



## Small & Mid Caps

<b>Current price</b>	<b>€16.81</b>
<b>Target price</b>	<b>€22.00</b>
Market cap.	€40.1m
Free float	43.3%
Average daily trade	€0.12m

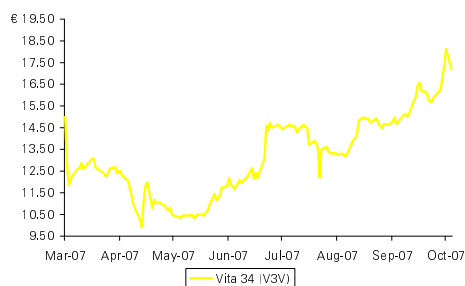
### News flow

- 12 November 2007 Eigenkapital Forum
- February 2008 Full-year 2007 results

### Company profile

Vita 34 International AG is a private umbilical cord blood bank headquartered in Leipzig, Germany. The company offers expectant parents the one-time opportunity to preserve and store their baby's cord blood, i.e. stem cells, for potential medical use. Vita 34 has approximately 84 full-time employees.

### Price performance



Source: Bloomberg

### Analyst

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# VITA 34 INTERNATIONAL

V3V GR ; V3VGn.DE

**Buy**

(Initiation)

## Strong growth outlook

**We believe the prospects for growth in stem-cell storage are bright. As the largest umbilical cord blood bank in Germany Vita 34 is ideally positioned to benefit from this growing market. We initiate coverage with a Buy recommendation and €22.00 target price.**

### Significant market growth potential

The umbilical cord stem-cell market is in its infancy. In the German-speaking area penetration rates are less than 1.8%. Market penetration in countries with higher awareness of stem-cell storage ranges from 9% to 15%. Other countries show that penetration can be increased by creating awareness in expectant parents. We estimate the market is worth c. €1.1bn.

### Leader in a market with high entry barriers

Vita 34 is the largest umbilical cord blood (UCB) bank in the German-speaking area, with a market share of more than 66%. In Germany it has strategic partnerships for production accreditation with more than 850 out of a total of some 950 clinics. This exceeds any other competitor in the German-speaking area and creates substantial entry barriers for potential contenders.

### Expecting revenues to roughly double by 2009

Vita 34 is using funds raised in its March IPO to implement new marketing measures and expand its sales force substantially. We expect sales to roughly double to €28.9m by 2009, from €14.9m in 2007. Q3 results rose some 46% y-o-y driven by increased storage units in Germany and Spain.

### Attractive risk reward profile

Vita 34's business model of collecting and storing valuable umbilical stem cells is simple. Combined with high barriers to entry this gives Vita 34 a medium-risk and high-reward profile. We expect robust quarterly performance and positive news flow about progress on stem-cell therapies to be positive catalysts for the stock.

### Beginning coverage with a Buy rating

Our DCF-derived €22.00 target price equates to approximately 2.6x our full-year 2008 sales forecast of €19.0m, a slight discount to Vita 34's peer-group universe (2.7x-2.8x). This is also below the 3.0x 2008 sales paid in early October by Perkin Elmer to acquire Vita's US peer Viacell.

### Key data

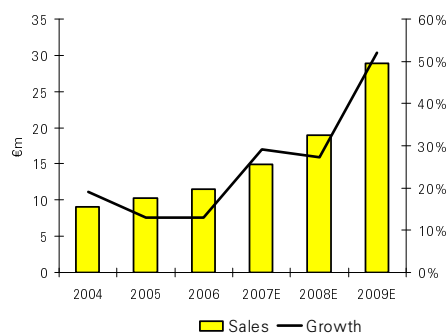
Year-end Dec	2004*	2005	2006	2007E	2008E	2009E
Net sales (€m)	9.0	10.2	11.6	14.9	19.0	28.9
EBITDA (€m)	0.5	1.5	0.8	-1.9	-2.0	1.3
EBITDA margin	5.9%	14.2%	6.9%	-12.4%	-10.7%	4.4%
Free cash flow (€m)	0.5	0.7	0.4	-3.5	-3.3	-0.5
FCF margin	5.9%	7.1%	3.1%	-23.6%	-17.2%	-1.8%
Net profit (€m)	-0.5	-1.9	-2.9	-1.6	-1.7	0.6
EPS as reported (€)	-0.26	-1.07	-1.40	-0.61	-0.64	0.23
EPS as adjusted (€)	-0.26	-1.07	-1.40	-0.61	-0.64	0.23
DPS (€)	0.00	0.00	0.00	0.00	0.00	0.00
EV/Sales (x)	4.9	4.3	3.8	3.0	2.3	1.5
EV/EBITDA (x)	82.6	30.5	55.7	-23.9	-21.8	34.8
P/E (x)	-56.6	-13.9	-10.7	-24.6	-23.4	65.7
Dividend yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gearing	-18.9%	-29.8%	-26.4%	-49.8%	-35.4%	-28.3%
Net debt/ EBITDA	-4.90	-3.21	-4.29	5.05	2.85	-3.77

