

Healthcare

D Z B A N K R E S E A R C H

Eckert & Ziegler

**Recommendation:
Buy**

Year ¹⁾	Sales in million Euro	EPS Euro	Cashflow/ per share Euro	PCF	PER	DPS Euro
2000	23.6	0.40	1.46	35.8	130.8	-
2001e	32.0	0.73	1.88	7.4	19.2	-
2002e	37.2	1.08	1.95	7.2	12.9	-
2003e	42.9	1.35	2.39	5.9	10.4	-

*) Business year ending 31.12

Price on 01 October 2001

(Euro) 14.0

Upside potential (%
6-month horizon): 55

Risk classification: 5

Relative PER (2002e) 0.74

Financial ratios 2001e:

Book value/share (Euro): 11.74

Equity ratio (%): 65.9

Return on sales (%): 9.4

Ebitda margin (%): 24.3

ROE after tax (%): 9.2

Number of shares

(Million units): 3.25

Market capitalization

(Million Euro): 45.5

Free float: 32.1

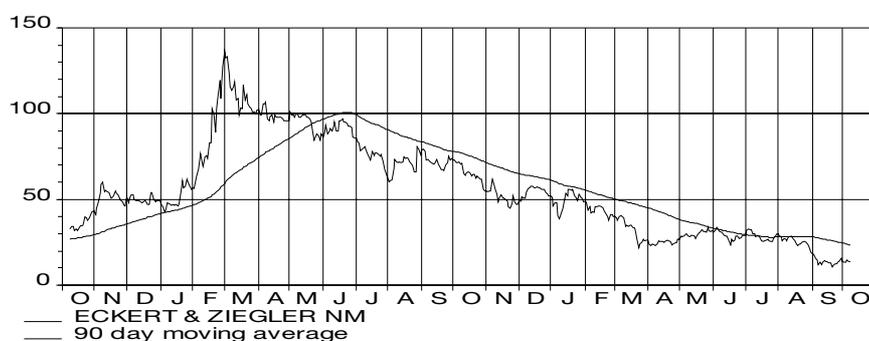
SIN: 565 970

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Bloomberg code EUZ.NM

Price collapse not based on fundamentals

- Isotope specialist focused on growth markets
- Expanding successful business model to include radiopharmaceuticals
- Latest success report from drug-coated stent technology sector has only limited negative impact on Eckert & Ziegler
- DCF analysis results in a fair value of euro 21.9 per share
- Conclusion: we view the share as currently undervalued and commence coverage with a buy recommendation



Source: DATASTREAM

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Research
Platz der Republik
60265 Frankfurt

Dr. med. Jochen Badouin
Christian Englert

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Investment case

Eckert & Ziegler Strahlen- und Medizintechnik AG is one of the leading specialists worldwide in the development and production of weak sources of radiation. The radiation components manufactured by the Berlin-based company are used primarily in measuring technology and medical applications.

The medtech company focuses on the high-growth specialised areas of modern radiation treatment in the oncology and cardiology business sectors. Eckert & Ziegler is renowned for its miniature radiation components which are used in radiation systems for minimally invasive treatment of prostate cancer and narrowing of the arteries.

The company's two core business sectors "nuclear medicine" (medical reference sources) and "industry" (industrial sources) achieved total sales of just under euro 24 m (plus 137% over the previous year) in the previous business year and an operative result of over euro 2m. In view of increased demand for effective and at the same time cost-effective therapeutic methods, high level of developmental expertise and strategic cooperation with leading producers of medical devices, we predict annual average growth in sales of 19.6% for Eckert & Ziegler over the coming 4 to 5 years. Increasing profitability is reflected in the disproportionately high growth in earnings to sales (CAGR 2000 to 2005e: 40%).

The acquisition of the radiation source business from the US pharmaceutical company DuPont in June of the previous year and its integration in the Californian subsidiary Isotope Products Laboratories (IPL), which was already acquired in 1999, resulted in an increase in the global market share of nuclear medicine reference sources from around 30% to 65%. The company therefore plans to achieve sales revenue of just under euro 10m for the current business year 2001. At the same time, the acquisition of both companies represented a considerable step towards internationalisation and establishing a presence in the US which is the most important medtech market worldwide.

Eckert & Ziegler's clearly structured business model is based on two pillars: firstly, sales of end products (seeds, eye applicators) and secondly, the sale of know-how within the cooperation framework with renowned medical devices and life science providers. These partnerships generally ensure that Eckert & Ziegler's development and investment costs are subsidised through the system partners, so that the investment risk in establishing new product lines remains calculable.

Involvement in navigation robotics since 1999 rounds off Eckert & Ziegler's oncology product portfolio. Integrating the robot-supported positioning systems from the recently disposed jojomarie Intelligente Instrumente GmbH in the development subsidiary BEBIG GmbH, should further expand the value-added chain in this sector.

In terms of its orientation for the future, the company is concentrating mainly on expanding the existing product portfolio and expanding attractive contiguous market segments. An example is the recently announced alliance with NEMOD (New Modalities Heilmittel GmbH), the cancer vaccine specialist based in Berlin, which should allow the isotope technical expertise to be implemented to develop radioactive marked antibodies. Entry in the new radio-

Leading technological position in sources of radiation for medical technology

Focus on growth markets

Sales CAGR of around 20% forecasted for period between 2000 and 2005e

Position as global market leader secured through acquisition of nuclear medicine reference sources

Part-financing through cooperation partners minimises risk

Developing navigated positioning systems extends the value-added chain

Expansion of existing business sectors and securing new medtech business sectors

pharmaceutical business sector will expand the nuclear treatment range, in particular products for cancer treatment. We predict significant upside potential for Eckert & Ziegler in the event of success for “proof of concept” of this promising technology. Given that this has not been taken into consideration in our sales and earnings model, our company valuation is rather conservative.

Since the beginning of the year, the company has improved its order book situation considerably through a series of high-volume supply contracts, thus laying the foundation for very promising medium- to long-term business development. In spite of early new investment required to expand production capacities to meet the agreements to supply nuclear medical radiation sources, cardiovascular components and implants for the treatment of prostate cancer, this will contribute significantly to achieving the committed sales and earnings objectives.

The market for radiation sources in medicine is a growth market with high entry barriers. As an international isotope specialist, Eckert & Ziegler is very favourably positioned in this environment and in our opinion, should continue to participate in this growth. Given that the recently published success reports of competitive technology in cardiology (drug-coated stents) represent no threat to Eckert & Ziegler’s business model, we view the massive price fall in recent weeks as negative exaggeration by the market.

Based on our valuation model (DCF and SWOT analysis), the share is significantly undervalued. With an upside potential of 55% on a six-month horizon, we therefore recommend the share as a buy. The price target is euro 21.9.

Strengthening order book situation ensures medium-term growth

Sustained participation in growth of relevant markets

Recommendation: buy
Upside potential: 55%

Company valuation

We have applied both quantitative and qualitative methods for the purpose of company valuation. The basis for quantitative valuation is a comparison of the relative indicators of two different peer groups (domestic and closest comparable peers) and a DCF valuation including a scenario analysis. A complete valuation model is created by including internal (strengths and weaknesses) and external (opportunities and risks) qualitative influencing factors.

Comparison of key figures: Neuer Markt peers

In addition to Eckert & Ziegler, an additional eleven healthcare shares are listed in the NEMAX Medtech&Healthcare index. Given that both BB Medtech (holding company) and Euromed (clinic project company) neither manufacture nor distribute medical devices, they were not taken into consideration. Although the remaining nine medtech companies are not direct peers of Eckert & Ziegler (they do not operate in weak sources of radiation), they are regarded as most suitable comparable companies in Germany in terms of size, growth momentum and market environment.

aap-Implantate is a specialist in endoprosthetics (artificial articulation replacement), osteosynthesis (using plates, nails or screws for bone reconstruction) and orthobiology (bone cement and bone graft substitute). The company is estimated to achieve sales of around euro 32.3m in 2002. It broke even in the previous business year of 2000. The EBITDA margin for 2002 is estimated at 22%.

Asclepion-Meditec manufactures medical laser equipment for ophthalmic, dermatological and dental applications. We anticipate Asclepion will achieve sales of euro 47m in the business year 2001/2002e. The operative EBITDA margin for 2001/02e will amount to around 6%.

Biolitec produces photodynamic therapies based on diode lasers and photo sensitizers (light-activated drugs). Sales of around euro 35m are expected for the business year 2001/02e and the company should break-even in the business year 2002/2003e.

The Austrian company Kretztechnik develops and produces 2D and 3D ultrasound equipment for various areas of medicine such as gynaecology, radiology, urology, surgery and internal medicine. The company is expected to achieve sales of around euro 160m and an estimated EBITDA margin of 14% in the business year 2002e. GE Medical Systems has proposed an offer of euro 17 per share to outside shareholders.

Pulsion Medical Systems, the medtech company listed on the Neuer Markt in June of this year develops and distributes patient monitoring systems in intensive medical care. We estimate sales of around euro 25m and an EBITDA margin close to 9% for the business year 2002e.

Rösch Medizintechnik AG is involved in needle-free injection systems, audiometers and digital x-ray technology. We are forecasting sales of around euro 18.4m and an EBITDA margin of around 1% for the business year 2001/2002e.

United Medical Systems distributes medtech equipment produced by external manufacturers in the areas of urology, orthopaedics and gynaecology. Further-

Comparison of key figures, DCF and SWOT analysis

German medtech companies do not operate in Eckert & Ziegler's segment

aap-Implantate

Asclepion-Meditec

Biolitec

Kretztechnik

Pulsion Medical Systems

Rösch Medizintechnik

United Medical Systems (UMS)

more, it offers services such as operating treatment centres and providing large medical equipment for clinics. We estimate sales of around euro 66m in 2002e and an EBITDA margin of around 37%.

Wavelight Laser Technologie develops, produces and distributes lasers for specialist areas of medicine such as surgery, dentistry, dermatology and ophthalmology. 2001/02e sales and EBITDA margin as estimated at euro 33m and 14% respectively.

World Of Medicine (W.O.M.) manufactures products for minimally invasive surgery (MIS). The product portfolio includes insufflators, medical pump systems, lasers and cameras. We expect sales of euro 49.8m and an EBITDA margin of around 21% for the business year 2002e.

Wavelight Laser Technologie

World Of Medicine (W.O.M.)

Eckert & Ziegler: Neuer Markt Peers

Company	Current price	Market capitalisation in Euro (m)	PER 2002e	EV/ sales 2002e	EV/ EBITDA 2002e	EBITDA margin 2002e	EPS CAGR 2000-2003e	Break-even
aap Implantate	5.00	23.8	7.8	0.69	3.18	21.8%	93.6%	2000
Asclepion-Meditec**	6.40	39.7	39.4	0.67	9.96	6.7%	n.a.	1999
Biolitec**	6.31	69.4	n.a.	1.67	n.a.	-2.8%	n.a.	1997
Kretztechnik *	13.73	171.6	17.6	1.19	8.54	13.9%	n.a.	1997
Pulsion	5.00	39.3	35.6	2.90	31.52	9.2%	n.a.	2002 e
Rösch**	3.70	18.2	n.a.	0.42	6.06	6.9%	n.a.	2003 e
UMS	12.75	74.0	9.7	0.88	2.35	37.4%	97.2%	2000
Wavelight**	6.70	21.0	6.3	0.57	3.45	16.5%	n.a.	2001 e
W.O.M.	8.55	70.1	15.3	1.10	5.26	20.9%	65.3%	1997
Eckert & Ziegler	14.00	45.5	13.0	1.08	4.45	2.3%	49.4%	2000
Mean value excluding Eckert & Ziegler			18.8	1.12	8.79	14.5%	85.4%	
Median excluding Eckert & Ziegler			15.3	0.88	5.66	13.9%	93.6%	
Upside potential in % in relation to median			18%	-19%	27%			

n.a.: due to losses incurred in the reference or business year

* weighted price of the GE Medical takeover bid, ** diverging business year adjusted to calendar year

Source: Bloomberg, I/B/E/S and DZ BANK estimates

The comparable companies selected from the Neuer Markt medtech segment show an estimated mean EPS CAGR for the period 2000-2003e of 93.6% and a mean EBITDA margin of 13.9%. During the period under review, Eckert & Ziegler shows a comparably lower EPS growth of 49.9% while the EBITDA margin of 24.3% lies considerably above the peer group. Given that it is based on only three comparable figures, we view the mean EPS CAGR as less representative.

