been taken into mind because the "Planet" can be flexibly refitted. Over its 30-year service life, it will thus carry out research projects that no one can imagine today.

WORKING SAFELY IN MEXICO

Other parts of the world are not nearly as committed to on-the-job safety as Europe is. Education and worker training are the keys to positive advances in the work world and to improved quality of life.





The old silver-mining town of San Luis Potosí lies in the area where central Mexico's fertile high plateau begins to mingle with the north's semi-desert region: This is where the Spaniards discovered the coveted metal at the end of the 16th century and named the new town after the famous silver mountain of Potosí in Bolivia. Even though the city boasts a group of baroque buildings, the capital of the state that bears the same name fails to exert the pull on tourists that other such colonial cities as Zacatecas and Guanajuato do. And the silver mines in the dry hills outside the gates of San Luis are mostly history. You might think that this sleepy little town is over the hill. But that is not the case when it comes to on-the-job safety. Mexinox – a subsidiary of ThyssenKrupp Stainless – has become a trendsetter in global terms in the area of on-the-job safety and a remarkable role model in Mexico. The reason for its new standing is that Mexinox is one of the pacesetters in the reduction of on-the-job accidents within ThyssenKrupp – and it is doing so

in a country that does not have a particularly good reputation for workplace safety.

The International Labor Organization (ILO) estimates that at least 4 million on-the-job accidents resulting in several missed days of work occurred in Mexico in 2001, the year for which the latest figures are available. In Germany, by contrast, a maximum of 1.1 million such accidents occurred during the same period. Given such figures, it is no wonder that employees in Germany wonder why Mexinox, of all companies, has been so successful in its job-safety efforts.

"That's a long story," says Arturo Valladares Arcos, in charge of plant safety. "The start was made at the end of the 1990s when management took a closer look at the ►



A major goal supported by the entire workforce at Mexinox: *cero accidentes* – reducing the number of on-the-job accidents to zero.

number of work-related accidents. And they were comparatively high back then, impacting both our workers and our company.” The cause was clear: Mexico was continuing to have people use their hands to perform many processes that were being done by machines elsewhere. After all, workers in Mexico were relatively cheap. But the mentality played a role as well. “In Mexico, there is a tendency to interpret regulations – let’s say flexibly – instead of following them down to a tee,” Valladares Arcos says. “As a result, many workers did not wear gloves five or six years ago, even though regulations required them to. They argued that they couldn’t work as well if they wore gloves.” In the halls of Mexinox today, you do not see anyone without the required safety clothing: Helmet, protective glasses and safety shoes are now standard equipment.

To further advance a culture of safety at the plant, Mexinox worked with the DuPont chemical company in 2001 to develop a system called “Sistema de Administración de Seguridad” (SAS). Under this system, all workers took part in an additional training program, and weekly safety meetings were introduced.

Education does more than promote safety

But the changes did not stop with the introduction of SAS. “We took an even closer look at the areas where so many accidents were occurring,” says Rosario Ocaranza Sanibañez, co-director of worker training at the plant. “They were the finishing shop, where the steel bands and sheet steel are packed for shipment; the cutting area; and machine maintenance. In the packing area, there were many hand injuries, in part because newly hired workers were assigned there.” After making this determination, Mexinox went to work and restructured worker training: Since then, all newly hired workers attend a course where they learn about the job through manuals, videos and

practical exercises. Afterward, a trainer watches them to determine whether they are correctly performing each job step and are following safety regulations. “It was interesting to watch when we introduced our safety system and the step-by-step training,” Ocaranza Sanibañez says. “Frequently, the new employees were the ones who corrected those who had been here for a long time and had gotten used to doing things the wrong way.”

In addition to the accident-reducing effort, Mexinox is focusing on preparations to deal with possible industrial accidents that occur in every type of plant. “Just a few years ago, we had employees who never learned in 15 years to use a fire extinguisher,” Valladares Arcos says. “Now, we have regular rescue drills – unlike many Mexican companies that ignore the regulations and that know full well that they can get away with it because the government would prefer to turn a blind eye than shut down a company that employs a lot of people.”

The ILO sees a government’s “blind eye” as one main reason for the high number of on-the-job accidents in many countries. The organization based in Geneva says another major factor is the lack of a preventive safety culture. Arturo Valladares Arcos



»If you want to improve the safety culture, a good education is a must.«

and his colleagues are working hard to establish such a culture at Mexinox. But it is a job that is easier said than done because they are faced with the task of changing the attitudes of all workers.

Valladares Arcos describes how difficult it was to convince the workforce that they should permanently follow the rules. “Two things were crucial for this effort to be successful: First, we had to talk with every single worker and to let him or her know in a friendly way that we were being serious. Second, we were able to change the work relationship: Many of our workers now view their jobs as something more than a way to earn money.”

One important factor in this effort was a special training program that Mexinox introduced in 1998. “At the end of the 1990s, we still had many employees who did not have any sort of school diploma – but that is not unusual when you are talking about unskilled jobs in Mexico,” says Francisco Javier Rodríguez Cerda, who has worked with this program from the beginning and who is now coordinating recruiting at Mexinox. “But if you want to improve the safety culture, a good education is a must.”

In recent decades, Mexico has made tremendous strides in improving the literacy rate in the

country, according to the national statistics agency Inegi (Instituto nacional de estadística, geografía e informática). But, still, 9.5 percent of the population was illiterate in the year of 2000. In addition, 28 percent of the population had not finished the “primaria” (the six-year elementary school) or even attended a school. Mexinox was faced with the problem of dealing with workers who never had a chance to get a good education. This question served as the starting point for the company’s education efforts.

Working with government officials, Mexinox organized a program that it offered free of charge to workers. In this program, they could finish the “primaria” and then the three-year “secundaria” (roughly equivalent to Germany’s secondary general school). A total of 111 workers signed up, and 95 of them finished the “secundaria” – and they attended class when they were off work, including from 7 a.m. to 9 a.m. after the night shift. “At six shifts of eight hours each week, this commitment shows how much the people were interested in education,” Rodríguez Cerda says. “And many of them could put their knowledge directly to use: At the age of 45 or 50, they could help their children do homework for the first time.”

The school program was expanded little by little. Now employees can finish the “preparatoria,” a two-to-three-year school for college-bound students, free of charge. They can also enroll in a distance-learning program based on the curriculum of the Tecnológico de Monterrey, a prestigious private university. “The goal of the last step of our education program is: A total of 72 of our workers should receive their degrees in engineering and international business by 2007,” Rodríguez Cerda says. People who did not have any sort of school diploma just a few years ago can now earn a college degree thanks to the program – and open up new opportunities for their careers. ◀◀◀

Author: Alexander Schneider | Photos: Alexander Schneider, Mexinox

AT THE BEGINNING OF PROGRESS

Some interesting and curious facts from the history of corporate social services



An in-house doctor checks the ergonomics of the workplace in the office, and the bill for the employee's evening workouts at the gym is picked up by the company. These are just two of the numerous examples of corporate social services that some companies offer today as they go beyond the basic level required by law. Such voluntary social services were far more important for employees when the state largely stayed out of social welfare. Here is an overview of some benefits that were very generous at the time, even if they might seem a bit strange today.

Did you know ...?

... that companies did their creative best to wean their employees from liquor?

Even at the beginning of the 20th century, alcohol served as a "lubricant" of production at many companies. Frustrated by the fact that "even the best and most punctual worker won't forgo liquor at the workplace," August Thyssen developed an entire program of alternatives. He offered tea in his factories, had weak beer dispensed at the "ménages" (residencies) that had been built for unmarried workers, bought a mineral water source in Bad Tönisstein for his workers and founded a soft-drink factory.

... that German employers had grocery stores built for their workers?

Starting in the late 19th century, quite a few factory locations resembled small towns that took care of all needs. Consumer establishments ("Konsumanstalt") were supposed to "free the worker from the grip of profiteers and racketeers," and to get him used to "paying cash and thus always keeping his budget under control." At the "Konsum," workers were able to purchase groceries, spices, beverages, all sorts of manufactured goods, household appliances, and often furniture, hardware and shoes. In addition, there were a tailor, a butcher and a baker. The "Konsum" was a non-profit organization. Any profits that were made were passed on to the customers as discounts.

... what the "miner's cow" and the "racehorse" meant to industrial workers?

In the Ruhr region, the miner's cow lived in the goat shed and the racehorse in the pigeon loft. Small stables and barns were often part of workers' communities in the late 19th and early 20th centuries. During World War I, the Friedrich Thyssen union even set up a farm for small animals with ample pastures. The animals that were bred there – "a type of goat that yields a large amount of milk and feeds off very little; large, meaty rabbits; and first-rate hens" – were sold to employees at prices that were significantly below the actual cost. Anyone who didn't have a garden of his own could hope for a small plot where working class families could grow a fair share of their vegetables. In their spare time, many workers bred pigeons and held competitions with these "racehorses" to determine whose bird would return home first.