Source: Company data, First Berlin Equity Research; \* Pro forma figures (unaudited)

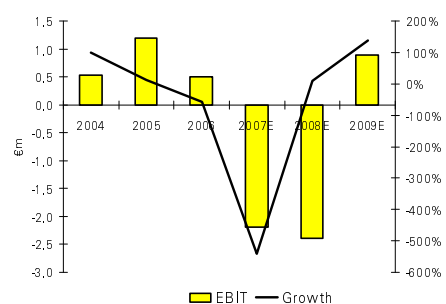
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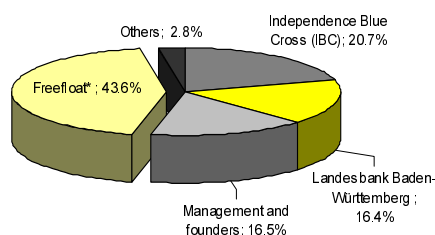
### Sales development



### EBIT development



### Shareholders



\*Freefloat <5% and according to Deutsche Borse definition

Source: Company data, First Berlin Equity Research

### Corporate management

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Reporting: Quarterly

Management stock incentive: Yes

Employee share scheme: No

### Profit & loss

Year-end Dec (€m)	2004*	2005	2006	2007E	2008E	2009E
Sales	9.0	10.2	11.6	14.9	19.0	28.9
Growth y-o-y	-	13.1%	12.9%	29.2%	27.3%	52.0%
Gross profit	5.8	6.8	7.9	10.5	13.4	20.4
as % of total output	63.5%	66.7%	68.3%	70.2%	70.4%	70.5%
EBITDA	0.5	1.5	0.8	-1.9	-2.0	1.3
in % of total output	5.9%	14.2%	6.9%	-12.4%	-10.7%	4.4%
EBIT	0.5	1.2	0.5	-2.2	-2.4	0.9
as % of total output	5.9%	11.7%	4.3%	-14.7%	-12.6%	3.1%
EBT	0.3	1.0	0.5	-3.2	-2.4	0.9
as % of total output	3.0%	10.1%	4.1%	-21.5%	-12.7%	3.0%
Tax	0.4	-0.5	-0.3	0.5	0.7	-0.3
as %	161.7%	-53.0%	-61.1%	-14.1%	-30.0%	-30.0%
Net profit	-0.5	-1.9	-2.9	-1.6	-1.7	0.6
as % of total output	-5.1%	-18.7%	-24.8%	-10.8%	-8.9%	2.1%
EPS (€)	-0.26	-1.07	-1.40	-0.61	-0.64	0.23

Source: Company data, First Berlin Equity Research; \* Pro forma figures (unaudited)

### Balance sheet

Year-end Dec (€m)	2004*	2005	2006	2007E	2008E	2009E
Fixed assets	18.6	18.4	18.0	16.7	17.3	18.2
Net working assets	-1.2	-0.5	1.5	2.5	3.1	4.0
Balance sheet total	25.3	27.1	25.8	30.9	28.9	30.0
Net debt (liquidity)	-2.6	-4.7	-3.4	-9.4	-5.8	-4.8
Financial liabilities	2.1	2.0	2.0	2.0	2.0	2.0
Shareholders' funds	13.9	15.6	12.9	18.8	16.4	17.0

Source: Company data, First Berlin Equity Research; \* Pro forma figures (unaudited)