On the basis of PER and EV/EBITDA, the Eckert & Ziegler share is undervalued in comparison with the peer group (while the mean EV/EBITDA for the group is 5.66, it is only 4.45 for Eckert & Ziegler). The EV/sales multiple indicates the company is slightly overvalued. In our opinion, the relevant EV/EBITDA ratio reflects profitability, therefore providing the clearest indication of the company's undervaluation.

German medtech companies with high growth expectations

Relevant EV/EBITDA ratio indicates significant undervaluation

Comparison of key figures: closest comparable peers

No company operates in all segments in which Eckert & Ziegler is represented. We have therefore collated a group of international comparable companies competing directly with Eckert & Ziegler in the various business sectors. Please refer below to “The competition” for an analysis of competitor companies.

Companies with comparable business sectors

Eckert & Ziegler: Peers – Closest Comparables								
Company	Current price	Currency	Market capitalisation in LC (m)	Market capitalisation in Euro (m)	PER 2002e	EV/sales 2002e	EPS CAGR 2000-2003e	Break-even
Amersham Plc	5.8	GBP	3.651.3	5.914.1	20.2	2.43	12.9%	1998
North American Scientific Inc.*	10.8	USD	109.2	119.8	185.1	4.74	n.a.	2001 e
Theragenics Corp.	9.2	USD	273.6	300.2	16.5	4.28	4.5%	1994
Eckert & Ziegler	14.0	Euro	45.5	45.5	13.0	1.08	49.4%	2000
Mean excluding Eckert & Ziegler					73.9	3.8	8.7%	
Median excluding Eckert & Ziegler					20.2	4.3	8.7%	
Upside potential in % in relation to median					55.5%	296.9%		

n.a.: due to losses incurred in the reference or business year, * diverging business year adjusted to calendar year
Source: Bloomberg, I/B/E/S and DZ BANK estimates

The closest comparable peer group shows that on the basis of all key figures, the competitors are overvalued in comparison with Eckert & Ziegler. In our opinion however, the possible risk of their products being substituted by the US shares “North American Scientific” and “Theragenics” is not discounted sufficiently in the price. Hence, no upside potential can therefore be derived.

In summary, the comparisons of the closest comparable peer group and Neuer Markt peer group show that the Eckert & Ziegler share is undervalued.

Discounted cash flow model

Given the limited significance of the peer group comparisons due to the above stated reasons, we ascribe the greatest importance to the valuation drawn from the DCF model. Our calculations are based on the free cash flows (FCF) discounted using the weighted average cost of capital (WACC). By means of regressions analysis against the DAX, we have derived a Beta of 1.38. This results in a WACC of 9.52% and a perpetual annuity growth rate of 0% (conservative estimate).

Some of the companies' risks not discounted sufficiently

Eckert & Ziegler undervalued in relation to relevant peer groups

DCF valuation most representative

**Discounted Cashflow Valuation
Entity-WACC-Model**

Mio Euro	2001e	2002e	2003e	2004e	2005e	2006e	Ewige Rente 2007e
EBIT	4.6	6.2	7.6	9.8	11.8	12.4	11.1
+ Interest expenditure on pensions provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
+/- Extraordinary result	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adjusted EBIT	4.6	6.2	7.6	9.8	11.8	12.4	11.1
- Adjusted taxes on earnings of the company	-2.2	-2.7	-3.3	-4.2	-5.1	-5.4	-4.8
Net Operating Profit After Tax (NOPAT)	2.4	3.5	4.3	5.6	6.7	7.1	6.3
+ Depreciation/Amortisation of tangible/intangible assets.	3.7	2.8	3.4	3.6	3.9	3.7	3.5
- Investments in tangible/intangible assets.	-4.2	-3.1	-3.2	-3.7	-2.7	-2.7	-2.6
+/- Change in provisions/special items	0.0	0.0	0.0	0.0	0.0	0.0	0.0
+/- Change working capital	-1.2	-0.8	-0.8	-1.1	-1.5	-1.0	0.0
+/- Change in other current assets	0.8	-0.8	0.0	0.0	0.0	0.0	0.0
Free cash flow	1.5	1.7	3.7	4.4	6.4	7.1	7.2
Cash values of free cash flows on the valuation date 09/2001	1,6	1,6	3,2	3,5	4,6	4,6	49,4
Total cash value of free cash flow	68.4						
+ Market value of non-essential assets	0.1						
+ Liquid assets/Securities/Interest-bearing financial assets	7.8						
Equity value	76.3						
- Financial debt/Pensions provisions	-5.0						
Market value of equity (incl. Minority interest)	71.3						
- Market value of minority interest	0.0						
Market value of equity (excl. Minority interest)	71.3						
Market value of equity per share, fully diluted (Euro)	21.9						

Year end per 31.12.

Source: Eckert & Ziegler AG und DZ BANK Schätzung

The above stated factors result in a market value of equity of euro 71.3m. The present value of the perpetual annuity amounts to around 70% of the company's total value. The market value of equity thus calculated gives a fair value of euro 21.9 for the share. Assuming the current price of euro 14, this corresponds to an upside potential of around 55%.

DCF model yields a fair value of euro 21.9 per share

Scenario analysis

The scenario analysis shows the fluctuation range of the enterprise value assuming a consistent WACC and variable growth rate in the perpetual annuity of between 0% and 2%. The enterprise value of between euro 71.3m and euro 84.4 m corresponds to a value of between euro 21.9 and euro 26 per share.

Scenario I assuming constant WACC

Enterprise value in Euro m					
Perpetual annuity growth rate	WACC				
	8.52%	9.02%	9.52%	10.02%	10.52%
0.0%	80.0	75.4	71.3	67.5	64.2
1.0%	87.7	82.1	77.1	72.6	68.7
2.0%	97.7	90.6	84.4	79.0	74.2

Source: DZ BANK

Assuming a variable WACC and constant growth rate in perpetual annuity (0%), the enterprise value lies between euro 64.2m and euro 80m. This represents a fluctuation between euro 19.7 and euro 24.6 in the value per share.

Scenario II assuming a constant growth rate in perpetual annuity

Enterprise value per share in Euro					
Perpetual annuity growth rate	WACC				
	8.52%	9.02%	9.52%	10.02%	10.52%
0.0%	24.6	23.2	21.9	20.8	19.7
1.0%	27.0	25.2	23.7	22.4	21.1
2.0%	30.1	27.9	26.0	24.3	22.8

Source: DZ BANK

SWOT analysis

Strengths	<ul style="list-style-type: none"> ▪ Strong market position as isotope specialist ▪ Global market leadership in nuclear medical reference sources ▪ Established business relationships with leading manufacturers of medical equipment ▪ International orientation with market presence in core markets (US and Europe) ▪ Focus on growth markets ▪ Investment risk minimised through financial participation of cooperation partners ▪ Nisch player in high-margin market segments 	<ul style="list-style-type: none"> ▪ Supply of raw materials from politically unstable countries ▪ Dependency on major customers and cooperation partners ▪ No own end products in cardiology (supplier function) ▪ Product emphasis on one segment ▪ Dependency on established development team 	Weaknesses
Opportunities	<ul style="list-style-type: none"> ▪ Growing market for minimally invasive treatment ▪ Sustained participation in relevant market growth through competitive advantage ▪ Increased importance of brachytherapy of prostate carcinomas ▪ Rising demand for radiotherapy ▪ High barriers to market entry protects against further competition 	<ul style="list-style-type: none"> ▪ Concentration on a small specialist field ▪ Brachytherapy replaced by new innovative treatment methods ▪ Falling acceptance of brachytherapy by the medical profession ▪ Highly competitive environment ▪ Manufacturers of medical equipment producing own components ▪ Negative development of radiobiology ▪ Potential sale of share held by resigning member of the Board of Managing Directors could theroretically burden share price 	Threats

Source: DZ BANK

Analysis of the quantitative factors shows that strengths and opportunities outweigh the weaknesses and threats. The strong presence in the most important distribution markets of North America and Europe and a focus on high-margin markets with growth momentum must be emphasised.

Recommendation

Given that the companies cannot be easily compared, a fair valuation cannot be derived from the peer groups. We therefore consider the analysis using the DCF model in conjunction with the qualitative valuation criteria as relevant in calculating the fair enterprise value. The considerable undervaluation of the share is evident on the one hand from the fair value of euro 21.9 per share as derived from the DCF analysis and on the other from the clear predominance of the strengths and opportunities over the weaknesses and threats (SWOT).

We consider the drastic price losses in recent weeks as negative exaggeration by the market, which is mainly based on an overrating of the negative impact on Eckert & Ziegler's business development by the current topic of conversation, drug-coated stents (the recent publication of the results of the RAVEL study resulted in extreme price fluctuations in shares of almost all listed providers of cardiological medical devices). However, the effect is limited to the company's rather small cardiology business sector (share of total sales in 2004e: 7.5%). We do not expect any significant loss of sales through predatory

Strengths and opportunities predominate**Undervaluation evident from valuation model****Price decline not based on fundamentals**

competition before 2004. From 2005, in line with our conservative planning, we expect the cardiology business to cease entirely.

Founding Board Member Herr Jürgen Ziegler has announced his resignation from the Board of Managing Directors to join the Supervisory Board and to act as consultant for the American subsidiary IPL due to reasons of health and age. He will be succeeded by Dr. Löffler, a medical physicist with many years of experience in isotopics, who was already appointed to the Board of Managing Directors in May 2001. According to the company, Herr Ziegler does not currently intend selling a large stake of his shareholding which exceeds 20%. This statement was supported by the fact that following the end of the lock-up period at the end of 1999, Members of the Board did not carry out any significant sales. Given the ongoing commitment to the company and the internal decision on a pre-emptive right by the remaining members of the Board of Managing Directors, we expect that possible share sales could be theoretically placed on an asset allocation basis with no adverse affect to the price.

We regard the expansion in the radiopharmaceutical sector as an appropriate addition to the previously successful business model, where new target markets with long-term growth potential can be tapped, thus increasing the shares' upside potential. Given that it is yet in its infancy, we have not taken the radiopharmaceutical sector into consideration in our evaluation.

Conclusion: having weighed up the above stated factors we recommend the share as a buy. The upside potential on the six-month horizon is 55%.

Disposal of shareholding by resigning founding Board Member should not burden share price

Radiopharmaceuticals not yet accounted for in the upside potential

**Recommendation: buy
Upside potential: 55%**

Company profile

Corporate purpose

Eckert & Ziegler, the medtech company listed on the Neuer Markt since May 1999 regards itself as a leading international specialist in developing and producing weak sources of radiation. A significant component of the business model is the participation in or incorporation of medtech and isotope technology companies, which are managed centrally by a holding within the group. The components produced by the company are used in the following four areas:

- Treatment of tumours: the company produces brachytherapy sources for the treatment of eye cancer (melanomas of the choroid membrane, retinoblastoma) and prostate cancer (prostatic carcinoma) for this field of application where radiation is traditionally used.
- Treatment for narrowing of the arteries: the minimally invasive radiation sources produced by Eckert & Ziegler are used by leading medical equipment manufacturers in special cardiological catheter systems. This method prevents restenosis (renarrowing) of the arteries following a balloon dilation.
- Imaging in nuclear medicine: isotope products are used here predominately as calibration and reference sources in gamma cameras and PET scanners to facilitate imaging-based diagnosis.
- Industrial and scientific measurement procedures: the radiation sources manufactured by Eckert & Ziegler AG's subsidiaries (IPL Inc. in the US and CESIO s.r.o. in Prague) are utilised in special measurement equipment to determine various physical factors (thickness, density, filling state).

The company's objective is to establish itself as a leading global total provider in the field of isotope technology. In addition to consolidating the core business (radiation sources for scientific and industrial applications) and focusing on the oncology and cardiology growth sectors, the company also intends to expand into radiobiology. Entry in developing radiopharmaceutical cancer treatment (in cooperation with NEMOD) will close the gap in non-apparative radiation treatment and secure long-term growth potential through medical radiation sources.

Corporate structure and business sectors

Eckert & Ziegler Strahlen- und Medizintechnik AG is an internationally-oriented financial and management holding company comprising a total of five individual companies in a group. 220 staff are employed by Eckert & Ziegler in Berlin, Prague and Los Angeles which, given the solid development of business, is expected to rise constantly. The line-up and individual participation relationships within the group are outlined in the following organisational chart.