... what used to move apprentices?

Physical education was part of the apprenticeships at the Thyssen steel works almost from the start because gymnastics and sports were thought to play "a significant role in relaxing and loosening up young people." In a training workshop that was created in 1928, 15 minutes of gymnastic exercises were conducted daily as part of a break from work. As part of the weekly school day, two hours of workouts were held in the gymnasium next to the training shop. For the apprentices in their first and second years, there was some type of sporting activity or hike every Saturday. Starting in 1929, a factory sports event was organized every year. The daily gymnastic schedule and the Saturday sports event were used until the 1950s.



... when the first employees in Germany shared in the success of the company?

In 1922, Fried. Krupp AG became one of the first German companies to offer its employees preferred stock. A trust fund association, to which every preferred shareholder belonged, purchased and administered the stock in order to keep the shares from entering free trade and thus threatening the status of the family company. By July 1, 1923, the entire total of 50 million marks was subscribed by 1,663 employees, 690 workers and 116 retirees. The success of this co-ownership model, however, was short-lived. Inflation-fueled currency devaluation caused dividends to vaporize, and the Krupp trust was dissolved in 1925. ►



»The purpose of work should be common welfare. Then work is a blessing, then work is prayer.«

Alfred Krupp, 1873

► ... how German companies used to give their workers domestic support?

Starting in 1907, two nurses and about 50 temporary workers took care of sick wives of Krupp workers at home and helped out with the housework. Smaller medical articles were given away, and larger ones were lent out. The closing words of the annual report of the Foundation for Home Care from 1910 read: The foundation "provides new courage to face life to families run down by adversity and need. It has an improving effect on housekeeping and child rearing. It offers otherwise unattainable, secure and trusted assistance to the family father, so that he may tend to his job in peace; at the same time it does not rob him of the feeling of responsibility for taking care of his family."

► ... that institutionalized child care was normal for many German housewives nearly 100 years ago?

Starting in 1911, the Krupp "Arnold House for women in childbed" was designed to "give the wives of company employees the amenities of a quiet stay after childbirth in conjunction with appropriate childbed care." At that time, Thyssen had institutions "for the consultation and instruction of the mothers-to-be" as well as a nursery for babies when "the conditions at home are quite unhygienic" or the "mother or child fall sick." Both companies provided the wives of the workers the possibility of daily childcare at centers. These were designed to allow them to take care of their household duties in peace.

► ... how German companies, long before PISA, tried to promote the joy of reading among children?

The Krupp newsletter from 1912 contained this announcement: "Just like the past two winters, this year, too, the children's reading room Friedrichshof is open starting Oct. 1. Children – boys and girls alternating every day – are allowed to find diversion there every afternoon from 3:30 to 6:30, if the weather doesn't allow playing outside. Because it must be said: On beautiful autumn days or if there's ice and snow outside, it is most enjoyable if the reading room is completely empty, and it is not desired that some odd ones are bent over an Indian adventure with their ears held tight and their backs all askew. They will not be thrown out, but if they are cavorting outside, it is better." In 1910, the Krupp reading room in Essen ranked second among all public libraries in Germany based on volumes and books lent.

... that a giant immersion heater was once supposed to heat an entire swimming pool?

Alfred Berndsen, the labor director of Dortmund AG steel works, had a vision: In 1947, he decided to turn the local Hoeschpark into a "spa of the North." Berndsen wanted to warm the pool's water with a type of giant immersion heater. He began construction without the approval of the Allied inspection authority. The Stockheide swimming pool was nearly complete when Berndsen won the retroactive approval of the steel trustees in 1952 with his statement: "Now you can fire me, but you won't close down the swimming pool!" The swimming pool quickly became very popular. The neighboring Hoeschpark also became a magnet for people thanks to such events as the festival of lights, "Hoeschpark aflame"; roller-skating world championships; and a cycling track. Instead of using a giant immersion heater, the pool was warmed to 24 degrees Celsius beginning in 1974 with steam heated to 130 degrees Celsius from the furnace of the Westphalia steel work.

... how disabled workers were integrated 80 years ago?

In 1923, Hoesch established the first "workshops for invalids" for workers who had suffered accidents. These workshops primarily produced safety equipment. But they also made paintbrushes, hairbrushes, brooms, leather goods and jute bags that were all sold to employees at low cost. Later, these workshops were expanded to manufacture and to repair factory equipment and replacement parts in order to create new areas of work for employees with limited work capability.



... when accident prevention began to be done on a large scale?

In 1925, Hoesch pioneered the field of accident prevention with the creation of a central accident prevention office to systematically analyze accident rates and sources of danger. The program developed by safety engineer H. Bitter to reduce the number of accidents in companies included everything from developing mechanical and technical safety precautions to employee training programs and the award of accident prevention prizes to workers. Following the example of the U.S. "Safety First" movement, this program was complemented by such health care programs as stays at health and recreation resorts.

Author: Anke Bryson | Photos: ThyssenKrupp Company Archive, Historical Archive Krupp; ThyssenKrupp Company Archive, Hoesch Archive

»Human hardship is so manifold in its causes and effects that a well thought-through and clearly organized system would have to be created in order to provide the vast social work that the large number of people employed by Thyssen mining demands.«

From a Thyssen pamphlet, 1922



»My daughter wants to dance on ice – or research the world.«

Ulrike Reitz with daughter Lisa, 8

THE FUTURE BELONGS TO OUR CHILDREN



Eight-year-old Lisa Reitz wants to become a major researcher when she grows up. But, then again, maybe a famous ice skater. Sofie Schneider-Wendt (10) also has many dreams about her own future. "I want to be a veterinarian – or maybe a music teacher." Anyone who is responsible for the future of children has to respect their desires and dreams. Just like the mothers of Lisa and Sofie, both of whom work at ThyssenKrupp. "Parents have to make sure that their children trust them, ask questions, and they must arouse their curiosity," Ulrike Reitz says. And Ella Schneider-Wendt adds: "As parents, we must give our children opportunities. But we also have to draw clear lines. Otherwise, they won't have any feelings of success."



»My daughter wants to make sure
that sick animals get better.«

Ella Schneider-Wendt with daughter Sofie, 10



► Ella Schneider-Wendt works in the design department at Thyssen Krupp Automotive. Ulrike Reitz works for ThyssenKrupp Steel in steel research. On the job, they help make sure that today's cars suffer much less rust damage than yesterday's autos did. Together with their daughters, they played a role in the company's image campaign. "Our moms keep cars looking great for ages" – the proud daughters say when they describe their mothers' jobs in a television spot and in newspaper ads. Overall, well over 100 children and their parents have taken part in the company's image campaign since it was launched in 2001. ◀◀◀

Photos: Oliver Rütter

As part of its communication strategy, ThyssenKrupp regularly talks about the family and responsibility for the future. "Our communication campaigns express a feeling that is based on the culture of a 150-year-old family-run company," says Jürgen Claassen, Head of Group Communications. "Only real people have a say in communications at ThyssenKrupp AG, be they customers and other stakeholders in the annual report, young employees in human resources communications or employees and their children in corporate advertising campaigns. The decision to use real employees and their families instead of models is much more than a clever public-relations gimmick. It is based on the realization that people only trust a company that has an authentic image."

What does communications have to do with responsibility? The question is easy to answer: A company's communication activities bear a large degree of responsibility for its credibility. Today, as mistrust toward institutions grows in our society, this is more important than ever. The study "Perspektive Deutschland" (Perspectives on Germany) shows that the standing of both political organizations and employers is falling. In a survey commissioned by ThyssenKrupp, the research company tns infratest observes: People expect a good company to assume social responsibility. In addition to securing jobs, the topic of commitment to education and young people ranks high on the wish list.

Long before the issue of education was catapulted to the center of public attention, ThyssenKrupp was committed to better education and support of young people who are interested in technology. The group operates one of the most modern training facilities in Europe in Duisburg. Even young employees from other countries are trained here. Partnerships with a number of technical universities are designed to intensify the practical focus of engineer training. In addition, technology initiatives such as the "Jugend forscht" youth science competition have been supported for many years. With the help of numerous school partnerships, young students gain access to a hands-on approach to modern technology. ▶

IDEASPARK— MAKING TECHNOLOGY TANGIBLE





► “Discovering Future Technology”

What does communications have to do with the future? ThyssenKrupp has been using a large share of its communication budget since 2004 to spur enthusiasm for technology among the general public, especially with children and families. That is because Germany's ability to survive as a business location depends on its innovative capacity.

But young people's futures are also shaped by their knowledge and ability. Under the motto of “discovering future technology,” ThyssenKrupp wants to invite young people (and their parents) to identify and exploit the chances of technology. As a result, they will be able to actively shape their futures and master the challenges of globalization.