### Cash flow statement

Year-end Dec (€m)	2004*	2005	2006	2007E	2008E	2009E
Capex	-0.5	-0.3	-0.7	-1.0	-0.6	-0.8
Net operating cash flow	1.1	1.1	1.0	-2.5	-2.7	0.3
Free cash flow	0.5	0.7	0.4	-3.5	-3.3	-0.5
Dividend	0.00	0.00	0.00	0.00	0.00	0.00

Source: Company data, First Berlin Equity Research; \* Pro forma figures (unaudited)

### Key ratios

Year-end Dec	2004*	2005	2006	2007E	2008E	2009E
Net debt/equity (incl GW) (%)	-18.9	-29.8	-25.2	-49.8	-35.4	-28.3
Interest cover (x)	-2.0	-9.1	-30.6	70.8	76.8	-45.8
Equity ratio (incl goodwill) (%)	54.9	57.8	50.1	60.9	56.8	56.7
ROE (incl goodwill) (%)	-3%	-12%	-22%	-9%	-10%	4%
Post-tax ROCE (%)	0%	3%	1%	-12%	-10%	4%
Sales/employee (€m)	0.1	0.1	0.1	0.2	0.2	0.3
EBITDA/employee (€m)	0.0	0.0	0.0	0.0	0.0	0.0
Net working assets/sales (%)	-13.0	-4.5	-6.7	0.5	3.3	5.2
EV incl pensions/sales (x)	4.9	4.3	3.8	3.0	2.3	1.5
EV incl pensions/EBITDA (x)	82.6	30.5	55.7	-23.9	-21.8	34.8
EV incl pensions/EBIT (x)	82.6	37.2	89.4	-20.3	-18.5	49.8

Source: Company data, First Berlin Equity Research; \* Pro forma figures (unaudited)

## Investment case

*We initiate coverage with a Buy rating and a €22.00 target price. Vita 34's collection and storage of newborn babies' UCB is a simple business model*

We initiate coverage of Vita 34 with a Buy recommendation and a €22.00 target price. Vita 34 is a private cord blood bank, offering expectant parents the one-time opportunity to preserve and store their baby's umbilical cord blood (UCB) for possible future medical use. A growing body of evidence supports the therapeutic use of UCB in over 70 diseases including cancer and other blood and immunodeficiency disorders. UCB also offers the promise of a wider range of indications in the future such as heart disease, stroke, Alzheimer's, multiple sclerosis, diabetes, bone, skin and tissue regeneration, and others. The increasing amount of stem-cell research and related therapies will drive demand for storing UCB stem cells.

*Stem-cell research is an under-penetrated market*

Stem-cell research represents one of the most under-penetrated market opportunities of the healthcare sector. In the German-speaking area the penetration rate is less than 1.8%, showing the huge potential of this emerging market when compared with penetration rates in more developed UCB-bank markets such as South Korea, Greece and Taiwan; where it ranges between 9% and 15% of birthing parents. We conclude that expectant parents' awareness of UCB storage is still very low and could, similar to other countries, be increased substantially through intensive marketing. We estimate the market potential in Germany at some €1.1bn.

*High entry barriers limit risk: Vita 34 – undisputed market leader in the German-speaking area*

We believe Vita 34 is well positioned to prosper within this fast-growing market. The company has strategic partnerships (as required by German law) for production accreditation with over 850 clinics in Germany, out of a total of some 950. This number exceeds any other competitor in the German-speaking area and creates substantial entry barriers for potential contenders. Moreover, as the largest UCB bank in the German-speaking area Vita 34 has a dominant position with a market share of c. 66%.

*Strong 9M 2007 results reinforce our expectation of sound top-line growth over the period 2007-09*

Benefiting from its first marketing measures, implemented last year, Vita 34 reported strong Q3 2007 results and increased its outlook for 2007. We believe sales growth will accelerate – roughly doubling in the period 2007-09 – from increased marketing and a significantly expanded sales force, up from 9 to 40 by 2008. This will enable more comprehensive physician targeting and expansion into key regions within Germany. In addition, the company's sales reach in Europe should grow through the establishment of further distribution partnerships similar to that with Secuvita in Spain. The company has been profitable since 2004. Expected losses will result from investment in growth but should be short-lived. The company raised €9m from the IPO in March 2007 and financials are very solid.