Development and production of radiation products for four areas of application

Tumour brachytherapy

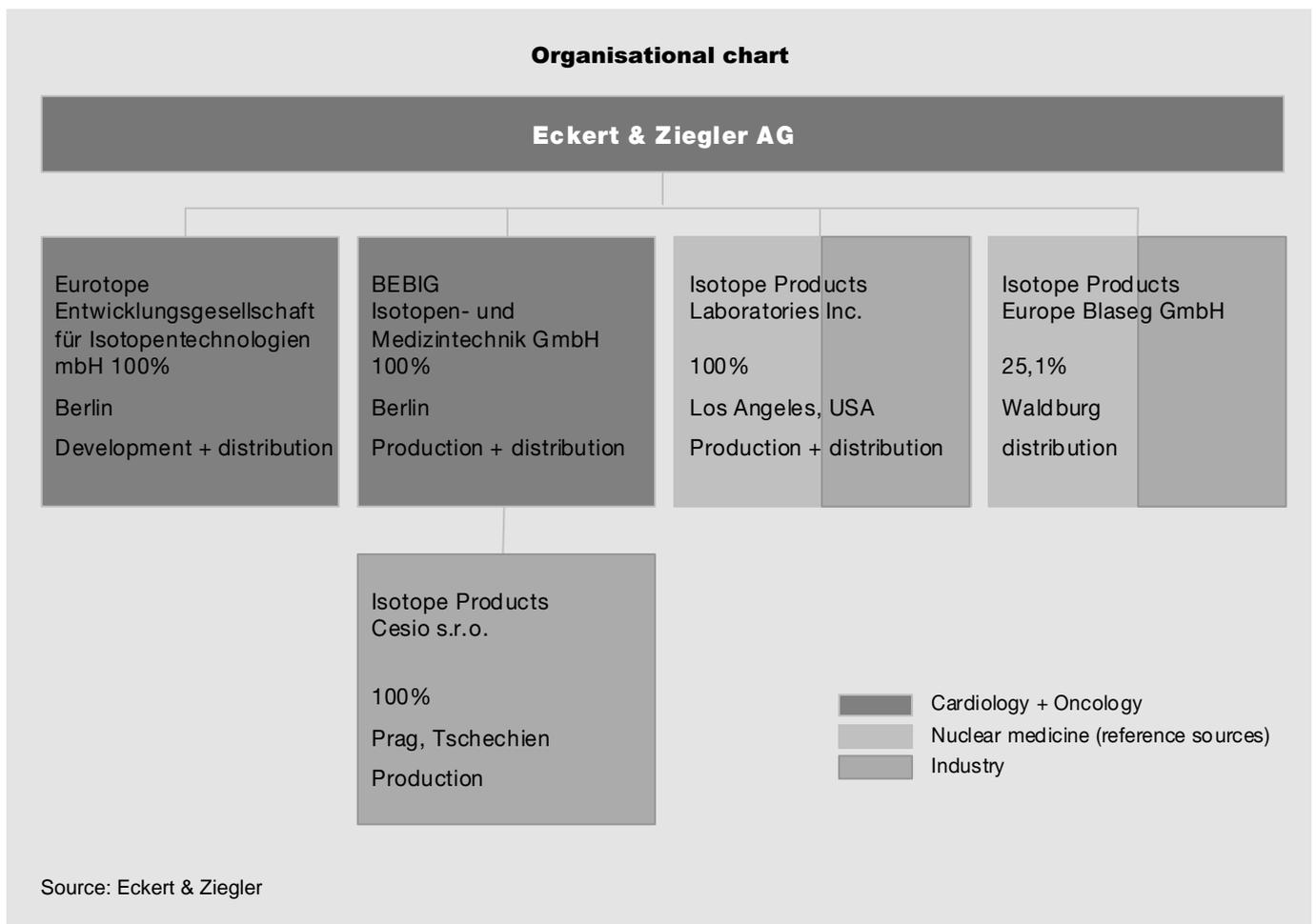
Prevention of restenosis

Nuclear imaging

Scientific and measuring technology applications

Objective: to become the leading total provider of isotope technology

Holding company manages five individual companies within the group



Eurotope Entwicklungsgesellschaft für Isotopentechnologien mbH in Berlin develops isotope and isotope recycling technology. It acts mainly as a development company for BEBIG Isotopen- und Medizintechnik GmbH which is primarily responsible for production and distribution. Industry sources are also produced in the Czech subsidiary Isotope Products Cesio s.r.o..The US subsidiary Isotope Products Laboratories Inc. concentrates on manufacturing radiation sources for industrial, scientific and medical applications. Acquisition of the company in the early nineties ensured Eckert & Ziegler's timely strategic entry on the American market, while the holding company Isotope Products Europe Blaseg GmbH based in Waldburg concentrated on the distribution of radiation sources for scientific and industrial applications in Europe. The Berlin subsidiary jojumarie Intelligente Instrumente GmbH was sold on 26 September 2001 with an unrealised profit of euro 250,000. Development of medical robots for precise positioning of brachytherapy sources were integrated in advance in BEBIG GmbH.

The business model of the Berlin-based medtech company is based on a broad range of services in four separate business sectors. Given that nuclear medicine and industry and science are classified as Eckert & Ziegler's core business sectors, they are integrated under core business as opposed to the more recent growth areas of oncology and cardiology.

Development, production and distribution closely linked in the subsidiaries

Activity comprises four business sectors

Oncology centres on the development and manufacture of beta radiation sources for treatment of prostatic carcinomas and malignant eye tumours. At present, Eckert & Ziegler is the only company producing ruthenium-106 eye applicators. These were originally developed in the 60's at the Academy of Sciences of the former German Democratic Republic and integrated in Eckert & Ziegler's product portfolio after reunification. The company concentrates on producing radioactive seeds (small metal rods which are permanently implanted in the prostate tissue) for treatment of prostate cancer. Furthermore, through purchasing additional expertise, the company intends to pursue the development of therapeutic antibodies, which could provide promising alternative treatments for a series of malignant tumours.

Eckert & Ziegler's cardiology business sector produces miniature radiation sources for irradiation of the inner blood vessel walls. These components which were developed in conjunction with leading manufacturers of medical equipment represent a significant component of catheter systems in the prevention of restenosis following coronary angioplasty.

Nuclear medicine represents the strongest business sector yet in terms of sales (one third of planned revenue for the 2001e business year). With market share of around 65%, Eckert & Ziegler is one of the leading providers of medical reference sources worldwide. These are used for example for calibration (quality assurance) of gamma cameras or in the diagnosis of various illnesses (mainly oncology).

The fourth business sector, industry and science, provides weak sources of radiation for measuring technology purposes to industrial sources (mainly medium-sized companies) and scientific institutes.

Corporate strategy

Eckert & Ziegler's corporate strategy is clearly oriented towards medical market segments dominated by a high level of demand for effective and gentle treatment procedures. Given that the company is divided in separate business sectors to ensure coverage of many market segments with different characteristics, no universal business strategy can apply to all segments. Rather, the marketing strategy is oriented on the specific market requirements of the individual lines. The individual characteristics and similarities of individual business sectors are covered separately at a later stage.

Eckert & Ziegler traditionally supplies medical equipment companies with specialised isotope products, where the core corporate strategy is the broad utilisation of the value-added chain which is guaranteed by a multi-tier service range. The following four sectors of the company's service range are detailed below:

- Development of prototypes through to validation of trial series.
- Development and construction of production systems for individual product lines, where small amounts of the prototype are manufactured prior to serial production.
- Large-volume contract manufacturing of components. Strict guidelines (ISO 9001, GMP) apply to production to guarantee the relevant standard of quality.

Oncology: prostate seeds, eye applicators and therapeutic antibodies

Cardiology: cardiovascular sources

Nuclear medicine: medical reference sources

Industry and science: radiation sources for measuring technology

Strategy for individual business sectors adapted to meet the requirements of market segments

Broad service range along all levels of the value-added chain

Development

Line design

Contract manufacturing

Special services

- Handling licensing and approval procedures, recycling and distribution services.

Cooperation strategy represents a significant part of Eckert & Ziegler's business model, where long-term development and delivery contracts with renowned manufacturers of medical devices should secure a basis for future business. These cooperations result in a win-win situation with reciprocal benefits to both partners. Eckert & Ziegler can concentrate on its core expertise (development and production) within the framework of project-related cooperation, while simultaneously receiving subsidies for development and investment costs from its customers. This enabled the company to acquire around euro 1-3m in milestone payments in recent years, therefore significantly minimising the investment risk in constructing production lines/facilities. Minimum purchase volumes which have been guaranteed contractually also reduce the sales risk in a part of the agreement.

These often represent exclusive agreements with the cooperation partners in terms of manufacture and also distribution of radiation sources. In view of the subsidies paid, Eckert & Ziegler is thus tied in so far as to what can and may only be produced on the production line for the relevant system partner. This applies for example to the Beta-Cath™ catheter from Novoste, for which Eckert & Ziegler supplies strontium-90 sources. In some cases, partners are obliged to only use products manufactured by Eckert & Ziegler. In return for its investment and guaranteed speedy market penetration, the customer receives isotopic technical expertise without having to invest in personnel, laboratory infrastructures or approval procedures.

Recognising early on the central significance of a global presence in the medtech market, Eckert & Ziegler established itself as an internationally-oriented provider focusing on the core markets of Europe and North America. These market generated 97% of sales for the previous business year 2000 (North America: 81%; Europe: 16%) and the growth markets regarded in terms of the greatest future potential. On the one hand, the acquisition of the Los Angeles based IPL Inc. (developer and producer of radiation sources) secured Eckert & Ziegler a significant step towards international expansion, while on the other, a presence in the US will facilitate contact to important major customers (Novoste, Uromed) considerably.

The company's oncology business sector is concentrating mainly on marketing its prostate implants. Rather than concentrating primarily on technical innovation, the focus is on speeding up and intensifying market penetration. Since, contrary to the US, market shares have not yet been distributed, the European markets are of particular interest to Eckert & Ziegler. This is mainly due to the fact that brachytherapy of prostatic carcinomas is well established in the US and is attributed greater importance overall in comparison with Europe.

Eckert & Ziegler intends to maintain its current European market share of 35% and generate around euro 35m in sales revenue (just under ten-fold of the 2000 level) Intended sales of euro 5.8m for the current business year are expected to double in the following year (euro 11.3m). In contrast, given the strong position of local competitors, penetration of the US brachytherapy market by non-American market players is hindered significantly. From an economical per-

Win-win situation through cooperation with global players

Bilateral exclusive agreements lead to customer loyalty

International orientation focusing on growth markets

Forced market penetration Europe is target of prostate cancer products

Penetrating the US brachytherapy market is of secondary importance

spective (current market share of only around 1%), this does not represent great interest to Eckert & Ziegler.

Prostate customers comprise around 30 clinics and selected distributors, whereby share of sales with intermediate organisation tend to fall while sales to clinics and doctors are gaining in significance. Specialised facilities are chosen where, following acquisition and teaching, the consultants are supplied through direct sales Eckert & Ziegler has established channels of distribution in the comparably small market for ruthenium-106 eye applicators (with around euro 0.5m in sales, the company is global market leader). Direct sales to around 60 clinics has been centralised in Berlin since the company was founded.

Eckert & Ziegler has already established a strong market position (estimated global market share: 65%) in cardiovascular sources (cardiology). This is mainly based on strategic alliances with leading international providers of products for interventional cardiology. Their public profile enhances the reputation of the Berlin-based company as a specialist in the development and manufacture of radiation sources. At present, around 90% of sales in the cardiology segment are generated alone through the two main customers Novoste, USA (Beta-Cath-System™) and Radiance, USA (RDX-Katheter™), whose catheter systems are the only ones currently approved for the European market. Since Radiance has suspended activities on the European market until further notice, the significance of the cardiology business unit for Eckert & Ziegler wanes.

The customer profile in the field of nuclear medicine is increasingly characterised by manufacturers of gamma camera, clinics and additional secondary markets. The strategic acquisition of DuPont's radiation business strengthened Eckert & Ziegler's position considerably in this business sector (the purchase already contributed \$ 6m to sales in the previous year). Together with the subsidiary IPL, Eckert & Ziegler can provide an extensive portfolio of reference sources. The production technology of these sources is subject to a constant process of revision, where process optimisation and efficient cost controlling should guaranty the competitive position.