The initiative was started in 2004 by ThyssenKrupp, and is an open platform for partners from science, society, business and the media. “How can we get people excited about technology? The answer: We invite everyone, show them the fascinating side of technology, give them hands-on experience and allow the enthusiastic engineers to talk.” This is how the newspaper Aachener Zeitung succinctly described the goal and the concept of ThyssenKrupp's IdeasPark at the beginning of September 2004.

The initiative “Discovering Future Technology” reached its first climax with this three-day, hands-on exhibit on technology, which was attended by more than 60,000 visitors. Admission was free. The IdeasPark was a technological experience for the entire family and was designed to address young people. In a group of tents set up on an area the size of three soccer fields, visitors were able to become discoverers – and find out how complex technologies are developed, meet the “thinkers” and “doers” in person, and experience technology



in a tangible and understandable way. More than 500 employees and over 50 partners were involved in the exhibition, which has received multiple awards.

The next IdeasPark is already being prepared: From May 20 to 28, 2006, ThyssenKrupp and its partners are inviting people to the IdeasPark 2006 in Hanover. The event venue on the site of the EXPO will include the German pavilion, the EXPO plaza and the TUI Arena. Admission is free. There will be numerous exciting projects from universities, research institutes and companies devoted to the focal points of the exhibition: mobility, life and the environment. In addition, an attractive supporting program is being planned.

Each day of the event will have a different theme (i.e. Day of Innovations, Education Day, Future Day). The days will include lectures by the children's university, spectacular science shows and high-level discussions with prominent moderators.

Up-to-date information can be found on the website www.zukunft-technik-entdecken.de (German only). ◀◀◀

Text and photos: ThyssenKrupp



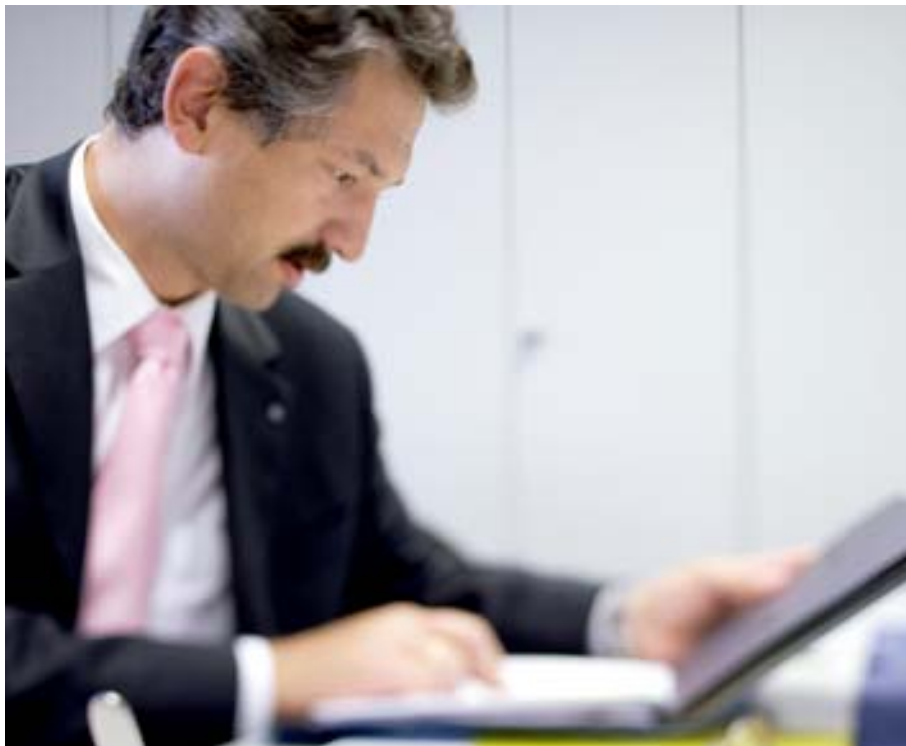




WILL + FANTASY + PASSION = CREATIVITY

Innovations are creations of the mind. The beginning of the innovation chain is formed by enterprising individuals who have spotted improvement and market potential before anybody else has, who are particularly creative, and who are prepared to take risks and try out something new.

When Michael Kuessner mulls over something, he sees green. To his right, towering birches; to his left, towering birches; and in the middle, fields and pastures. The cup of coffee is throwing off a wisp of steam on the blue table. His wife is watering the geraniums. And Kuessner is thinking. The scrap agent comes up with his best ideas when he is on his balcony in Bochum. "When you really want to solve a problem, you take your thoughts home with you," Michael Kuessner says. "They just sit in the back of your mind and eat at you." Kuessner has been sort of a bar-keeper at the Bochum plant of ThyssenKrupp Nirosta for a while: He makes sure that all of the right ingredients are used in his "cocktail," the so-called scrap sauce. And the right ingredients are all types of scrap. "The mix is what matters." Kuessner, who always keeps a small notebook and a black Stabilo pen in his beige work jacket, has submitted 10 ideas to the company suggestion program – and nine of them have been put into effect. Right now, Michael Kuessner has forklifts on his mind wherever he goes, be it the balcony or the bathroom, where the showerhead may be turned in such a way that it resembles the broken roller on the forklift mast. It is the forklifts that are being used for the first time at the Nirosta plant in Bochum. Forklifts that could be just a tad better. Forklifts on which Kuessner keeps finding little flaws that have to be corrected: A roller that should be placed in the center instead of the outside – so that it ►



ThyssenKrupp ideas competition

“See. Think. Improve” – that is the motto of ThyssenKrupp’s third biennial ideas competition that is being held between October 1, 2005, and February 28, 2006. In addition to the large number of awards for individual employees, ThyssenKrupp will present special prizes during the wind-up event in the summer of 2006 to the Group company that has made the most suggestions designed to optimize work processes and procedures; to save time, material, energy or organizational effort; to increase customer satisfaction and quality; or to promote worker safety, good health and environmental protection.

◀ Ideas managers like Frank Kühn review incoming suggestions for their applicability.

will not take a beating in every sharp curve. A protective grid that can be easily pushed aside when the windshield is cleaned. A mispositioned air filter. A pair of black heat-shrink tubes that could be used as a covering for the cylinder of the vehicle that is susceptible to lime.

“The best feeling of all is when you put an idea into practice and you realize that it works,” Michael Kuessner says with a twinkle in his lucent blue eyes. “When you see that not one single roller is being worn down because it is now positioned properly.” When he sees that his work has paid off. And when he overcomes himself and passes on his thoughts.

Ideas make history

The company suggestion program has a long tradition at ThyssenKrupp. In the General Directive issued by the Fried. Krupp company in 1872, more than 130 years before Kuessner made his first suggestion, Alfred Krupp urged managers to “gratefully accept” any ideas submitted by workers. Particularly in bad economic times, including the years that immediately followed World War II, the company recognized the wealth of potential that was hidden in the workforce’s experience. To urge workers to submit new ideas, the company used slogans. “The greatest feats with the least exertion” was one of them. Early on, Krupp and Hoesch paid bonuses for inventive ideas, clever process improvements and helpful information about new production niches. In the 1960s, special drawings and competitions were added as well. Over the years, the ThyssenKrupp ideas competition has become a fixed part of the company’s suggestion program (see box).

It has never been as easy for ThyssenKrupp employees to let people know about their ideas. Thanks to the new company software that was installed in the summer of 2004, employees can submit their ideas at any computer by using a simple input mask. Formulate the idea. Type in the personnel number. Click. And it’s off to the ideas manager of the individual plant. “The manager calls on an expert, usually a department head, who takes a hard look at the problem and the suggested solution,” Frank

Kühn, the responsible personnel and work design manager, says in describing the procedure. The new system has broken down a lot of barriers, Kühn says. “Now, you can submit a suggestion anytime and don’t have to fill out a lot of paperwork.”

Rudolph Harnisch, in charge of the suggestion program at ThyssenKrupp Steel in Duisburg, is sold on the intranet-based ideas management system: “This is a big step toward optimizing our ideas management.” Dr. Rudolf Carl Meiler, in charge of personnel policy at ThyssenKrupp Steel, likes the system because the experts and workers council have a clear overview of all suggestions in their departments. “And the person who submitted the idea can check on the status of his or her suggestion at any time and from any place,” says Meiler. “This means ideas management can also become a fixed topic in shift and team meetings.”

The ideas are awarded points based on their size and usefulness. If a suggestion produces savings of more than 10,000 euros, a cost effectiveness study is done to determine the average benefit in the first five years of use – and the contributor of the idea receives a percentage of the savings.

You have to move sand to find nuggets

Two years ago, Klaus Cibis struck upon such an idea. Surrounded by boilers covered with red and blue valves and gauges, the trained tool maker works in ▶



▲
▲ Thanks to the new type of membrane de-aerator suggested by Klaus Cibis, ThyssenKrupp no longer has to use any chemicals to remove CO₂.