*Our €22 price target is conservative and represents a slight discount to the peer group*

We arrive at our Buy rating and €22.00 target price by using our discounted cash flow (DCF) model, supported by a peer-group analysis comprising of mainly small-cap, high-growth, cord-blood banking, medical technology and life sciences companies. Our valuation equates to c. 2.6x our full-year 2008 sales forecast of €19.0m and represents a slight discount to our peer-group universe, which, based on mean or median, is currently trading at an average EV/sales multiple of 2.7x or 2.8x respectively, for full-year 2008. Moreover, in early October the life science instruments large cap Perkin Elmer acquired Vita 34's US comparable peer Viacell for a price representing c. 3.0x of expected 2008 sales, showing that UCB banks are gaining attractiveness.

*Positive catalysts ahead*

We anticipate catalysts for the stock to be: an increase in investor awareness of Vita 34's attractive medium-risk and high-reward profile, a robust quarterly performance, and positive news flow from progress on stem-cell therapies.

## Company overview

### Simple business model

*Vita 34's business model consists of storing newborns' UCB*

Vita 34's business is the collection and storage of newborns' umbilical cord blood (UCB). Vita 34 is a private UCB bank that offers expectant parents the one-time opportunity to preserve and store their baby's UCB.

This blood contains stem cells, which can be used to treat more than 70 life-threatening diseases such as some cancers and other blood disorders. There is also the potential for stem cells to be used for a wider range of indications in the future; such as heart disease, stroke, Alzheimer's, multiple sclerosis, diabetes, bone, skin and tissue regeneration, and others. As a result, by preserving their children's stem cells, parents are biologically insuring additional treatment options for their children.

There is no ethical controversy in the extraction of UCB stem cells, since the afterbirth would otherwise be discarded as biological waste.

*Advertising stirs awareness in expectant parents; call centre handles sales*

Expectant parents usually learn about Vita 34 through several sources; such as printed advertisements in specialised magazines, the internet and from co-operating insurance companies such as BKK Fahr. Expectant parents then contact Vita 34's call centre to request information. After sending an information package, the call centre's sales people contact the expectant parents and follow up during their decision-making process. If the parents are convinced about the advantages of the products they will sign the open-ended contract; usually 4-6 weeks before childbirth.

Vita 34 charges an initial collection and processing fee of €1,990 including VAT and yearly storing charge of €30 after the child's first birthday.

### Collection and storage procedure

*Cord blood taken to hospital immediately after birth; then sent to Vita 34*

Vita 34 sends an extraction set to the expectant parents 4-5 weeks prior to childbirth, which they take with them to the hospital. All materials are coded so not to be mistaken. In the 30 seconds after the umbilical cord is clamped, the blood has to be drained into a sterile, anti-coagulating, blood-collection bag within 3-5 minutes by an obstetrician, nurse-midwife, or designated collector. Normally, 60-120 millilitres of blood is collected.

Blood extraction does not harm the baby as it is taken from the umbilical cord, which is connected to the placenta. The blood is then transported to the laboratory within, at most, 24 hours. In the laboratory, employees take a blood sample to examine its quality, which is then communicated to the parents. The blood is tested for volume, number and viability of nucleated cells, sterility, blood typing, Rh status, presence of bacteria or virus, and percentage of vital stem cells. Only if the results of the examination are satisfying will the parents receive a certificate and the bill.

*Vita stores entire UCB sample at -196°C*

The sample is then ready for cryopreservation (cryo=cold). The blood is stored in big steel tanks using nitrogen so that the temperature amounts to -196°C. Vita 34 stores the entire UCB sample and not, like other companies, only the extracted blood cells. This has the advantage that certain blood components, which can potentially be useful in the future, are not discarded.

### Recent history

*Vita 34, headquartered in Leipzig, Germany, was the first private UCB bank in Europe*

Vita 34 was founded in 1997 as the first private autologous umbilical cord blood (UCB) bank in Europe, with its headquarters in Leipzig, Germany.

Since its foundation the company has raised approximately €9.3m from venture capital, private placements and silent partnerships. Vita 34 achieved break-even in 2001 – being profitable since 2004 – and is by far the market leader in its home country of Germany with a share higher than 66%.