In addition to the ability of providing high-quality products at competitive prices, Eckert & Ziegler's commercial success is determined by a broad customer base, experience in approval procedures and guaranteeing sufficient production capacity. We feel that this is supported by the agreement recently entered into with the American manufacturer of medical equipment, General Electric Medical Systems, which is regarded by IPL as a leading supplier for nuclear medical radiation sources. Agreements such as these provide Eckert & Ziegler with a favourable starting point for future spin-offs (for example through alternative sources).

The company intends to achieve sales of around euro 15m in the nuclear imaging segment by the year 2005, which corresponds to average annual growth of around 10%. Marketing of radiopharmaceuticals should generate up to euro 15m. However, in view of the uncertain development in the segment which is in the process of being established, we have initially excluded it from our sales and earnings planning.

Together with nuclear medicine, the industry and science business sector (planned sales for 2001e: euro 9.1m) continues to represent the company's cash cow. According to the company however, in view of rather moderate growth of

Increased significance on direct selling of seeds

Strategic alliances ensure favourable positioning in cardiovascular radiation sources

External growth through strategic acquisition in nuclear medicine

Years of experience and a broad range of contacts ensure future business

Radiopharmaceuticals should contribute up to euro 15m to sales in 2005

Moderate growth in industry and science

4 to 5% per annum, oncology should be the driving force in becoming the strongest business sector in terms of sales (2002e objective: euro 11.3m).

Eckert & Ziegler's split distribution strategy for industry sources comprises both the supply to larger and smaller distributors and direct sales. The five largest so-called key accounts of over 1,000 customers account for around on third of total sales in this business sector.

Eckert & Ziegler are continuously developing additional products to maintain or expand its position as partner of choice for medical equipment manufacturers which are active in research. This is also reflected in the disproportionately high current quota of 18% (including development and construction of manufacturing facilities) for research and development in this sector. 10 to 15% of sales are planned for future R&D activities (expenditure is activated in some cases). This already includes planned expenditure totalling around euro 3m for radiopharmaceutical development.

In turn, licensing the rights to use NEMOD's antibody technology is not expected to result in diversification of business activities, but, in line with the proof of principle of radioactive marked antibodies, should be out-licensed to a larger alliance partner which does have expertise in isotope technology. This would also represent a potential exclusive buyer for radioactive components supplied by Eckert & Ziegler.

Split distribution strategy for industry sources

R&D quota should amount to 10-15% in subsequent years

Isotope business remains in focus

Corporate sectors

Eckert & Ziegler operates in highly competitive growth markets. This is due on the one hand to the emphasis on large and important medical areas of indication (cancer and cardiovascular illnesses are the most common cause of death in Western industrialised nations) and on the other due to rising demand for gentle and cost-effective alternative treatments. In the early stages of diagnosis, minimally invasive procedures often replace surgical intervention, thus significantly shortening the patient's period of convalescence.

Illnesses are recognised at an early stage by refined methods of diagnosis and extending so-called screening programmes, thereby increasing the use of minimally invasive treatment procedures (which also includes miniature radiation sources).

Oncology

According to the WHO (World Health Organisation), malignant tumours are the second (after cardiovascular illnesses) most common cause of death as indicated by world population. The most prevalent form of cancer, prostate cancer is the most frequent malignant tumour in men. After lung and colon cancer, it represents the third most common cause of cancer-related death among men. According to estimates of the American Cancer Society, 200,000 new cases of prostate cancer will be diagnosed alone this year in the US, of which over 30,000 will result in death. Just under 30,000 new cases are expected annually in Germany. Regular screening tests ensure that almost 70% of cases are diagnosed in the early stages (limited locally or regionally). The 5-year survival rate in the early stages is almost 100%.

A series of different treatments are used irrespective of age, stage of illness and the patient's general health. Radiation treatment is also carried out in addition to operation (prostatectomy), hormone treatment (androgenic suppression) and chemotherapy, increasing the significance of internal radiation (implanting radioactive seeds) over external radiation treatment. A number of distinct advantages (less irritating, cheap, lower rate of complications/side-effects, out-patient treatment) characterise this method known as brachytherapy which is generally used for patients with tumours limited in specific organs.

The relevant market volume for Eckert & Ziegler is determined by the share of patients undergoing treatment with permanent implants (in contrast to temporary high-dosage brachytherapy, where highly radioactive seeds are placed in a thin catheter in the prostate over a period of several hours).

Market

According to estimates of the market researcher American Health Consultants (BBI Newsletter) the share of localised prostatic carcinomas undergoing treatment with seeds in the US is increasing from around 20% in 2000 (40,000 brachytherapies) to in excess of 35% in 2005e (110,000 brachytherapies). Assuming treatment costs of US\$ 2,400 or 2,800 per treatment, this represents market volume of US\$ 112m in 2000 or US\$ 264m in 2005e. According to other sources, brachytherapy currently accounts for over 25% of all curative treatments in the US. While the prostate seed market segment is largely distributed and dominated by American competitors in the US, Europe offers considerable potential to Eckert & Ziegler. Given that this treatment has not yet been well established here, only around 1,500 seed treatments for around 135,000 new diagnoses (1.1% of cases) were carried out.

Eckert & Ziegler benefits from rising demand for minimally invasive treatment procedures

Growth market for radioactive components

Prostatic carcinomas: the third most common form of cancer-related death among men

Brachytherapy becoming increasingly important in the treatment of prostate cancer

Relevant market: share of permanent implants in radiation treatment

High level of discrepancy between the US and Europe in terms of market volume and potential

Our forecast for a sharp increase in the number of treatments in Europe is based on increased acceptance of the treatment method (favourable results and positive data from clinical studies) and improved screening methods. Predications of around 20,000 brachytherapies in 2005 by the company itself corresponds to average annual growth of 68%. Our forecast of a CAGR 2000-2005e of 65% in brachytherapies assumes around 18,700 seed treatments in 2005e.

Competition

There are less than 15 companies worldwide who develop and produce radiation sources for medical application. This is due on the one hand to the fact that only a small number of providers have the particular know-how required for the safe and effective production of isotopes. On the other hand, high barriers to market entry (sophisticated development and production technology, capital intensive licensing and approval procedures) limit the number of competitors.

Eckert & Ziegler has many years of experience in isotope research and in manufacturing radiation sources. As one of the few providers, know-how on independent construction of production lines and laboratories from the Eurotope subsidiary has led to a technological advantage in some areas. In comparison with most competitors, the company's broad product range of integrated components for both medtech and industry covers various different segments of the market. Eckert & Ziegler is also leader in manufacturing technology of prostate seeds, where a high degree of automation has achieved cost leadership. Its international focus differentiates Eckert & Ziegler from smaller competitors.

We have considered the current most important and major competitors in the high-growth oncology market in more detail. Amersham (UK), Theragenics (US) and National American Scientific represent the competition in the field of prostate implants. Similar to Eckert & Ziegler, the three companies have extensive experience in the production, distribution and marketing of their seed products. While the American providers already enjoy success in their home markets, they do not have sufficient local capacity for the European markets. Smaller competitors in the oncology sector are International Brachytherapy (Belgium), Implant Sciences (US) and Imagyn Medical Technology (USA). You will find a brief description of individual competitors below:

Amersham plc (formerly Nycomed Amersham) is one of the leading competitors in prostate seeds. The company which has global approval for its iodine seeds achieved sales of £ 31m in this field in the first half of 2001. It must be taken into account that a distribution cooperation exists between Amersham and Theragenics, also competing with Eckert & Ziegler in vascular brachytherapy. Amersham also operates in radiopharmaceuticals and contrast media for diagnostic imaging. Total sales for the company in 2000 amounted to around £ 1.4bn.

The American company Theragenics Corp. has been operating for the past ten years in production of radioactive seeds. The company manufactures the radiation sources for its main product TheraSeedR (palladium-103) in its own linear accelerator/cyclotron. The seeds which have FDA approval are distributed by a number of partners (Amersham, Imagyn Medical Technologies, C.R. Bard and Prostate Services of America). The company objective is to expand the areas of indication including prevention of restenosis. Company sales for the business year 2000 amounted to US\$ 44m.

Brachytherapy expected to achieve annual growth rates of 60-70% in Europe

Reasonable number of competitors...

...from which Eckert & Ziegler distinguish themselves in varying ways

Overview of most important competitors

Amersham plc (UK)

Theragenics (US)

Except for cardiology, North American Scientific operates in the same segments as Eckert & Ziegler with its oncology, nuclear medical and industrial products. While the Nasdaq-listed company has FDA approval for both its iodine and palladium seeds, it has none for the European market. The American distribution company Mentor is exclusively responsible for marketing. Company sales for the business year 2000 were around US\$ 17.5m.

**North American Scientific,
Inc. (US)**

The Belgian-based International Brachytherapy (IBT) S.A. produces its implants for palladium-103 and iodine-125 interstitial treatment of carcinomas. The seed products (InterSourceTM) are approved for both the European (CE certification) and American market (FDA approval) and the company has a distribution agreement for Europe with Mallinckrodt. The company achieved sales of euro 2.2m during the business year 2000.

**International Brachytherapy
(Belgium)**

Imagyn Medical Technology is active in brachytherapy, surgery, gynaecology (breast biopsy systems) and urology. Its own seed products isoSTARTM in the brachytherapy business line is produced by International Isotopes in the US whose brachytherapy assets were acquired. A distribution cooperation with Theragenics markets the TheraSeed® in North America and Canada. There are no current key financial ratios. However, sales for 1998 amounted to US\$ 105.5m.

**Imagyn medical Technology
(US)**

Implant Sciences, Corp. achieved sales of US\$ 3.1m for the first nine months of the business year 2000/01, of which 10% were attributable to prostate seeds. The company develops stents, catheters and other medtech products with radioactive coating. The (I-PlantTM) seeds distributed by MED-TEC have FDA and CE approval.

Implant Sciences (US)

Conclusion: with market share in excess of 50%, Amersham is the most important competitor in Europe.

Sales and income model

We predict an increase of around 55,000 brachytherapies in 2000 to around 89,000 in 2005 in the core markets of the US and Europe (US: 70,000, EU: 18,700). While we expect market saturation and a consecutive constant decline in the US of 2005, growth in Europe should weaken to around 30% per annum (2006-2007). Given its favourable position in the dynamic European growth market (market share of around 1/3) and the comparative cost advantages (fully-automated seed production), we expect Eckert & Ziegler will be able to expand its global market share to 9.4% in 2005 (2000: 1.8%).

**European growth should
expand market share**

According to the company, proceeds per case are around euro 3,800 (distribution and direct sales average) comprise the sales of seeds and additional application disposables. In view of a forecasted increase in competition, we assume a 26% decline in the selling price per seed by 2005. Proceeds per case are likely to remain constant, assuming the sale of disposables will off-set the decline in sales of seeds. The high share of disposables will reduce gross margin from a current 60% to around 49% in 2005. Disposables mainly comprise merchandise with a corresponding low margin. We forecast a constant growth rate of 5% per annum for the eye applicator sub-sector to around euro 600,000 by the year 2005. At the time, we expect gross margin to fall slightly by 68% in 2005. This implies annual growth in gross operating results from sales of around 2.5%. According to our forecast, Eckert & Ziegler can increase its gross operating result by an annual rate of 35% up to the year 2005. Average annualised growth in sales during this time period lies around 51%.

**2000 sales CAGR
of 51% for period 2000-2005**

Oncology					
	2001e	2002e	2003e	2004e	2005e
Eye applicators					
Sales (Euro 000)	500	525	551	579	608
Gross operating result (Euro 000)	375	394	397	405	413
Prostate seeds					
Treatment (cases)	1,749	2,552	3,709	5,539	8,338
Proceeds per case (Euro 000)	3,800	3,777	3,756	3,732	3,709
Sales (Euro 000)	6,643	9,450	13,499	19,860	29,601
Gross operating result (Euro 000)	3,920	5,481	7,289	10,327	14,504
Gross margin	59.0%	58.0%	54.0%	52.0%	49.0%
Source: DZ BANK estimates					

Cardiology

The radioactive components produced by Eckert & Ziegler are used in catheter systems for the prevention of restenosis (renarrowing) following dilation of narrowed arteries (coronary arteries). Arterial narrowing is the result of arteriosclerosis (hardening of the arterial walls) which constitutes the morphological correlate of coronary heart disease (CHD). Given the high death rate, CHD is regarded as a widespread illness and as one of the leading causes of death in the Western world by means of its serious consequences (heart attack, ventricular fibrillation, ventricular dilation).