▲
▲ As the safety officer, Klaus Dreyer's suggestions often concern protection of workers and accident prevention. He has already submitted 288 ideas over the past few years.

»Creativity is a key factor for the development of our society«

Prof. Dr. Horst Geschka – an independent business consultant who has been researching the issue of innovation management since the middle of the 1970s. As a charter member of the “Gesellschaft für Kreativität e.V.” (Society for Creativity), he has laid the German foundation for research into creativity and has developed numerous techniques to spark it. He has been an honorary professor at the Technical University of Darmstadt since 1991.

ThyssenKrupp_magazine: What does creativity have to do with responsibility?

Horst Geschka: Creativity is a key factor for the development of our society. In contrast to other resources, creativity cannot be used up! Creative solutions generally enhance efficiency and help conserve resources. This is why we should demand of politicians and business leaders that they encourage, demand and recognize creative thinking and acting. That is their special responsibility.

How can a company encourage creative employees?

Supervisors should feel responsible for giving their employees the leeway to think creatively. A “creative executive” is not someone who comes up with new ideas every day. He or she is actually a person who lets employees speak up and tries to promote their ideas. That always has to occur in new and different ways. You have to give your employees the feeling that their ideas are always welcome. And that it pays off when someone thinks “outside the box.” Fear is the biggest barrier to creativity. Feedback

»Fear is the biggest barrier to creativity.«



is very important, too – the more, the merrier. It can come from supervisors or colleagues. It motivates. You also need to have the financial and personnel resources to implement new ideas. Of course, you can't put every suggestion into practice. But when the ideas all pile up in the desk drawer, the creators will become disappointed in the long run.

Are international corporations per se more innovative?

Of course – provided they use the creative potential of their employees. Every person has different solutions and strategies for solving problems, depending on his or her cultural background. When employees from a different background and from various hierarchical levels and production areas get together, you will have the broadest possible variety of ideas.

“Creativity – everyone can learn to do it!” – Would you sign off on such a statement?

Definitely. But you should remember that the outcome will not be the same for all people. It's just like sports: You can teach everybody to use a pole to vault over a bar. But only a few people actually become professional pole-vaulters. Practice does help a lot. But for some people, you can just keep on raising the bar a little higher. They simply have what it takes to jump higher than others – the same thing goes for creative thinking.

So, there really is no such thing as a general “formula” for creativity.

It is really more of a recipe in which you have to have the right equipment in your kitchen and you have to play around with the ingredients every time a problem pops up: For starters, you need an average amount of intelligence (too much is rather a bad thing). Then, you need to have some sort of nagging problem. It should have been bouncing around in your head for some time by now. Then, you toss in a dash of open-mindedness and a few suggestions from others. This will almost inevitably create new ideas.

There are more than 100 creative techniques. Tell us about one that anybody can use?

Catchword: “confrontation.” When you desperately need a solution to a problem, you freeze up quickly. One simple guideline in such situations is: focus on something else. What you're looking for is new impressions. Your subconscious will examine these impressions and determine whether they can do anything to help solve your actual problem. Creativity is a never-ending process that always needs to be prodded. A routine, even in the search for ideas, is the certain death of creativity.

The interview was conducted by Simone Kaiser. | Photo: J. Röhrscheid

the energy supply operation of the Krefeld plant. Or as Cibis calls it: “the company’s public utility.” The place hisses. Using both hands, he climbs down a narrow, steep iron stairway that leads into the building’s dark belly. The place drones. “Watch your head.” The place roars. “Be careful and don’t slip.” Then, he comes to a small, windowless room. From above, drops of condensation water drip into a puddle and just miss his gray head. Cibis knows exactly where you should stand. Gesturing like a proud father who is showing off his son’s report card, he points into the room. Two rather plain containers made of plastic are standing there. The small mechanism looks like a cylinder and is the color of gray asphalt. The entire technical marvel is only about three medium steps long. Numerous copper and plastic tubes run into and out of the mechanism. They get lost in the tangle of pipes on the ceiling. “We have to remove the carbonic acid from the water that we want to use for steam,” the 50-year-old energy worker says. “Unfortunately, it is not as easy as with a mineral water bottle that you just leave open for a while,” he says. “That means the water has to be chemically treated. But that’s expensive, not particularly good for the environment and rather complicated.” Thanks to the new type of membrane deaerator suggested by Klaus Cibis – which was previously used in completely different contexts – ThyssenKrupp does not have to use any chemicals to remove CO₂. The company saves about 160,000 euros annually as a result – and Klaus Cibis used his award to fulfill a long dream: a weeklong visit to Vienna for his wife and him.

“You have to move sand if you want to find nuggets,” ideas manager Frank Kühn says. For every idea like the one submitted by Klaus Cibis that produces big dividends for the company, many other small ideas have to be processed. The company’s leading ideas producer is the Benrath plant. Here, the internal “ideas traffic light,” which shows just who is coming up with the ideas, is burning bright green. In 2004, the workers at Benrath offered more than 2,800 suggestions – that amounts to about four suggestions per worker. “That sort of average is almost too much of a good thing,” Kühn says and points to his traffic-light statistics. “After all, it takes a lot of energy to sort the good ideas from those that aren’t so good.” Still, every suggestion is examined with the same care. “The uncomplicated ideas play a major role in the employees’ work day.”

This view is shared by Dr. Rudolf Carl Meiler, who is thinking about ways to create a bonus system for the experts who review the suggestions. “This will give the experts an extra shot of motivation. Up to now, they have been doing the work on an unpaid basis.” In the future, Meiler wants to announce specific subjects that employees should think about. “The subjects will include accident prevention as well as energy use, environmental protection and the maintenance of machines and facilities,” Meiler says. And this program will offer payments for even slight improvements. This attitude is nothing new. It was also reflected in a Krupp poster for the program back in 1953/54: “Even the smallest ideas are welcome.”

Twin incentive: problem solutions and bonuses

“You have to understand one thing,” Klaus Dreyer says and begins to sketch a cold rolling mill for later use. “The bonus is just one side of the coin. Once a suggestion is put into practice, I have an even bigger benefit: I have gotten a lousy problem off my back.”

If you needed a “go-getter” for an advertising spot – Klaus Dreyer would be the man for the job. Dark crewcut, black mustache, powerful hands. With his father, he used to take care of the small scrap yard. Today, he is the handyman who paints the garden fence at his six-family building. Dreyer used to be a coal miner. Now, he is the foreman of the cold-rolling line 3.

As the safety officer, Dreyer’s suggestions often concern protection of workers and accident prevention. His tip: “Good writing is half the battle.” He says that the most important aspect of a suggestion is that it not only should describe the problem, but also should detail the solution. “The suggestion must be phrased in such a way that an outsider who has never seen the facility in his life can take a look at the idea – and understand right away what the point is.” Over and over again, Dreyer has submitted suggestions as part of a team. “After all, people come up with the same idea

at nearly the same time because they are thinking about the same problem.”

That was the case with his last suggestion. He and a colleague thought it would be a good idea to detach a fan from the furnace lock. He points his index finger at the drawing of the cold-rolling mill. “Every time the fan gets clogged up, the entire line has to be shut down. Including the furnace.” He points his finger again. “It then has to be restarted – even though it really has nothing to do with the fan. In the meantime, the strip running through the line has been damaged.” A lot of precious time is lost in the process as well. And every second that the production line is down costs a lot of money. “We watched this for a while and then we just got tired of these starts and stops. We sat down in the middle of the night and entered the problem and our suggestions into the system.” After the idea was reviewed, it received quick approval. “After all, the suggestion doesn’t cost a cent,” Dreyer proudly says.

The 39-year-old has submitted 288 such ideas over the years. And the confident manner in which he directs his index finger over the problem zones on his drawing indicates that he will not run out of ideas any time soon. Klaus Dreyer, who explains his next idea with the smile of a rascal on his face and a lowered voice, is one of the kings of improvement suggestions at the Krefeld plant. And it will also be the result of his efforts when the traffic light turns green there again. ◀◀◀

Author: Simone Kaiser | Photos: Oliver Rütger







Pull out the change from your pockets, remove your belt and take off your shoes. When you pass through an airport security checkpoint, you often feel more hassled than protected. But the job of screening passengers is only one of many challenges that airports and airlines have to face in this new age of air traffic safety. Like never before in the history of civilian aviation, airports have become tightly monitored security zones. Ever since terrorists in the United States turned jetliners into deadly missiles, airports have been in a latent state of alert. And while aviation security regulations are constantly being tightened, the number of air passengers is increasing rapidly – a development that poses a challenge both to airports and travelers.