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*Operations in the German-speaking area and distributors in Spain and Denmark. US subsidiary sold in 2006.*

To accelerate the penetration rate in its core markets, the company conducted its IPO on the Prime Standard of the Frankfurt Stock Exchange on 27 March 2007; placing 600,000 shares at €15 per share and raising some €9m. Vita 34 will invest the majority of these funds in building up the sales team and reinforcing marketing activities.

Vita 34 is organised as a holding company called 'Vita 34 International AG', which owns the German 'Vita 34 AG'. Vita 34 AG is also active in German-speaking countries Austria and Switzerland, and has had distribution partnerships with Spanish company Secuvita since 2006, and Danish UCB bank Stemcare since 2005.

In 2004, holding company Vita 34 International AG acquired the United States UCB bank Corcell, which was sold to Cord Blood America, Inc. in October 2006. Corcell did not meet Vita 34 management's expectations, as it became clear that expansion into the competitive US market to achieve critical mass was not possible without investing substantial financial resources. Vita 34 decided to strengthen its focus on the German-speaking countries, and has distribution plans into the rest of Europe through selected partnerships. In the near future, we believe the company will simplify its holding structure and merge the German Vita 34 AG into the holding company.

In addition, Vita 34 is engaged in the research of new stem-cell-based concepts of therapy for diseases of the nervous system, heart and circulation system. The company finances this research through third-party funds and in cooperation with partner universities. In this way Vita 34 minimises risk from early research in this highly promising field; at the same time building up expertise and maintaining a foot in the 'cell therapy' door, which could result in large benefits from potential breakthroughs in the future. Vita 34 works together with cooperation partners of different universities such as its heart-surgery programme with the University of Rostock.

## Marketing strategy

### Leadership in a market with strong growth prospects

*Vita 34's German market share is 66% or more, but penetration is only 1.2%*

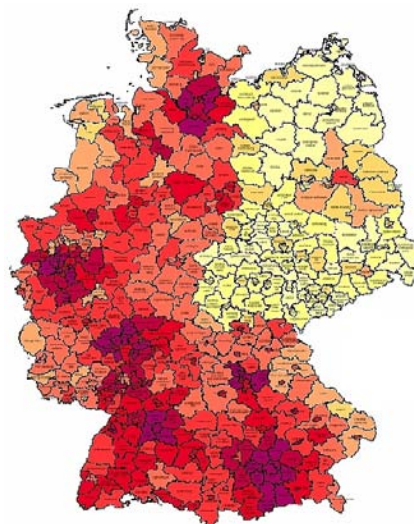
In Germany, Vita 34 currently stores more than 44,000 UCB samples; far more than its key competitors Eticur with some 1,000 and BasicCell with less than 500. Vita 34 is the largest UCB bank in the German-speaking area. Only limited data on the German UCB market is currently available. But we conservatively estimate that Vita 34's market share is approx. 66%, and could be as high 80%. This market share, however, only represents 1.2% of expectant parents. We currently estimate the overall market penetration in Germany at 1.5%-1.8%. This very low penetration rate shows the huge potential of Germany's emerging market, if compared with penetration rates in more developed UCB storing markets such as South Korea with 15%, Greece with 10-12% and Taiwan with 9% of expectant parents. We believe expectant parents' awareness of UCB storage is still very low and could be increased substantially through improved marketing.

*Penetration in region around headquarters is as high as 4%, although this is an economically weak federal state*

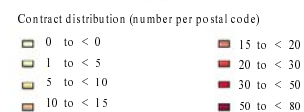
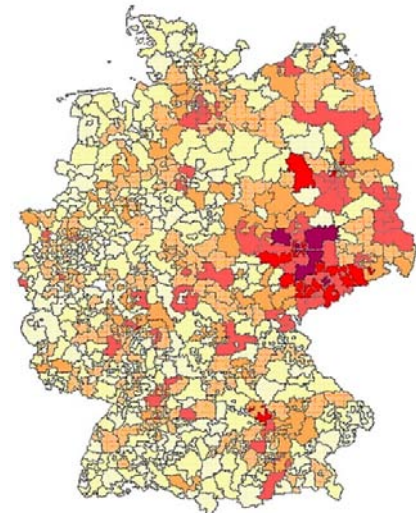
The tremendous upside potential from the company's current status becomes clear when we undertake a regional analysis of Vita 34's exposure in Germany. Most of Vita 34's contracts are closed in the economically weak state of Saxony, around Vita 34's Leipzig headquarters and, in general, in the new federal states. Here Vita 34 achieves a 3% and, in some specific cities, more than 4% penetration rate. This geographic development is due to Vita 34's local contacts with doctors and parents, which confirms the company's growth potential through marketing campaigns. Moreover, in clinics where Vita 34 has a strong presence and where almost every pregnant woman receives information about storing umbilical cord blood, the company has a market share of some 7%. Vita 34 is aiming to expand its market penetration throughout the whole German-speaking area through presentations and other marketing strategies, especially in regions with a high population and purchasing power such as Munich, Rhein-Main, Hamburg, and the Ruhr area.