Market

To prevent patients suffering from potential myocardial infarction, a more gentle method of balloon dilation (PTCA: percutaneous transluminal coronary angioplasty) is used in addition to a bypass operation, where the arteries are expanded with a highly pressurised small balloon. The number of coronary angioplasties carried out worldwide are estimated at around 1.5m per annum. However, the treatment's success is limited by 20-40% cases of restenosis (renarrowing) which occur through excessive healing processes during the first year after treatment.

Implanting stents can prevent renewed narrowing of the lumen in some cases thus reducing the rate of restenosis to 15-20%. This knowledge has led to the fact that of all patients who currently undergo balloon dilation (approx. 1m), 70% receive primary or secondary stents, and in spite of this measure, around 15% (approx. 150,000) develop renewed narrowing of the arteries or so-called in-stent restenosis. From a scientific viewpoint, the latter represents the only accepted indication for intra-coronary brachytherapy and hence the market relevant to Eckert & Ziegler. On an individual basis however, brachytherapy is also used for first-time PTCA (to expand the so-called novo-stents) as a prevention against relapse.

The global market for intra-coronary brachytherapy is estimated at around euro 400 to 500m per annum. This results in average market volume of around euro 3,000 per treatment.

Further momentum of this market segment will depend on the development and introduction of competitive treatment methods. There are a number of alternative methods to prevent in-stent restenosis such as radioactive stents or gene therapy.

Coronary heart disease is a widespread illness and one of the most frequent causes of death

Around 1.5m angioplasties per annum with a 20-40% rate of restenosis

Relevant market for endovascular brachytherapy: 150,000 in-stent restenoses per annum

Intra-coronary brachytherapy market volume: euro 400 to 500m per annum

Drug-coated stents represent most important competition to endovascular brachytherapy

In our opinion, a realistic opportunity of claiming timely market leadership applies only to drug-coated stents.

Following initial study results, these stents which are coated with proliferation inhibiting drugs (for example Sirolimus, Paclitaxel, Rapamycin) seem very promising in preventing arterial narrowing. The recently published data from the so-called RAVEL study presented excellent result (a restenosis rate of 0% in comparison with 26% in the comparable group) for a coated stent from the world's largest medtech provider, Johnson & Johnson.

Estimates indicate that the success of drug-coated stents will more than double the current market level of US\$ 2bn for metal arterial supports within a few years. This prospect has led to intensive development activity in this field by the five leading producers (Johnson & Johnson, Boston Scientific, Guidant and Medtronic). Given that the first models are not expected before early 2003, we do not expect significant market share and predatory competition in the prevention of in-stent restenosis before 2004 at the earliest.

At present however, in view that drug-coated stents should be regarded as serious competition to endovascular brachytherapy, we are forecasting stagnation or a fall in market share following a significant increase in the number of cases up to 2004/05. In our opinion, with a time-lag of one to two years, Europe's adaptation to US circumstances should be conducted more quickly than brachytherapy of prostate carcinomas.

Competition

We view Amersham/AEA Technology (please refer to the oncology business line) as relevant direct competition, whereby Guidant can be regarded in indirect terms.

The American Guidant Corporation is one of the leading companies in cardiovascular medical products (defibrillators, stents, catheters). The company produces gamma-ray (phosphate-32) based catheter systems. The radio isotopes used are manufactured by means of in-house technology. Sales for the previous business year amounted to US\$ 2.5bn.

Sales and income model

Following publication of the RAVEL study, we expect similar positive results for long-term clinical studies of drug-coated stents. We expect market-wide introduction of the new stent generation in 2004 and forecast a speedy paradigm shift in the treatment of restenosis. Our forecast model thus far is based in a base-case scenario. We assume that Radiance will cease to be a buyer of cardiovascular radiation sources and will only make their payments which are contractually agreed. Since the payments are not off-set by production expenses, the gross margin will increase in 2002. We expect the major customer Novoste will meet the volumes agreed on in 2002 followed by a slight increase in 2003. This assumption is based on the fact that vascular brachytherapy is the preferred and only recognised method in preventing in-stent restenosis (START study). We expect the cardiology business line to cease in 2004. Given that competition precludes either individual prices or isotope component share, the average price per set is a combined costing.

Excellent results from Ravel study

Global players in a race to introduce new drug-coated stents

Fall in market growth for vascular brachytherapy expected from 2004

Guidant Corporation (US)

Suspension of cardiovascular source production expected in 2004

Cardiology

	2001e	2002e	2003e	2004e	2005e
Sales (Euro 000)	2,589	3,746	4,013	3,765	0
Gross operating result (Euro 000)	1,553	2,623	2,247	2,033	0
Gross margin	60.0%	70.0%	56.0%	54.0%	

*Combined costing

Source: DZ BANK estimates

Nuclear medicine, industry and science

The largely saturated markets for radiation sources in nuclear medicine and in industry and science record comparably moderate single-digit growth rates. In spite of being the cash cow in terms of sales, oncology (driving force) and cardiology however represent the interesting markets of the future. The following is therefore merely a rough estimate of the relevant market potential. Global market volume of euro 15m and annualised growth of around 7% up to 2005 is assumed for the specialist area of nuclear medicine. We predict an annual growth rate of 4 to 5% for the isotope market in industry and science during the same time period. In our opinion, given that a large proportion of market share is already tapped and there is little scope for a shift in these shares, Eckert & Ziegler will grow in proportion to the overall market in these less innovative fields. Amersham (AEA Technology) is also the most important competitor in nuclear medicine, industry and science.

Sales and income model

Assumptions for these segments are conservative. As previously mentioned, we expect 7% growth in sales in nuclear medicine up to euro 14.4m in 2005. Given the increasing price pressure, we assume a decline in gross margin from around 50% in 2001 to around 47% in 2005. Annual growth in sales in line with the entire industry and science market is estimated at 4% to euro 13.2m. We forecast minimal regression of margin in this segment from the current level of 40% to only 39% over the entire time horizon.

Single-digit growth rates in nuclear medicine and industry & science core business lines**Single-digit growth accompanied by stable margins****Nuclear medicine and science & industry**

	2001e	2002e	2003e	2004e	2005e
Nuclear medicine					
Sales (Euro 000)	11,000	11,770	12,594	13,475	14,419
Gross operating result (Euro 000)	5,500	5,885	6,171	6,468	6,777
Gross margin	50.0%	50.0%	49.0%	48.0%	47.0%
Science & industry					
Sales (Euro 000)	11,300	11,752	12,222	12,711	13,219
Gross operating result (Euro 000)	4,520	4,701	4,889	4,957	5,156
Gross margin	40.0%	40.0%	40.0%	39.0%	39.0%

Source: DZ BANK estimates

Radiopharmaceuticals

The recently acquired rights to the antibody technology of the Berlin-based cancer vaccine specialist NEMOD New Modalities Heilmittel GmbH has enabled Eckert & Ziegler entry into radiopharmaceuticals. The objective of the agreement is to implement isotope technical expertise in developing therapeutic antibodies which can be used mainly in oncology. By linking radioactive molecules to specific mono-channel antibodies, which in turn selectively (key-hole principle) couple with specific receptors on the surface of the tumour cells (so-called epitope), treatment of various types of cancer can be targeted.

Eckert & Ziegler have planned investments (predominately milestone payments) of euro 3m for phase I clinical trials which should be completed within the next two years. These expenses include euro 0.5 to 1m in the current business year for R&D, which should be taken from the free cash flow.

According to the company, cooperation with NEMOD should be expanded to include additional partners (for example biotech or pharmaceutical companies), which may assume responsibility for further development and marketing of finished products following the successful conclusion of the phase I trials. Eckert & Ziegler therefore plans medium-term sub-licensing of the antibody technology and will benefit indirectly in the role of supplier of required radioisotopes from marketing a new generation of cancer treatments. Given that Eckert & Ziegler remains focused on its core expertise and allows experienced partners to expand the technology in this sector, we view this strategy as appropriate.

Market

The radiopharmaceutical market comprises mainly diagnostic and treatment areas of application. While a series of radiopharmaceutical diagnostics are routine (for example within the scope of scintigraphic imaging to detect metabolic procedures), the use of therapeutic radiopharmaceuticals is limited to a small number of indications (such as thyroid cancer, pain therapy and secondary growths in bones).

Nevertheless, significant sales are already being generated and this market segment should be subject to dynamic growth. Among others, the positive characteristics (fast, painless and cost-effective) of radiopharmaceutical treatment are contributory factors. A study by the renowned market researcher Frost & Sullivan estimates the volume for therapeutic radiopharmaceuticals in the US alone at around US\$ 400m in 2001. Bearing in mind development of new applicator technologies (such as radioactive marked antibodies) and developing additional targets, the market should grow more than 10-fold by 2015 to just under US\$ 4bn.

Oncology is currently the most actively researched indication of therapeutic radiopharmaceuticals, whereby the emphasis is on targeted radiation of malignant cells while not affecting healthy tissues. Frost & Sullivan therefore expect disproportionately high growth in sales in radio immune therapy, where antibodies are used as carrier molecules of radionuclides to concentrate the effect of ionised radiation directly towards the targeted structures. Against this background, we regard biotech companies in particular, whose core expertise lies in researching carrier molecules, as promoters in developing these products.

Entry in radiopharmaceuticals through licensing of antibody technology

euro 3m investment planned for phase I trials

Out-licensing to major partners according to the proof of principle

Radiopharmaceuticals: diagnostic and treatment areas of application

10-fold growth in market volume within the next 15 years

Radio immune therapy viewed as particularly strong in terms of growth

The ability to link suitable cooperation partners and to support them in the process of approval is, among others, a decisive competitive factor. Even as a relatively small player, the necessary isotope technical expertise, the critical number of technical specialists and a global presence represent an advantage for Eckert & Ziegler. Current market leaders in therapeutic radiopharmaceuticals are almost all major corporations (Amersham with its partner Antisoma, Mallinckrodt, Nordion, DuPont), whose products and services portfolio are considerably more diversified than those of Eckert & Ziegler. Given that resources are distributed among various projects, market entry of radioactive marked antibodies for cancer treatment is not expected before 2003/04. This also applies to the large competitors.

Sales and income model

The company itself expects this segment to yield minimum sales of euro 5m in 2004, divided among product revenue (supplying radio isotopes) and subsidies towards developmental costs (for ongoing clinical trials). In view of its yet uncertain development, purposely we have not included (as previously indicated) radiopharmaceuticals in the sales and earnings model. However, we regard the development potential for Eckert & Ziegler as favourable and, given higher margins in comparison with other business lines, consider this as an opportunity for further medium- to long-term upside potential.

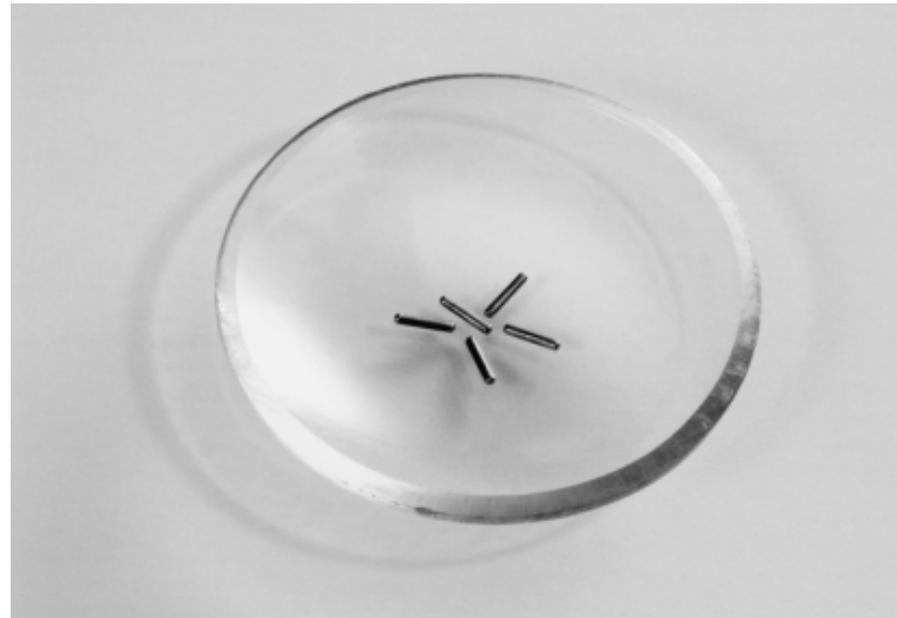
Specialisation secures Eckert & Ziegler's favourable competitive position

Radiopharmaceuticals not yet taken into consideration

Corporate development and outlook

Post-IPO development

Since the IPO of May 1999, Eckert & Ziegler has succeeded in expanding its existing business sectors and in developing new medical and biotechnology business. The sustained strong demand for weak radiation sources for medical treatment represent the basis for solid business development. Demand for so-called seeds (radioactive isotopes embedded in small metal rods) in the treatment of prostate cancer has been particularly strong.