In order to increase air-traffic security, airports and airlines are increasingly focusing on more transparency. At some airports, biometrical data such as the shape of a person's face, the iris or a passenger's fingerprint are being stored for security reasons. It may not be such a big deal if you have to look briefly into a scanner or undergo a thumbprint scan. But you might run out of patience if you were asked to pass through a tetrahertz imaging device that can see all the way to your skin. Even though these devices are still being developed, the issue of air passenger security remains controversial.

The European Union has complained that the transfer of passenger data to U.S. officials, a mandatory procedure that took effect in 2004, violates passengers' rights to data privacy. Players in global air travel are increasingly confronted by the question of how far their responsibility for security may go before it encroaches upon individual freedom. ►

FASTER AND SAFER

Security investments

The European Union's air safety regulation introduced in 2002 requires that in airport transit, departing passengers who have been checked according to the strict EU regulations are to be kept separated from incoming passengers and transit passengers from non-EU countries. Security procedures in other countries are not entirely trusted.

Therefore, in Frankfurt and in other cities, non-EU arrivals are separated from other departing passengers by ceiling-high walls. At the relatively new Munich terminal for Lufthansa and Star Alliance, extensive renovations were required in order to comply with the regulations. Starting on Jan. 1, 2006, airport operators are also required to check airplane crews and other airport employees, including freight company workers, when they enter high-security areas. The Frankfurt Fraport AG expects that the costs associated with the construction of additional security buildings and entry lanes at the many gates at the airport will climb into the three-digit millions, says the airport's head of security, Volker Zintel.

Does this mean that every airport will become a massive surveillance operation and that every airline will be an assistant for national and international security officials? There is much more at work than beeping metal detectors that a passenger encounters on his or her way to the airplane. On the ground, the passenger is "accompanied" almost continuously. Hidden or open cameras are trained on passengers. In Frankfurt, for example, more than 700 video devices constantly feed information to the control center alone. Cameras in airplanes with satellite-supported data transfer would be the next step.

Transparency, the sister of security, has become a pillar of endangered civil aviation, both literally and figuratively. Companies like Thyssen Krupp Elevator that offer boarding bridges made of glass literally fulfill the requirement of transparency in the highly sensitive operation of an airport.

So far, the culmination of the German reactions to terrorist threats is a new air safety law that empowers the defense minister to order the military to shoot down a hijacked airplane that could be used as a weapon against innocent people. Freedom above the clouds, as the German singer Reinhard Mey once sang – or freedom to shoot down? A case for the German Constitutional Court.

Authors: Jörg Kauffmann and Elizabeth Goetze | Photos: dpa, ThyssenKrupp

With two boarding bridges on the bottom and one on the top, boarding time is reduced to 25 minutes. The cantilever-over-the-wing bridge from ThyssenKrupp Airport Systems saves space.



Modern passenger centers such as Düsseldorf airport address security concerns by using open, transparent architecture.



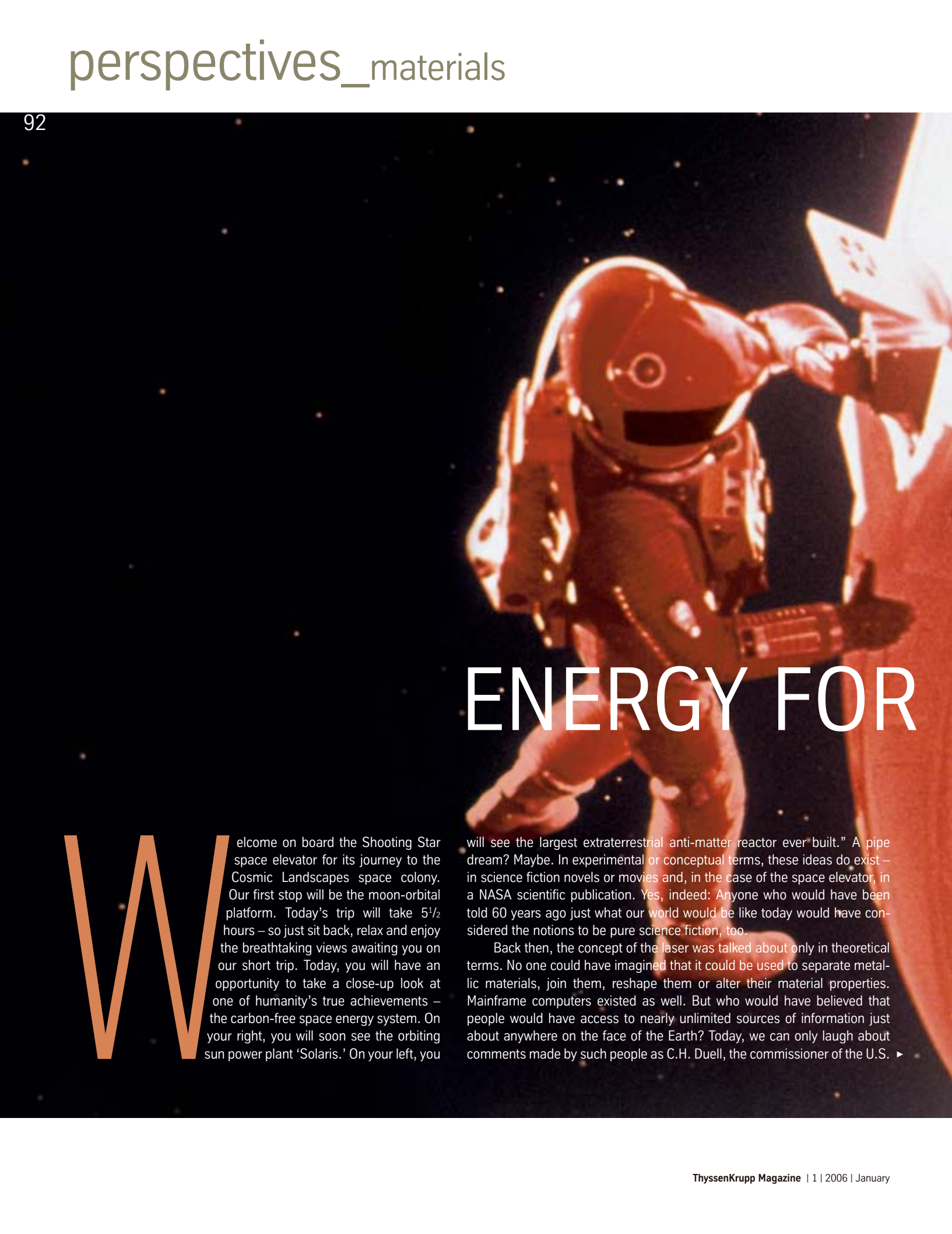
Transparent and safe: Boarding bridges with a special lifting device, like the one at Zurich airport, are already equipped to handle the new A380.

More time for safety

How should airports that are already working at capacity today fulfill the increased security requirements on the ground without risking complete congestion? If the forecasts of large airplane manufacturers such as Airbus or Boeing come true, the number of air passengers will double in the next 20 years. In 2005 alone, airlines transported about 1.9 billion passengers around the globe. Programs that help save time, including efforts directed at transit passengers, are gaining importance. The future use of the world's largest passenger aircraft is stimulating innovation as well: The high-tech airplane A380 will open a new chapter in civil aviation starting in 2007. The super jumbo will eventually be able to handle up to 800 passengers on its upper and lower decks. At the start, a capacity of 555 passengers is planned. In order to "handle" the passengers quickly, ThyssenKrupp Elevator has redesigned its proven apron-drive bridges and has developed a new so-called cantilever-over-the-wing bridge for access to the upper deck. By using three doors for each deck, the time required to board and deplane is to be reduced from 45 minutes to 25 – which also creates more time for security.

Highly sensitive transit points

Only veteran flyers will be able to recall the days as late as the 1960s when a late-arriving passenger could just dash onto the runway, hand over his or her unchecked suitcase to a luggage handler and hastily enter the airplane by using the gangway. Even back then, though, terrorism was an issue: In 1961, U.S. President John F. Kennedy signed a law that enabled aircraft hijackers to receive the death penalty if certain circumstances applied to the case. In Europe, the hijacking of the Lufthansa aircraft Landshut, carried out to force the release of imprisoned members of the RAF terrorist group in 1977, and the crash of a PanAm jumbo jet at the Scottish village of Lockerbie in 1988, caused by a suitcase bomb that was smuggled on board, remain unforgettable. In addition, the international pilot association IFALPA, whose members did not sit behind bullet-proof cockpit doors back then as they do today, sent out an early warning at the time.



ENERGY FOR

Welcome on board the Shooting Star space elevator for its journey to the Cosmic Landscapes space colony. Our first stop will be the moon-orbital platform. Today's trip will take 5½ hours – so just sit back, relax and enjoy the breathtaking views awaiting you on our short trip. Today, you will have an opportunity to take a close-up look at one of humanity's true achievements – the carbon-free space energy system. On your right, you will soon see the orbiting sun power plant 'Solaris.' On your left, you

will see the largest extraterrestrial anti-matter reactor ever built." A pipe dream? Maybe. In experimental or conceptual terms, these ideas do exist – in science fiction novels or movies and, in the case of the space elevator, in a NASA scientific publication. Yes, indeed: Anyone who would have been told 60 years ago just what our world would be like today would have considered the notions to be pure science fiction, too.