CHART 1: **Germany's purchasing power against Vita 34's regional penetration**

Purchasing power in Germany (2005)



Vita's contracts in Germany (2005)



Source: Company, First Berlin Equity Research

## Marketing & sales strategy – expansion underway

*Marketing efforts on four key target groups to be intensified*

Vita 34's marketing strategy will focus mainly on increasing penetration in Germany, but also in other European countries. To do this the company is strengthening its marketing muscle by increasing communication, publicity and public relations, as well as its sales force. Vita 34's goal is to create higher awareness about the benefits of stem-cell storage among several target groups. The company has four key target groups which are relevant in the decision process of closing a storage contract:

- Expectant parents
- Gynaecologists and midwives
- Clinics and insurance companies
- Opinion leaders (lobbying)

To better inform expectant parents and facilitate the contractual process, the company has expanded its call centre to currently 12 trained people. Until recently, Vita 34's field staff consisted of seven sales representatives and two midwives, and was split into seven areas within in the German-speaking region. The field staff's aim has been to educate professional groups such as gynaecologists, obstetricians and midwives to achieve higher acceptance. This collaboration with midwives and gynaecologists is essential, as they inform and advise expectant parents.

However, in strategic measures to increase penetration, the company has decided to divide the German region into 10 smaller zones. Each zone will eventually have a field staff of four, consisting of one regional manager, two sales reps and one midwife – bringing the number of field staff up to 40 by 2008.

Furthermore, the company plans to hire a key accounts manager to manage Vita 34's existing strategic partnerships with private insurance companies such as Debeka, Delta Lloyd, MLP Leipzig, BKK Fahr and Swiss Life, as well as to pursue new companies. We see this as substantial upside potential to sales, as insurance companies are an attractive information channel which will leverage Vita 34's UCB-storage services by exposing the company to a new group of potential clients.

## Umbilical cord blood (UCB) storage – German market potential

*We estimate overall German market potential at €1.1bn,...*

The total UCB-storage market is determined by the annual number of births, which in Germany amounts to 680,000. Based on our estimate of Vita 34's average net price per storage of €1,550 including rebates and cancellations, we value the German market at €1.1bn. The key question is how much of this market can be tapped by Vita 34 and other UCB banks.

*...based on experiences in other countries we estimate Vita 34 can tap €150m-422m in mid-term*

We have considered statistics from a Canadian market study, which showed that approximately 70% of interviewed pregnant women in the US had little awareness about the possibility of storing UCB for future therapeutic use. However, after being informed fully, 14% of the interviewed women were willing to invest in this option (Fernandez et al. CMAJ. 2003). If we assumed a similar response in Germany, the market that can be addressed would be worth some €150m.

Furthermore, experience of UCB banks in the US shows that couples with a certain level of education and a yearly combined income of some \$45,000 (approx. 30% of expectant parents) understand the value of UCB stem cells and are largely open to consider storing for private use.

Vita 34's current German clients are typically also educated, well-situated couples. We therefore believe there is a similar pattern in Germany as in the US and currently estimate the economical threshold in Germany at a net income of some €35,000 (approx. \$45,000) which, according to our estimates, roughly represents some 30-40% of expectant parents. As a result, we conservatively estimate a target market value of €316m-422m, which could, however, expand as stem cells show additional value for further diseases. We



therefore see huge value for Vita 34 in pursuing an aggressive marketing strategy to increase awareness of its services and benefits.