Seeds in a dish. Source: Eckert & Ziegler

While forecasted sales at the time of the IPO were exceeded, projected earnings in retrospect were over-ambitious. Instead of planned sales of euro 16.4m in the previous business year 2000, the company in fact achieved euro 23.6m (+44%). However, the operative result of euro 2m fell significantly short of the original pre-IPO planning of euro 5.2m. This corresponds to an EBIT margin of 8%, only a quarter of the targeted level of just under 32%.

According to the company, external growth (through the acquisition of the radiation business from DuPont in June 2000) contributed approximately euro 3.2m to sales and the contribution to operative results was offset. Following adjustment for acquisition-related effects, sales for the business year 2000 amounted to euro 20.4m. The current business year is characterised by quarterly results and high-volume incoming orders which exceed projections and entry in radiopharmaceuticals. Landmark events for post-IPO company development are listed below.

Expanding the core business and entering into new markets mark solid business development

In spite of good performance, notified EBIT margin of 30% could not be achieved

Although acquisition from DuPont impacts considerably on sales, EBIT is unaffected

Post-IPO milestones in the company's development

1999

- May: IPO on the Neuer Markt, Frankfurt
- June: Food and Drug Administration (FDA) approval of iodine-seeds for treatment of prostatic carcinoma
- July: Sales and earnings potential through CE approval of iodine-seeds for treatment of prostatic carcinoma and subsequent expansion in the European market (second largest market behind the US)
jojumarie Intelligente Instrumente GmbH founded (develops and produces applicator instruments for minimally invasive radiation sources)
- August: Development partnership with Radiance Medical Systems Inc. to produce cardiovascular components
- November: Multi-year agreement with Varian Corporation and Cordis (subsidiary of Johnson & Johnson) to manufacture and supply radioactive components (iridium sources) for ventricular catheter systems

2000

- January: FDA approval of palladium seeds for treatment of prostatic carcinoma
- June: Capital increase of 250,000 unit shares to 3.25m shares. Funds raised amounted to around euro 17m
Acquisition of the radiation source business from US competitor DuPont Pharmaceuticals Company and integration in the Californian subsidiary, IPL. Similar product range provides substantial economies of scale and allows expansion of market position in nuclear medicine reference sources. Deal is financed through previously-mentioned capital increase.
- July: Agreement with Radiance Medical Systems to establish extensive capacity for manufacturing radioactive-coated balloon catheters.
- August: CE approval of palladium seeds for treatment of prostate cancer.

2001

- May: 5-year contract with a key oncology customer for supply of iodine seeds (contract volume: euro 14m) and agreement on compensation of euro 2.5m for non-acceptance of a palladium seed production line.
- June: Major contract to supply cardiovascular sources up to 2004 (volume: approx. euro 8m).
CE approval for Radiance radioactive-coated balloon catheter RDX (important cardiology customer of Eckert & Ziegler).
Agreement with the French Institut Curie (specialist clinic for radiation treatment) on supply of prostate implants (Volume: approx. euro 2m).
- July: Long-term contract with General Electric Medical Systems on supply of nuclear medical radiation sources (contract volume: approx. euro 5m).
Entry in nuclear therapy. Acquisition of right to NEMOD therapeutical antibodies.

Source: Eckert & Ziegler, DZ Bank

Outlook for the current business year

Eckert & Ziegler achieved a 75% increase in sales to euro 16.2m in the first half of 2001. Given that the basis effect of the acquisition of DuPont's isotope business amounted to around 43%, organic growth is around 32%. Oncology recorded the highest rate of organic growth with plus 45%, whereby at 10%, industry was at the lower end of the scale. Operating results (EBIT) - excluding compensation of euro 2.6m – increased by 20% to euro 1.3m (euro 1.1m). This figure includes special depreciation of euro 0.6m for a supply agreement which

75% growth in sales over previous year

was terminated by a customer. Growth, excluding special depreciation was 78.5%.

Compensation of euro 2.6m which was paid by a customer for non-acceptance of a production line was posted under other revenue. Adjusting for this position, income after taxes (surplus for the period under review) rose by 41% to around euro 0.8m (unadjusted euro 2.4m). This is mainly attributable to the considerably lower financial result. This results in an EPS of euro 0.26 (unadjusted euro 0.73).

We forecast sales of euro 32.1m (plus 36%), an EBIT of euro 5.4m (plus 163%) and an EPS of euro 0.91 (plus 128%) for the full business year 2001. We did not adjust for the one-off contribution to results arising from compensation of euro 2.6m in the EPS calculation. Without consideration of this one-off payment, EPS would amount to euro 0.47.

Outlook for sales and earnings as of 2002

We forecast sales of euro 37.2m (plus 16%), an EBIT of euro 6.1m (plus 36%) and an EPS of euro 1.08 (plus 48%) for the full business year 2002. Our sales projections for all forecasted years are based on a ratio of 0.95 dollars per euro.

The company is planning the first single-digit million euro milestone payment for the radiopharmaceutical sector as of 2003. Given the high level of uncertainty regarding determination and level of payments, we have not taken any contribution to results from this business sector into account in our sales and earnings planning. Growth in sales from possible future acquisitions have also not been taken into consideration. We expect annual growth in sales of 20% between 2000 and 2005e.

One-off profit of euro 2.6m

**2001e sales:
plus 36%, EPS: plus 128%**

**2001e sales:
plus 16%, EPS: plus 48%**

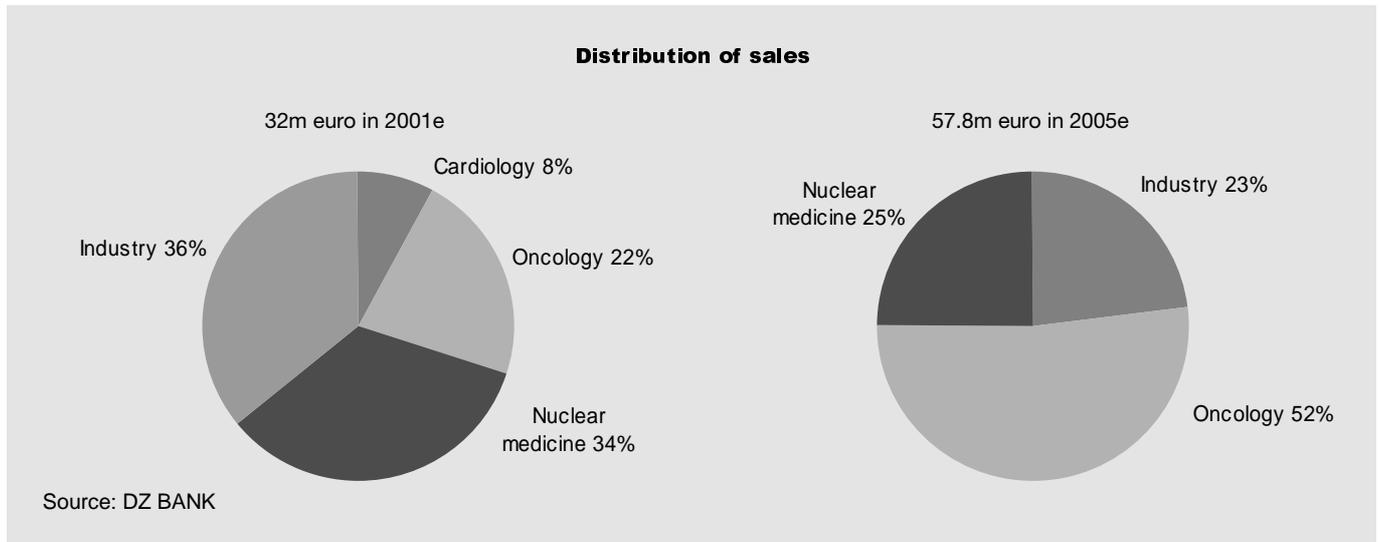
**2000 sales CAGR
of 20% up to 2005**

Sales by business sectors												
Euro 000	2000	y-o-y	2001	y-o-y	2002	y-o-y	2003	y-o-y	2004	y-o-y	2005	y-o-y
Cardiology	2,400	128.6%	2,589	7.9%	3,746	44.7%	4,013	7.1%	3,765	-6.2%	0	-100.0%
% of total sales	10.2%		8.1%		10.1%		9.4%		7.5%		0.0%	
Oncology	3,900	280.1%	7,143	83.2%	9,975	39.6%	14,050	40.9%	20,439	45.5%	30,208	47.8%
% of total sales	16.5%		22.3%		26.8%		32.8%		40.6%		52.2%	
Nuclear medicine	8,800	148.2%	11,000	25.0%	11,770	7.0%	12,594	7.0%	13,475	7.0%	14,419	7.0%
% of total sales	37.3%		34.3%		31.6%		29.4%		26.7%		24.9%	
Industry	7,500	76.8%	11,300	50.7%	11,752	4.0%	12,222	4.0%	12,711	4.0%	13,219	4.0%
% of total sales	31.8%		35.3%		31.6%		28.5%		25.2%		22.9%	
Total	23,614	136.6%	32,032	35.6%	37,243	16.3%	42,879	15.1%	50,391	17.5%	57,847	14.8%
Gross operating result	9,371	113.7%	15,868	69.3%	19,083	20.3%	20,993	10.0%	24,191	15.2%	26,850	11.0%
% of total sales	39.7%		49.54%		51.24%		48.96%		48.01%		46.42%	

Source: DZ Bank

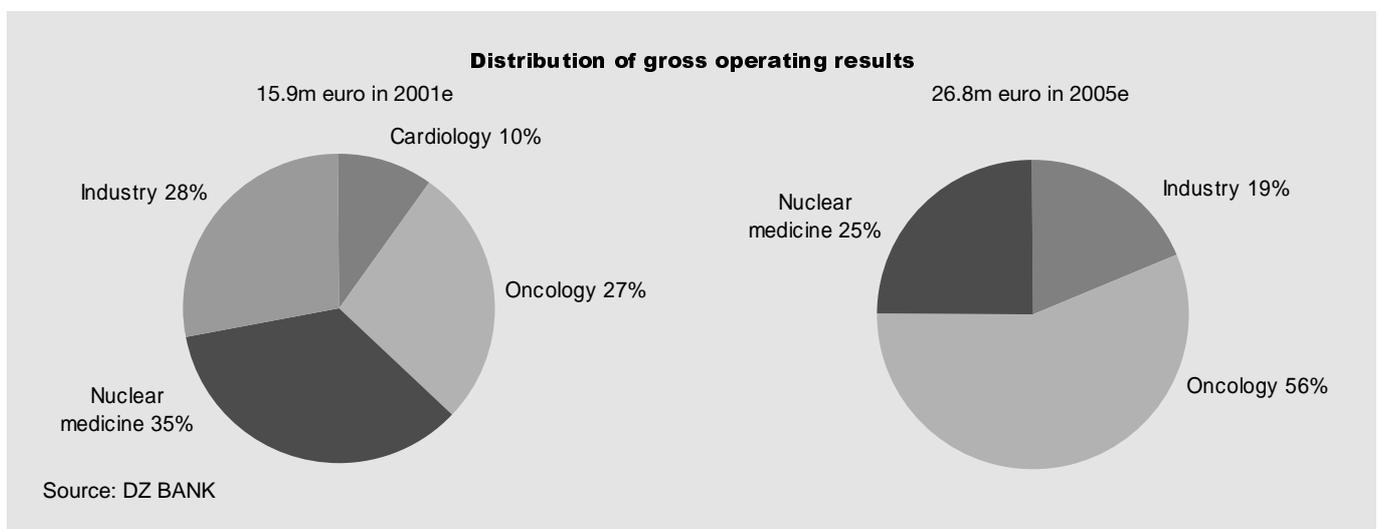
As illustrated in the table above and in the following graph, the oncology business sector is of outstanding importance to the company's future growth. We expect the share of sales to more than double up to 2005 (2001e: 22%; 2005e: 52%).