Back then, the concept of the laser was talked about only in theoretical terms. No one could have imagined that it could be used to separate metallic materials, join them, reshape them or alter their material properties. Mainframe computers existed as well. But who would have believed that people would have access to nearly unlimited sources of information just about anywhere on the face of the Earth? Today, we can only laugh about comments made by such people as C.H. Duell, the commissioner of the U.S. ▶



FUTURE DREAMS

Office of Patents, who forecast in 1899: "Everything that can be invented has been invented." Nonetheless, we still have a hard time imagining that our descendants will get their energy from space one day.

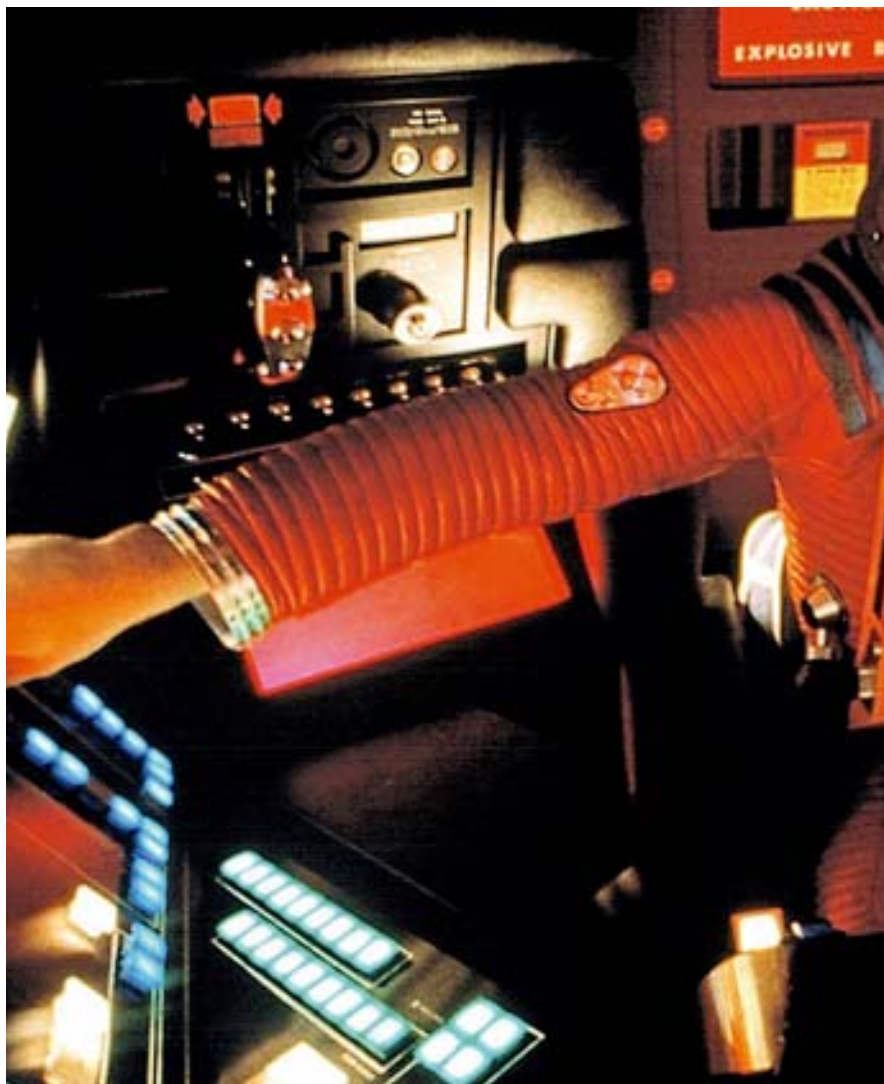
Still, the extraordinary strides made in recent decades are encouraging signs that the major challenges of our time, in particular the future of energy supplies, will be overcome with a pioneering spirit, resourcefulness and courage.

One key focal point of this research is materials. That is because materials are the stuff of technical dreams. The development of the material known as steel launched the Industrial Revolution. The processing of sturdy lightweight alloys formed the foundation of commercial aviation. And the age of information technology would have been unthinkable without semiconducting materials. In fact, science fiction was using the term "progressive material" long before materials research evolved into its own discipline.

Race against time

The problem can be stated succinctly: Right now, about 90 percent of the world's energy needs are being covered by fossil fuels. And demand is climbing rapidly, primarily because of pent-up demand in the Third World and emerging nations. Experts estimate that the world's energy needs will triple in the next 100 years. But the Earth's supplies of crude oil and natural gas will dry up in just a few decades. Coal deposits could last for about 200 more years, but the use of coal as an energy source is questionable in environmental terms. Nuclear energy has been rejected by the citizens of Germany and in parts of Europe because of safety and disposal concerns. Renewable energies are not economically viable compared with conventional energy sources. A miracle weapon that could wipe out the energy problems of the human race does not appear to exist.

Leading environmental officials like Klaus Töpfer, Executive Director of the U.N. Environmental Program (UNEP), know



»The Stone Age did not end because there were no more stones. Rather, it ended because new materials were discovered. The development of new materials is the main driver behind future energy technology.«

Dr. Johannes Teyssen, Chairman of the Board of Management of E.ON Energie AG

just how pressing the problem is. "The way we use energy today has an impact on the stability of our planet," Töpfer warned at a conference of materials experts that was held in Essen in October 2005 (see box). Given last year's increase in powerful hurricanes and floods, people find it easy to agree with Töpfer. "Global warming can be stabilized at an extra 2 degrees Celsius only if greenhouse gas emissions are cut by 80 percent," said Mark Radka, an official at UNEP's Paris office. But based on current trends, the International Energy Agency is forecasting that greenhouse gas emissions will rise by more than 50 percent through 2030. Whether the goal is environmentally friendlier production and conversion methods

or lower loss distribution – the experts agree: Materials offer the best chance of overcoming the current barriers. These experts hope that the use of new and improved materials will boost the technically achievable potential of current energy sources and promote the development of new energy production systems. If such strides were made, the world's huge appetite of tomorrow could be satisfied without increasing emissions at the same time.

Currently, energy efficiency is not particularly high: In Germany, for instance, only about one-third of consumed energy is really used as energy in the form of heat, electricity or motion. The huge amount of remaining energy is lost during various conversion processes that turn one form of energy into another. Electricity production is one example. In a first step, heat and then steam are produced in a process that also generates huge losses. The steam is converted into kinetic



“Davos of materials” in Essen

“Materials research and materials technology – energy for the 21st century” was the main theme of the first Rhine-Ruhr International Materials Conference, to which the Initiativkreis Ruhrgebiet welcomed about 130 leading international materials experts at the Villa Hügel in Essen from Oct. 23-24, 2005. The materials prize, which was awarded for the first time last year and has the highest amount of prize money at 100,000 euros, was presented to Georges Martin, a scientific adviser to the French Atomic Energy Commission (CEA). He was honored for his breakthrough materials concept of so-called “driven alloys” for use in the production of highly resistant materials that will play a significant role in the construction of power plants. A second award went to Adolf Goetzberger, founder of the Fraunhofer Institute for Solar Energy Systems, for his lifetime of achievement.

Platforms for knowledge exchange

As part of the “Partners for Innovation” initiative sponsored by the German government, ThyssenKrupp AG created the “Werkstoffinnovation” (“Materials Innovation”) working group. The group is designed to help bundle comprehensive materials skills, and to promote the national and international exchange of knowledge between researchers and industry (www.innovationen-fuer-deutschland.de). The Internet portal www.werkstoffregion-ruhr.de serves as an interface that interweaves the work of universities and research institutes with industry. At the moment, about 800 institutes in Europe are working on materials for use in energy technology.

energy that is used to turn turbines and the generators connected to them (at additional losses of energy).

Improvements in such material properties as temperature and corrosion resistance or fatigue performance can help minimize energy losses by increasing the efficiency of energy conversion or storage. Through the use of new plastics, less energy is needed to run planes, ships, trains and cars. Emissions are also reduced, and noise levels are lowered. Volker Wittwer of the Fraunhofer Institute for Solar Energy Systems estimates that more than 80 percent of Germany’s heating usage could be cut if such new insulation materials as nanofoam or vacuum insulation were used.