## Pan-European expansion – Spain’s Secuvita investment case

*Distribution partner  
Secuvita in Spain; a good  
example of a successful  
partnership*

Vita 34 plans to expand its pan-European reach through strategic partnerships, which will have a similar shape to the company’s collaboration with Spanish company Secuvita. Madrid-based Secuvita is responsible for marketing and collecting UCB, which is then transported to Germany for Vita 34 to store. This partnership was closed in February 2006 and became active in April 2006. Within a year, Secuvita achieved important collaborations with local companies such as the Durango Group – a leader in medical, physical and mental advice to expectant mothers – and the Madrid Hospital Group.

Secuvita has a strong management team, which has implemented a similar marketing strategy to Vita 34’s, adapting it to the local environment. As a result, Secuvita was able to generate 172 blood-storage units in 2006. We expect this to increase to nearly 1,500 in 2007 – adding, according to our estimates, some €1.0m to sales and exceeding Vita 34’s expectations substantially.

On 27 September, as a sign of confidence in the prosperous mutual collaboration, Secuvita and Dr Hans Hansmann, one of the main shareholders, took a strategic participation of 3.02% each, totalling 6.04%, in Vita 34.

## Vita 34 sales model

*We expect Vita 34 to  
more than double sales  
from €11.6m in 2006 to  
€28.9m in 2009*

We have modelled Vita 34’s sales on annual new-birth statistics in Germany and Spain, and our assessment of the impact of the company’s aggressive marketing measures. According to our model (based on conservative assumptions and estimates), we anticipate that Vita 34 will be able to increase sales from €11.6m in 2006 to roughly €28.9m in 2009.

In our model, we have estimated an average net price per storage of €1,550, including rebates and cancellations. Based on the 680,000 births annually in Germany, we conservatively estimate Vita 34 will increase market share from the current 1.2% to 2.6% by 2009. However, we see considerable upside to these forecasts.

Based on 405,000 annual new births in Spain, we have also assumed a conservative Spanish market share which still remains below 1% for several years. Despite Secuvita’s excellent performance so far, we want to see more data before assuming higher growth rates going forward.

TABLE 1: Vita 34 sales model

	2004	2005	2006	2007E	2008E	2009E	2010E	2011E
Stem cell banking Germany:								
Annual number of births Germany ('000)	680	680	680	680	680	680	680	680
Achievable market share	0.9%	1.0%	1.2%	1.3%	1.7%	2.6%	3.6%	4.5%
Vita 34 storage units ('000)	5.8	6.6	7.4	9.0	11.5	17.8	24.7	30.7
Average price per contract excl. VAT (€)	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550
Achievable sales Germany (€'000)	9,049	10,233	11,426	13,955	17,839	27,548	38,338	47,576
y-o-y growth	–	13.1%	11.7%	22.1%	27.8%	54.4%	39.2%	24.1%
Stem cell banking other countries:								
Achievable sales Spain (€'000)	0	0	130	975	1,170	1,346	1,547	1,779
y-o-y growth	–	–	–	648.5%	20.0%	15.0%	15.0%	15.0%

Source: First Berlin Equity Research

## Entry barriers in the German market

*2004-updated German Medicines Law; strong entry barrier to UCB market*

The German Medicines Law updated on August 2004 states that clinics involved in the collection of UCB require a production accreditation. To obtain this, clinics have to close a co-operation agreement with each single blood bank they work with for training of the clinic's personnel.

Since 2004, Vita 34's field staff has made substantial efforts to set in place strategic partnerships with clinics. The company already has contracts with more than 850 hospitals in Germany, from a total of some 950. This number exceeds any other competitor's in the German-speaking area. We believe that due to optimisation of resources and the significant training necessary, clinics will generally not have more than one or two UCB-bank partnerships. This implies that new competitors on the market will have difficulties entering partnerships with clinics and offering their services. The only alternative is to store the blood elsewhere in Europe, such as the Life Sciences Group in Belgium, which, however, brings disadvantages. German expectant parents are more likely to trust a company which has a storage place in Germany and is thus regulated by German law.

*Only a handful of competitors in Germany*

The German Medicines Law is a key reason for the limited level of competition. The handful of companies include Eticur, Life Sciences Group (with two subsidiaries Cryo-Save and Cryo-Care), BasicCell (based in Bad Oeynhausen) and Lifecord (focused on Hamburg area). Below is a brief analysis of Vita 34's key competitors. The table shows that companies without production accreditation in Germany – who therefore store UCB elsewhere (such as Life Science Group) – demand a substantially lower fee.