Oncology is the driving force



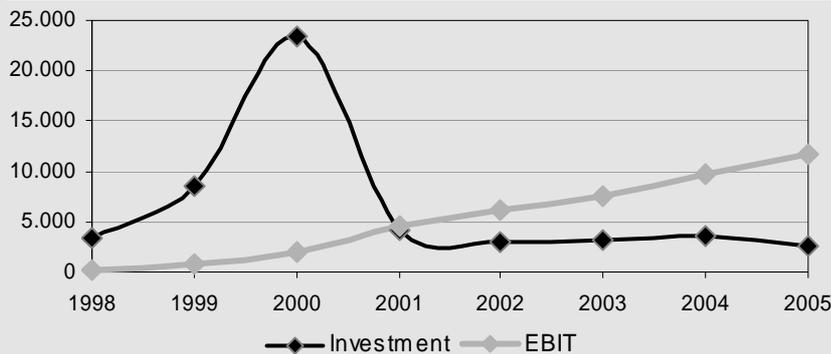
In terms of gross operating results, oncology plays a particularly important role in the company's business model (please refer to the following graph). We expect oncology's contribution to gross operating results to double to 56% by the year 2005e.

Oncology will contribute 56% to gross operating results in 2005e



Our forecasts assume that the company's production capacity will suffice to meet our sales planing. Correspondingly, rather than investment in expansion, we have only planned investment in preservation equal to annual depreciation plus premium for inflation. Investment from 1999 to 2001 created the basis for EBIT growth, from which the company will benefit in the years from 2001 to 2005.

In view of the current production capacity, planned growth can be realised

Relationship of investment to EBIT

Source: Eckert & Ziegler, DZ Bank

We assume rising price pressure in all segments in line with an increased level of maturity within the industry. The resulting fall in margin and shift in product mix towards high-margin products will result in a slight decline in the total margin (2001e: 49.6%; 2005e: 46.4%). Our forecast model takes into account the price and margin decline which was described, increased competition and the possibility of substitute products. We assume the percentage share of distribution costs (of sales) to remain constant at 10%. We expect the share of 23% administrative expenses for this year and of around 21% for 2002e. Due to economies of scale, the percentage share of administrative expenses should fall to around 14% in 2005e. This and the fact that goodwill on depreciation for wear and tear will no longer apply, should result in an increase of approximately 17% in the EBIT margin in 2001 to around 20% in 2005.

In statement No. 142 of the Financial Accounting Standards Board, depreciation of goodwill and other intangible assets with an unlimited lifetime will no longer apply as of the coming business year to companies reporting in accordance with US GAAP. We estimate that accounting burdens of approximately euro 660,000 will no longer apply for Eckert & Ziegler, which results in an increase in the EPS series of euro 0.20 per annum as of 2002.

Decline in administrative expenses to 2005e and a slight fall in gross margin

Removal of goodwill on depreciation for wear and tear will increase EPS by euro 0.2 p.a.

Goodwill on depreciation for wear and tear

	2002	2003	2004	2005
Activated goodwill from IPL acquisition (Euro 000)	688	688	688	688
Activated goodwill from DuPont acquisition (Euro 000)	8,011	8,011	8,011	8,011
Depreciation of goodwill no longer applicable (Euro 000)	565	565	565	565
Depreciation on intangible assets no longer applicable (Euro 000)	100	100	100	100
Number of shares (thousand units)	3,250	3,250	3,250	3,250
Effect on EPS series	0.20	0.20	0.20	0.20

Source: DZ BANK

We forecast annual EPS growth of around 40% from the period between 2000 and 2005e, from euro 0.40 in 2000 to euro 2.17 in 2005e. The ratio of earnings to sales (CAGR 2000-2005e: 20%) should be disproportionately higher. The depreciation on goodwill and on other intangible assets of euro 0.20 per share per annum which will no longer apply will not be included in the EPS series as of 2002.

**EPS CAGR of around 40%
from 2000 to 2005e**

Appendix**Income Statement (US-GAAP)**

EUR '000	2000	2001e	2002e	2003e	2004e	2005e
Sales	23.614,0	32.032,4	37.243,0	42.878,9	50.390,7	57.846,5
<i>% against prev. year</i>	137%	36%	16%	15%	18%	15%
Cost of sales	-14.243,0	-16.164,4	-18.160,2	-21.885,6	-26.199,5	-30.996,6
Gross profit	9.371,0	15.868,0	19.082,8	20.993,3	24.191,2	26.850,0
<i>% against prev. year</i>	114%	69%	20%	10%	15%	11%
Distribution costs	-1.240,0	-3.523,6	-3.724,3	-4.287,9	-5.039,1	-5.784,7
Administration costs	-5.826,0	-7.367,4	-7.821,0	-8.018,4	-8.062,5	-7.809,3
R&D expenditure	-423,0	-1.281,3	-1.117,3	-857,6	-1.007,8	-1.156,9
Other operating expenses/income	166,0	864,9	-223,5	-257,3	-302,3	-347,1
Operating profit (EBIT)	2.048,0	4.560,6	6.196,7	7.572,2	9.779,5	11.752,0
<i>% against prev. year</i>	372%	123%	36%	22%	29%	20%
Interest income	462,0	-58,1	19,4	140,6	321,4	563,3
Other income	0,0	0,0	0,0	0,0	0,0	0,0
Profit/loss	2.510,0	4.502,5	6.216,1	7.712,8	10.100,9	12.315,3
<i>% against prev. year</i>	11852%	79%	38%	24%	31%	22%
Extraordinary profit/loss	0,0	0,0	0,0	0,0	0,0	0,0
Profit before tax	2.510,0	4.502,5	6.216,1	7.712,8	10.100,9	12.315,3
<i>% against prev. year</i>	11852%	79%	38%	24%	31%	22%
Tax	-1.257,0	-2.136,3	-2.698,7	-3.329,6	-4.342,1	-5.279,0
<i>Tax rate</i>	50%	47%	43%	43%	43%	43%
Profit after tax	1.253,0	2.366,2	3.517,5	4.383,2	5.758,8	7.036,3
<i>% against prev. year</i>		89%	49%	25%	31%	22%
Minority interest	0,0	0,0	0,0	0,0	0,0	0,0
Profit after minorities	1.253,0	2.366,2	3.517,5	4.383,2	5.758,8	7.036,3
Adjusted profit after minorities	1.253,0	2.366,2	3.517,5	4.383,2	5.758,8	7.036,3
Average number of shares, fully diluted (m)	3,146	3,250	3,250	3,250	3,250	3,250
Fully diluted earnings per share	0,40	0,73	1,08	1,35	1,77	2,17
Depreciation/Amortisation	2.921,0	3.745,5	2.836,3	3.370,7	3.604,9	3.878,4
EBITDA	4.969,0	8.306,0	9.033,0	10.942,9	13.384,4	15.630,4

Source: Eckert & Ziegler AG and DG Bank estimates

Balance Sheet (US GAAP)

US-GAAP - EUR '000	2000	2001e	2002e	2003e	2004e	2005e
ASSETS						
Intangible assets	14.434,0	14.288,5	14.527,7	14.739,8	14.750,6	14.760,2
(of which goodwill)	9.500,0	8.935,0	8.935,0	8.935,0	8.935,0	8.935,0
Tangible assets	18.636,0	19.231,0	19.205,6	18.772,8	18.807,1	17.569,1
Financial assets	644,0	644,0	644,0	644,0	644,0	644,0
Other fixed assets	266,0	266,0	266,0	266,0	266,0	266,0
Fixed assets	33.980,0	34.429,5	34.643,3	34.422,6	34.467,7	33.239,3
<i>% against prev. year</i>	143%	1%	1%	-1%	0%	-4%
Inventories	3.154,0	4.164,2	4.469,2	4.716,7	5.039,1	5.784,7
Trade receivables	5.102,0	6.406,5	7.448,6	8.575,8	10.078,1	11.569,3
Liquid assets/Current investments	7.221,0	8.495,4	10.312,5	14.174,9	18.973,9	25.888,9
Other current assets	1.041,0	1.038,0	1.038,0	1.038,0	1.038,0	1.038,0
Current assets	16.518,0	20.104,1	23.268,3	28.505,4	35.129,1	44.280,8
<i>% against prev. year</i>	45%	22%	16%	23%	23%	26%
Total assets	50.498,0	54.533,6	57.911,5	62.928,0	69.596,8	77.520,1
<i>% against prev. year</i>	99%	8%	6%	9%	11%	11%
LIABILITIES						
Share capital	3.250,0	3.250,0	3.250,0	3.250,0	3.250,0	3.250,0
Reserves	26.926,0	28.121,0	30.487,2	34.004,6	38.387,8	44.146,6
Other equity	2.097,0	3.268,2	4.419,5	5.285,2	6.660,8	7.938,3
Shareholders' equity	32.273,0	34.639,2	38.156,6	42.539,8	48.298,6	55.334,9
<i>% against prev. year</i>	145%	7%	10%	11%	14%	15%
Minority interest	0,0	0,0	0,0	0,0	0,0	0,0
<i>% against prev. year</i>						
Pensions provisions	86,0	82,0	80,0	80,0	80,0	80,0
Other provisions	2.887,0	2.950,2	3.121,6	3.271,3	3.510,1	3.731,5
Interest bearing liabilities	4.940,0	4.690,0	4.610,0	4.530,0	4.450,0	4.370,0
Trade accounts payables	1.914,0	2.882,9	3.351,9	3.859,1	4.535,2	5.206,2
Other debt capital	8.398,0	9.289,3	8.591,4	8.647,8	8.722,9	8.797,5
Debt capital	18.225,0	19.894,5	19.754,9	20.388,2	21.298,2	22.185,2
<i>% against prev. year</i>	49%	9%	-1%	3%	4%	4%
Total liabilities	50.498,0	54.533,6	57.911,5	62.928,0	69.596,8	77.520,1
<i>% against prev. year</i>	99%	8%	6%	9%	11%	11%

At year end December

Source: Eckert & Ziegler AG and DG Bank estimates

Cash flow Statement

EUR '000	2000	2001e	2002e	2003e	2004e	2005e
Net income/Net loss before minority interest	1.253,0	2.366,2	3.517,5	4.383,2	5.758,8	7.036,3
Depreciation/Appreciation on fixed assets	2.921,0	3.745,5	2.836,3	3.370,7	3.604,9	3.878,4
Increase/Decrease in provisions	1.696,0	59,2	169,4	149,7	238,8	221,4
Other items	-18,0	0,0	0,0	0,0	0,0	0,0
Change in working capital	-3.930,0	-1.239,4	-826,0	-811,1	-1.073,6	-1.491,2
Change in other current assets	4.344,0	955,0	-750,0	0,0	0,0	0,0
Cash flow from operating activities	6.266,0	5.886,4	4.947,1	7.092,4	8.528,9	9.645,0
Proceeds from sales of fixed assets	371,0					
Investments in tangible and intangible assets	-23.339,0	-4.195,0	-3.050,0	-3.150,0	-3.650,0	-2.650,0
Capital expenditure	116,0	0,0	0,0	0,0	0,0	0,0
Cash flow from investment activities	-22.852,0	-4.195,0	-3.050,0	-3.150,0	-3.650,0	-2.650,0
Equity funding	17.290,0	0,0	0,0	0,0	0,0	0,0
Dividend payment for previous year	0,0	0,0	0,0	0,0	0,0	0,0
Debt financing	1.460,0	-250,0	-80,0	-80,0	-80,0	-80,0
Cash flow from financing activities	18.750,0	-250,0	-80,0	-80,0	-80,0	-80,0
Other changes in liquid assets	220,0					
Change in liquid assets	2.384,0	1.441,4	1.817,1	3.862,4	4.798,9	6.915,0