Another major opportunity for innovative materials will be the modernization of conventional power plants that will be carried out in just a few years. Germany’s biggest utilities estimate that half of the country’s power plant network, with a capacity of more than 40,000 megawatts, will have to be replaced through 2020. Throughout Europe, five times as many power plants must be modernized. Plans are focusing on efficient power plants fired by coal and natural gas whose increased efficiency will enable the amount of fuel and carbon-dioxide emissions per produced energy unit to be reduced considerably. Each percentage point increase in the efficiency of the country’s power plants amounts to the electricity production of a large conventional plant or of more than 1,000 wind-power rotors. Thanks to high-temperature materials, the energy efficiency of coal-fired power plants could be doubled in the past 50 years. And “if all power plants around the ►

world were brought up to the latest standards, CO₂ emissions could be cut by 1.5 billion tons,” E.ON Energie head Johannes Teysen said at the Essen conference.

Start-up help for renewable energies

Solutions to increase energy efficiency and to lower energy use are particularly important because new “zero-emission” energy technologies like wind and solar power, hydrogen technology, fuel cells and nuclear energy still have a long way to go before becoming marketable – here, too, new materials will play an important role:

Wind power: By 2030, an additional 20,000 megawatts are to be produced by off-shore wind facilities built in Germany’s territorial waters. This goal presents materials researchers with an enormous challenge because of the extreme conditions that such facilities must withstand. When the wind turns into a storm, the rotors must be halted to prevent the blades from snapping off. This shutdown is usually carried out well ahead of time for safety reasons. So-called “intelligent materials” that react on their own to external influences like changes in temperature, pressure or light could help here.

perature superconductors would be needed, and this work, too, would require the use of materials.

Fuel cells: Fuel cells convert the chemical energy of hydrogen directly into electricity. But, right now, the wattage is too low and the costs are too high. With the heat- and corrosion-resistant special stainless steel called Crofer 22 APU, ThyssenKrupp Stainless is leading the way to the development of reasonably priced, industrial production of solid oxide fuel cells (SOFCs).

Nuclear energy: The effort to produce energy on Earth in the same way that it is produced by the sun – that is, to fuse hydrogen nuclei and to capture and use the excess energy – must solve enormous material problems. One particularly important point is the development of special alloys to be used as support structures in the fusion reactor. These alloys must withstand intense neutron radiation and avoid becoming brittle too quickly. Their atomic composition must be designed in such a way that no long-lived radioactive isotopes are created by the neutron radiation. Otherwise, the world would face the same problem that is already plaguing today’s nuclear power plants: storing waste that will remain radioactive for centuries.

The “materials researchers” of the Middle Ages, the alchemists, tried unsuccessfully to turn lead into gold. It would be an equally challenging task for today’s materials researchers. But their work would be worth more than gold if they created innovations that would help solve the unavoidable energy problems

»Two-thirds of all technical innovations are directly or indirectly reliant on the properties and subtle characteristics of the materials that are being used.«

Dr. Ekkehard D. Schulz, Chairman of the Executive Board of ThyssenKrupp AG

Solar power: Sunlight’s elusiveness has forced researchers to look for better ways to store solar power. Volker Wittwer of the Fraunhofer ISE is already dreaming about photovoltaic window surfaces that will let in differing amounts of sunlight in summer and winter, and that will help cover the cold months of the year with the aid of long-term heat storage systems that use silicate gel. Adolf Goetzberger, the founder of ISE, said the potential of solar power could be unleashed only if a global network, or World Wide Grid, were created. To accomplish this, high-tem-

bearing down on us. In his book “The Environment in the Space Age,” the scientific writer Hans Barth made a bold prediction: “The great-great ... great-grandchildren of today’s generations that, in more than 5 billion years, will hardly draw their basis of life from the mother sun around which they and their planet orbit and instead will rely on the artificial solar system that revolves around the Earth may once again pay homage to a geocentric conception of the world. And they will have good reason for doing so. That is because their Earth will really form the true ‘mid-point’ around which their anti-matter artificial suns gravitate.” ◀◀◀

Author: Anke Bryson | Photos: dpa (Stanley Kubrick, 2001: A Space Odyssey)

Epochal materials

Since the beginning of time, materials have shaped the living conditions of the human race. The epochal periods in human history – Stone Age, Bronze Age, Iron Age – have been named after the dominant material of the time. For centuries, humans created materials simply based on their experience and knew nothing of their inner structure. It was only thanks to new scientific methods developed in the last 150 years that humans were able to gain a deeper understanding of solid-state physical and chemical phenomena, and the properties of materials. This knowledge can now be used to produce tailor-made materials. Nanotechnology, for instance, creates the possibility of building materials atom by atom for individual purposes.

FILLING IN THE BLANKS

Five questions – five solutions – five prizes

People have to assume responsibility in all aspects of life. We have selected five particular aspects and want to ask you a question about each one. Those who find the right solutions and who also have a little bit of luck can be among the winners of five attractive prizes.

This is how it works: Each question has only one correct solution word. Answer the questions in any order you like and write each solution word on the crossword puzzle – it is up to you to determine where. We will give you one hint: You should read this issue of our Thyssen Krupp Magazine very closely. This will enable you to answer some of the questions more easily and more quickly.

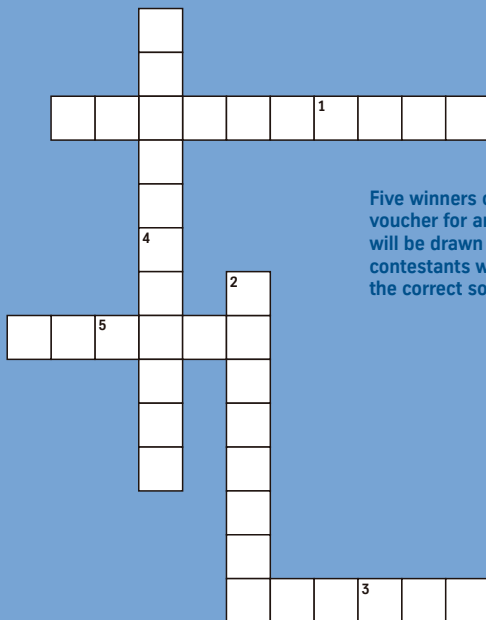
Have you entered all of the solution words? If so, you should arrange the letters written in the numbered boxes in an order that produces the

name of a country. And this name is our solution word. Please send a postcard bearing the solution word to:

**F.A.Z.-Institut
Redaktion ThyssenKrupp Magazin
Postfach 20 01 63
60605 Frankfurt am Main**

The deadline for entries is March 15, 2006. All winners will be notified in writing. The judges' decision is final.

Have a good time!



Five winners of a €100 voucher for amazon.de will be drawn from all contestants who sent in the correct solution.

Solutions of the page "forum_worth knowing"

The "Wise words" were said by:

- 1 Winston Churchill, British statesman (1874–1965)
- 2 Lao Tse, Chinese philosopher, founder of Taoism (roughly sixth century B.C.)
- 3 George Bernard Shaw, Irish author (1856–1950)
- 4 Otto von Bismarck, first German Reich chancellor and founder of the welfare state (1815–1898)
- 5 Oren Lyons, chief of the Onondaga tribe

The wanted person from "Who was it?":

Hans Jonas, philosopher and author of "The Imperative of Responsibility"

Question 1:

Beginning in the middle of the 19th century, such companies as Krupp and later Hoesch and Thyssen provided special accommodations to unmarried workers and married workers who had to leave their families behind. What was the name of the single workers' accommodations where they paid low prices for room and board?

Question 2:

Besides investing in the expansion of his company, August Thyssen donated large sums of money at the beginning of the 20th century to charitable purposes, including a home for orphans and the elderly in Mülheim. After which Italian saint was the home named (in German)?

Question 3:

Companies are also responsible for the impact that their business activities have on the environment. ThyssenKrupp uses three unwanted gases that are created during the steel production process to generate electricity or other energy for use in production. Which adjective is used to describe these three gases?

Question 4:

Nitrogen oxides are one cause of smog, acid rain and the greenhouse effect. The ThyssenKrupp subsidiary Uhde has developed an innovative technology that can help break down nitrogen oxides created in certain production processes. In some applications, though, a certain nitrogen oxide can be useful. In 1799, a British chemist happened to discover the anesthetic effect of a "funny nitrogen oxide compound" – during a rather courageous experiment he conducted on himself. Where was the chemist born?

Question 5:

The all-embracing welfare state is, "by its very nature, particularly designed to increasingly paralyze boldness, ambition, ... personal initiative and sense of responsibility, the very qualities that an economic and social order needs to exist." This warning was issued by a German politician – later German chancellor – in an essay in 1956. What was this politician's name?

ThyssenKrupp_magazine: Your Holiness, you have talked a lot about universal responsibility. What do you mean by that?

Dalai Lama: Our world is becoming smaller and ever more interdependent with the rapid growth in population and increasing contact between people and governments. This is why it is important to think about the rights and responsibilities of individuals, peoples and nations in relation to each other and to the planet as a whole.

I have always stressed that it is important to be fully aware of our reality. In our minds, we often still feel divided. But reality is not like that. All of us are very dependent on others, and others are very dependent on us. I do not know whether I am right or wrong, but I believe that every part of the world – the economy, ►

»IN ORDER TO BE
SUCCESSFUL,
YOU HAVE TO TAKE
OTHERS SERIOUSLY«

An interview with the 14th Dalai
Lama about universal and individual
responsibility





► politics, everything – is part of one single body. Individual nations, for example, cannot solve environmental problems on their own. This is why every field should be dealt with holistically. And this is why we need a sense of universal responsi-

»Without a sense of universal responsibility

bility to do justice to the fact that our reality, our whole world is like one body. We are all the same, we all strive for happiness. I am only a single person, and so is everybody else. I do not know much, except that I have studied a bit of Buddhist philosophy. But according to my own view and my own experience I believe that I am making a contribution. Others also make a contribution. It is not like a team effort, but some of the world's 6 billion people, some individuals here and there from different professions are working along a similar line. And when that happens, change is possible. No individual alone can cause change, but many individuals together can. Some leaders in the past thought that they could change the whole world, if necessary through beating, but that is impossible.

Ocean of Wisdom

For the Tibetans he is a God in a human body. In the West, his name – translated as “Ocean of Wisdom” – stands for the longing for harmony: the Dalai Lama. During his entire life, the man who was enthroned as a two-year-old has been fighting a peaceful fight for the freedom of Tibet. With Buddhist modesty and great calm, the Dalai Lama teaches the art of happiness. One of the fundamental beliefs of Tibetan Buddhism is that nothing and nobody exists of itself or of themselves, but that everything is interconnected as in a giant ecological system. “What you do to others you do to yourself,” the Dalai Lama has declared repeatedly, pointing out that all actions impact the whole.



What can we as individuals do to live more responsibly?

Sometimes difficult circumstances are quite useful to realize the deeper meaning of life, to think about our intelligence, ability and potential. When we have an easy life, we may not pay enough attention to our inner potential. In difficult circumstances, we have to pay more attention to inner values. There are two kinds of emotions. The ones that we cultivate deliberately, such as compassion, which are helpful, and the ones that are spontaneous, such as anger and hatred, which are sometimes helpful, but mostly destructive. We achieve positive emotions through effort, with the help of analysis, training, and awareness. We cultivate positive emotions. Negative emotions come together with ignorance. They become harmful and represent the greatest obstacle to the “judgment” function in our brain. So we should study, analyze and reflect to approach a change of attitude. Warm-heartedness brings us inner strength and self-confidence, and reduces fear and doubt.

I have been a refugee for most of my life and my people face extinction. During this time I have learned about inner values. When you really need a friend, they may not be available, and you may have fewer friends when your fortune goes. But inner values are always there. They never change; they are there to help you. There is no guarantee in life for an easy or successful life. It is almost certain that difficulties will happen, and that you will encounter obstacles. This is why two things are very important: a healthy body and a healthy mind. Because that gives you more self-confidence and less fear, and makes it much easier to handle difficult situations. Religious belief is also important. And a compassionate attitude, a strong feeling of concern for other people’s suffering.

I have often stressed the value of objectiveness which allows us to get a fuller picture of reality. With a biased attitude, we cannot see reality. Life is always changing – there may be success and there may be failure. No event is caused by one single factor; every event is caused by many factors. Too often, we just pick one cause out of thousands in order to identify a clear target for our anger. But reality is not that simple. We, the Tibetans, for example, cannot blame the loss of our country or our freedom simply on the Chinese. There are lots of causes.

When you realize the complexity of a situation, anger cannot find an absolute target. Negative emotions are very bad. When you want to see reality, think more holistically, about the wider perspective. That is my way of thinking and the views

I have practiced the last few decades.

What does universal responsibility mean for global corporations?

I do not know much about the economy, corporations and these sorts of things, but I believe that it is unrealistic nowadays to think only about profit. In order to generate good profits, companies need to deal with many other factors as well. They need to preserve their good image, the trust of the market and of the customer. In order to be successful, you have to take others seriously – whether you are an individual or a company. ◀◀◀

The interview was conducted by Anke Bryson.



our immediate future is in danger.«



"If you want to get things moving, you had better get moving yourself!" was the motto of the ThyssenKrupp Magazine edition that appeared in the summer of 2003. As the Chairman of the Executive Board, Dr. Ekkehard D. Schulz, put it: "We put movement into thinking." The magazine contains 20 stories as prime examples of how ThyssenKrupp makes things move. Escalators in Toledo, the mega yachts of Blohm + Voss, a water roller-coaster with steel pylons and large anti-friction bearings that find just the high-level turning point. These are just a few examples that show how ThyssenKrupp employees prove day in and day out that high-level technical progress is closely linked to constant changes in thinking and acting.



Materials form one of the core areas at ThyssenKrupp. Materials that can be used in nearly all industrial applications and that have become an essential member of daily life. Materials that ensure that fractions of a second can determine the difference between victory and defeat, or materials that will maintain the Cologne Cathedral as a monumental creation of man in coming centuries. Whether in the home, sports, food production, automobile construction, architecture or oil drilling – the articles in this issue of the ThyssenKrupp Magazine provide a lively, multi-faceted look at the fascinating and diverse world of materials.



Networking future technology is one of the challenges that ThyssenKrupp has taken on. After all, the future begins today – with products, services and, last but not least, exciting ideas. Real progress arises in international networks that develop things that form the foundation for future generations. That could be "thinking" elevators that speed up passengers' trips or "intelligent" escalators that conduct self-diagnosis. From the "Jugend forscht" youth science competition to innovation management and to apprenticeship jobs of the future – the articles in this magazine show how ThyssenKrupp has committed itself to developing trend-setting technologies and to promoting the innovative forces of our society.

The magazines can be ordered at www.thyssenkrupp.com in the service navigation area under "Publications."

Imprint

Publisher

ThyssenKrupp AG, Dr. Jürgen Claassen,
August-Thyssen-Strasse 1, 40211 Düsseldorf,
Telephone: +49 211-824-0

Project Management at ThyssenKrupp:
Barbara Scholten

The contents do not necessarily reflect the views of the publisher. Excerpts may only be reproduced with attribution and if a sample copy is provided.

Publishing house and editorial offices: F.A.Z.-Institut für Management-, Markt- und Medieninformationen GmbH, Mainzer Landstrasse 199, 60326 Frankfurt am Main, Telephone: +49 69-75 91-0,

Fax: +49 69-75 91-1966

Managing Directors:

Dr. Gero Kalt, Volker Sach, Peter Steinke

Project Management: Ludger Kersting

Editor: Anke Bryson

Art Director: Wolfgang Hanauer

Layout: Jacob Schulligen

Authors: Anke Bryson, Elizabeth Goetze, Simone Kaiser, Kristina Merkner, Jörg Kauffmann, Aaron Kirchfeld, Alexander Schneider, Tim Schröder, Margit Uber, Ulrike Wirtz

Photos: Kornelia Danetzki (p. 58), Michael Dannenmann (p. 26), dpa (p. 8, 11, 17, 24, 61, 88, 99, 100, 101), Thomas Ernsting/Bilderberg (p. 6, 30), Getty Images (p. 2, 103), Dieter Rüchel (p. 62), Daniel Stier (p. 28), Suncor Energy (p. 60)

Lithography: Goldbeck Art, Frankfurt am Main

Printing: Kuthal Druck, Mainaschaff

We would be happy to give you more information on other subjects.

Please affix
postage

ThyssenKrupp AG
ZB Communications and Strategy / BP
August-Thyssen-Straße 1
40211 Düsseldorf
Germany

If you would like us to keep you up to date on the latest developments, please fax the attached card to **+49(0)211-824-36040** or send it by mail.

ThyssenKrupp's doors are always open on the internet. The company's sites not only offer comprehensive information for anyone interested in ThyssenKrupp, but also enable visitors to get in contact with us whenever they wish. So why not surf over to www.thyssenkrupp.com and check out what we have to offer.

Please enter my details in your
distribution list

Please send me ___ further copies

	Issue	German	English
___ Copies	"Responsibility"	☐	☐
___ Copies	"Networking Future Technology"	☐	☐
___ Copies	"Materials"	☐	☐
___ Copies	"Motion"	☐	☐

We would be happy to give you more information on other subjects.



A satellite night view of the Earth, showing the outlines of continents and islands illuminated by city lights. The lights are concentrated along the coastlines and in major urban centers, creating a glowing pattern against the dark background of the oceans. The colors are primarily blue and white, with the lights appearing as bright yellow and orange dots.

»Imagination is more important than knowledge. For knowledge is limited.«

Albert Einstein,
physicist and Nobel Prize laureate (1879–1955)