Year end December

Source: Eckert & Ziegler AG and DG Bank estimates

Key financial Ratios

<i>EUR</i>	2000	2001e	2002e	2003e	2004e	2005e
Profit and loss ratios						
Total output / sales (m)	23,6	32,0	37,2	42,9	50,4	57,8
EBITDA margin	21,0%	25,9%	24,3%	25,5%	26,6%	27,0%
EBIT margin	8,7%	14,2%	16,6%	17,7%	19,4%	20,3%
EBT margin	10,6%	14,1%	16,7%	18,0%	20,0%	21,3%
Net margin	5,3%	7,4%	9,4%	10,2%	11,4%	12,2%
Investment / Sales	63,0%	13,1%	8,2%	7,3%	7,2%	4,6%
R&D / Sales	1,8%	4,0%	3,0%	2,0%	2,0%	2,0%
Admin and distribution costs as % of sales	29,9%	34,0%	31,0%	28,7%	26,0%	23,5%
Other net operating costs as % of total output (sales)	-0,7%	-2,7%	0,6%	0,6%	0,6%	0,6%
Net interest income as % of total output (sales)	2,0%	-0,2%	0,1%	0,3%	0,6%	1,0%
Interest cover		78,5				
Dividend payout as % of net income	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Average sales growth next five years	19,6%	14,4%				
Average earnings growth next five years	40,3%	26,2%				
Profitability ratios						
ROE	3,9%	6,8%	9,2%	10,3%	11,9%	12,7%
ROCE	6,3%	13,7%	17,7%	21,3%	26,6%	31,8%
Productivity						
Sales per employee ('000)	137,69	151,81	168,14	188,48	219,09	251,51
EBIT per employee ('000)	11,94	21,61	27,98	33,28	42,52	51,10
Balance sheet ratios						
Shareholders' equity / Total assets	63,9%	63,5%	65,9%	67,6%	69,4%	71,4%
Gearing (%) or Net cash (m)	2,6	4,1	6,0	9,9	14,8	21,8
Long term debt / Fixed assets	117,6%	124,5%	131,5%	145,0%	161,4%	188,5%
Liquidity (quick ratio)	116,7%	127,1%	142,7%	172,3%	204,2%	246,1%
Trade receivables as % of total output (sales)	21,6%	20,0%	20,0%	20,0%	20,0%	20,0%
Investment (net of GW) / Depreciation	581,5%	131,9%	107,5%	93,5%	101,3%	68,3%
Working capital	26,0%	23,0%	22,0%	21,0%	20,0%	20,0%
Figures per share						
Earnings per share	0,40	0,73	1,08	1,35	1,77	2,17
Fully diluted earnings per share	0,40	0,73	1,08	1,35	1,77	2,17
Cash earnings per share	1,46	1,88	1,95	2,39	2,88	3,36
Fully diluted cash earnings per share	1,46	1,88	1,95	2,39	2,88	3,36
Book value per share	10,26	10,66	11,74	13,09	14,86	17,03
Dividend per common share	0,00	0,00	0,00	0,00	0,00	0,00
Valuation ratios						
Enterprise value / Sales	7,0	1,3	1,1	0,8	0,6	0,4
Enterprise value / EBITDA	33,5	5,0	4,3	3,2	2,3	1,5
Enterprise value / EBDIT	36,1	5,3	4,3	3,2	2,3	1,5
Enterprise value / EBIT	81,3	9,0	6,3	4,7	3,1	2,0
Price/Earnings - common shares	130,8	19,2	12,9	10,4	7,9	6,5
Price/Cash earnings - common shares	35,8	7,4	7,2	5,9	4,9	4,2
EV/Sales to sales growth	0,18	0,07	0,07	0,06	0,04	0,03
PEG ratio - common shares		0,48	0,49			
Dividend yield per common share	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

Year end December

Source: Eckert & Ziegler AG and DG Bank estimates

Glossary

Androgenic suppression	Suppressing the elution or effect of male hormones (in particular testosterone)
Angioplasty	Procedure to eliminate narrowing in parts of the arterial system. Used as so-called PTCA to expand narrowed coronary arteries.
Antibodies	Specific proteins which defend against disease-causing agents and which destroy tumour cells
Audiometer	Instrument using electro acoustics to gauge the power of hearing
Balloon dilatation	Using an expandable balloon which is inserted in the vessel to expand the artery
Biopsy	Removal of a tissue sample for medical diagnosis
Brachytherapy	Contact treatment mainly in the form of radiation where the distance between the source of radiation and the tissue is minimal
Calibration	Adjusting measuring instruments according set standards
Carcinoma	Surface tissue malignant tumour
Cardiology	Sub-sector of internal medicine that deals with the causes, effects and possible treatments of heart disease
Cardiovascular	Pertaining to the heart and circulatory system
Catheter	Tube-like instrument inserted in vessels or cavities
Choroid membrane melanoma	Most frequent malignant tumour of the eye which occurs mainly with old age
Convalescence	Recovery
Coronary	Pertaining to coronary arteries
Coronary arteries	Crown-like vessels which supply the heart muscles with oxygen and nutrients
De novo	New, primary occurrence
Dermatology	Specialist medical area concerned with diseases of the skin and mucous membranes
Eye applicators	Anatomically formed sources of radiation for radiation treatment of eye tumours
Gamma camera	Camera used for imaging diagnosis in nuclear medicine. Used in scintographic imaging.
Gynaecology	Branch of medicine that deals with diseases and disorders of the female reproductive system
Implantation	Implanting foreign materiel in the body

Glossary

Implants	Natural or false materials which are implanted in the body (here used synonymously with seeds)
Insufflators	Equipment used to blow gasses into the body's cavities
Interstitial	Lying between tissues (interstitium)
Interventional	Intervening to eliminate diseased factors
Intra-coronary	Contained in the coronary arteries
Isotope	Chemical elements having the same atomic number but different atomic weights. Isotopes can be either stable or radioactive.
Linear accelerator	Particle accelerator/centrifuge which produces high-energy electro and gamma radiation
Malignant	Malignant tumour
Minimally invasive	As gentle as possible, less invasive
Monoclonal	From one cell clone
Morphology	Pertaining to the outer form or structure of organisms
Myocardial infarction	Heart attack. Collapse of the heart muscles due to lack of circulation
Navigation robot	Robot-supported technology for the exact positioning of three-dimensional treatment aids
Nuclear medicine	Specialist medical area which deals with the use of mainly ephemeral radionuclides in diagnostic and therapeutic applications
Nuclear therapy	Remedies using radionuclide radiation for treatment purposes (c.f. radiopharmaceuticals)
Oncology	Specialist medical area which deals with the origin and treatment of malignant tumours
Orthopaedics	Study of bone and joint disorders
PET-Scanner	Instrument for positron emission tomography. Special application procedure in nuclear medicine
Positioning system	Instrument for the exact positioning of implants (c.f. navigation robotics)
Prevalence	Frequency of illness
Prevention	Precautionary
Proliferation	Cell division or tissue reproduction (injury related)

Glossary

Promoter	Catalyst
Prostate	Chestnut-sized, course gland situated around the neck of a man's bladder
Prostectomy	Surgical removal of the prostate
Radioactivity	Characteristic of unstable nuclides where corpuscular radiation (alpha and beta rays) or electromagnetic waves (gamma rays) are emitted either spontaneously or through disintegration of atomic nuclei
Radiobiology	Special scientific application, which combines the science of biology and radiation
Radiopharmaceuticals	Drugs which react on the basis of radioactive nuclides
Radiotherapy	Please refer to nuclear treatment (synonymous terms)
RAVEL(-study)	Clinical study on „Randomized Double Blind Study with a sirolimus eluting Bx velocity balloon-expandable stent in the treatment of patients with de novo native coronary artery lesions“
Relapse	Recurrence of illness
Restenosis	Renarrowing (of previously widened arteries)
Retinoblastoma	Malignant retinal tumour which occurs in children or seldom in adolescents
Scintigraphic imaging	Production of images in nuclear medicine using mainly gamma rays for diagnostic purposes
Screening	Investigative testing to determine stages of illness which have no clinical symptoms. Often used as an early indicator
Seed	Radioactive isotopes embedded in small metal rods for interstitial radiation treatment
START(-Studie)	Clinical study on „Stents and Radiation Therapy“
Stenosis	Congenital or inherited narrowing of the arteries or orifices
Stent	Mesh-type mostly metal support which expands following implantation and is often used to keep expanded arteries open
Strontium 90	Radio isotope which transmits beta radiation
Target	Target structure through which the effects of treatment are developed
Urology	Specialist medical field which deals with illnesses of the urethra and male genitals
Versus	Latin for “against”

Source: DZ BANK

Financial calendar for NEMAX Medtech & Healthcare companies**October**

22.10.01	BB Medtech	Quarterly report Q3/2001
30.10.01	Wavelight	Annual report 2000/01, analysts conference (Munich)
31.10.01	Wavelight	Annual report 2000/01, analysts conference (Frankfurt)
End October	Rösch	Annual report (01.08.2000-31.07.2001)

November

06.11.01	Rösch	Analysts conference, balance sheet press conference
12. – 16.11.01	UMS	Quarterly report Q3/2001
13.11.01	Eckert & Ziegler	Quarterly report Q3/2001
13.11.01	W.O.M.	Quarterly report Q3/2001
13.11.01	Euromed	Quarterly report Q3/2001
22.11.01	Biolitec	Quarterly report Q1/2001
29.11.01	Biolitec	Annual General Meeting
30.11.01	aap	Quarterly report Q3/2001

December

04.12.01	Rösch	Annual General Meeting
14.12.01	Asclepion	Annual report 2000/01, analysts conference, balance sheet press conference
20.12.01	Wavelight	Quarterly report Q1/2001/02

January

16.01.02	Wavelight	Annual General Meeting
30.01.02	BB Medtech	Analysts conference

March

15.03.02	BB Medtech	Annual report 2001
20.03.02	Wavelight	Quarterly report Q2/2001/02
27.03.02	Eckert & Ziegler	Annual report 2001
28.03.02	Eckert & Ziegler	Analysts conference
28.03.02	Euromed	Annual report 2001

April

24.04.02	BB Medtech	Quarterly report Q1/2002
30.04.02	BB Medtech	Annual General Meeting

Source: company information

Research-Team „Life Science“

Dr. Christa Bähr, CFA	Pharma/Biotechnology	+ 49 – (0) 69 – 74 47 – 72 42	christa.baehr@dzbank.de
Dr. Jochen Badouin	Healthcare	+ 49 – (0) 69 – 74 47 – 62 74	jochen.badouin@dzbank.de
Christian Englert	Healthcare	+ 49 – (0) 69 – 74 47 – 16 04	christian.englert@dzbank.de
Dr. Patrick Fuchs	Biotechnology/Healthcare	+ 49 – (0) 69 – 74 47 – 22 48	patrick.fuchs@dzbank.de
Dr. Thomas Höger	Biotechnology	+ 49 – (0) 69 – 74 47 – 30 67	thomas.hoeger@dzbank.de
Dr. Heinz Müller	Agro/Green Biotech/Chemistry	+ 49 – (0) 69 – 74 47 – 79 47	heinz.mueller@dzbank.de
Martin Rödiger, CEFA	Chemistry/Grey Biotech	+ 49 – (0) 69 – 74 47 – 18 94	martin.roediger@dzbank.de
Dirk Schlamp, CEFA	Biotechnology	+ 49 – (0) 69 – 74 47 – 36 77	dirk.schlamp@dzbank.de
Oliver Schlüter	Biotechnology/Pharma	+ 49 – (0) 69 – 74 47 – 16 04	oliver.schlueter@dzbank.de
Peter Spengler, CEFA	Pharma/Healthcare	+ 49 – (0) 69 – 74 47 – 36 94	peter.spengler@dzbank.de

Equity Sales

Frankfurt, domestic	+49-(0)69-7447-6710	patrick.thielmann@dzbank-dip.de
Frankfurt, international	+49-(0)69-7447-6710	alexander.deuss@dzbank-dip.de
New York	+1-212-745-1635	michael.hintz@dzbank.de
Tokio	+81-35473-4855	hschmidt@dzbank.co.jp
Verbund	+49-(0)69-7447-2690	andrea.lenz@dzbank.de

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