TABLE 2: **Overview of competitive environment in Germany**

Typical contractual conditions	VITA 34	Eticur	Cryo-Save	Cryo-Care	BasicCell
Advance payment	–	€300	€125	€495	€650
Initial collection and processing fee	€1,990	€2,100	€495	€995	€1,470
Storing fee	€30 p.a.	none	€755	none	none
<b>Total price</b>	<b>€2,590</b>	<b>€2,400</b>	<b>€1,375</b>	<b>€1,490</b>	<b>€2,120</b>
Contractual period	undefined	21 years	20 years	20 years	20 years
Storing place	Germany	Germany	Belgium	Belgium	Germany
Production accreditation	Yes	Yes	–	–	Yes

Source: First Berlin Equity Research

# Umbilical cord blood (UCB) – a treatment with strong potential

## Understanding UCB stem cells

*UCB stem cells have potential to cure a large number of diseases*

Stem cells represent the beginning of life. All cells and tissues of the human body originate from stem cells, which are capable of continuously propagating and differentiating into various kinds of cells or tissues. Cord blood or placenta blood is the blood which remains in umbilical cord vessels and the placenta after cord clamping. This blood contains a high number of stem cells, which wander from the liver and spleen to the bone marrow in the last third of pregnancy, traversing the blood circulation of the child including the placenta and the umbilicus.

Cord blood stem cells are multipotent, meaning that under the right stimuli they can differentiate into several other cell types and tissue present in the body. In this way they can offer a cure for disorders in which defective or missing cells could be replaced via stem-cell transplantation. There is already a lot of research in progress around the world, evidenced by thousands of scientific articles published in leading journals and magazines. However, despite significant scientific strides, stem-cell research is still in its infancy.

## UCB stem cells transplant gaining popularity

*Increasing number of UCB transplants validates value of cord blood*

The first successful UCB transplantation was performed in 1988 in France when a six-year-old boy with severe Fanconi's anaemia received cryopreserved UCB from a HLA-identical sister without the disorder (Gluckman et al. NEJM. 1989; 321; 1174). Since then, around 7,000 UCB transplantations have been conducted worldwide, 6,000 thereof during the last decade. This demonstrates the increasing acceptance of this procedure in recent years.

Statistics show an encouraging success rate of some 85% including cases with bad preconditions. Around two thirds of these patients suffered from leukaemia or other blood diseases. The rest suffered from congenital disturbances or collapse of the bone marrow. UCB stem cells are at present mostly applied as an alternative therapy for bone-marrow transplant, especially in children. After high-dose chemotherapy and radiation of patients, tumour cells and with them all fast-growing tissues such as bone marrow are destroyed. Bone marrow has to be replaced, as it produces red and white blood cells, and platelets, which are essential for life.

Generally, there are two types of cord blood stem-cell transplants; 1) 'autologous', where the patient's own stem cells are used, and 2) 'allogenic', where cells are sourced from the UCB of a genetically compatible donor. The degree of matching between the donated stem cells and a patient depends on particular blood-cell proteins called human leukocyte antigens, or HLA. The higher the HLA compatibility – which in the case of autologous transplants is 100% – the lower the risk of potential complications, such as graft versus host disease (GVHD) and death.

## UCB stem cells taking share from bone-marrow transplant

*UCB has showed superiority to bone-marrow transplant*

UCB stem cells outclass bone-marrow transplants in various ways. In contrast to UCB donation, bone-marrow extraction is an invasive procedure with high risks for the donor such as anaesthesia-related surgical complications including risk of infection, and others. In addition, umbilical stem cells have lower rejection rates (graft versus host disease) as they are relatively premature and the immune system does not easily identify them as 'strange', even if the donor is not the recipient.

UCB storage is particularly beneficial for racial minorities or children with rare forms of leukaemia, with difficulties in finding rapidly a bone-marrow stem-cell match. One third of patients needing bone-marrow transplantation do not find a donor, and 80% of these have been unable to find a UCB match. Statistics show that 100m babies are born worldwide per year, providing a better chance to get the right tissue type for many patients awaiting

treatment. According to some studies, the possibility of UCB transplantation raises the survival chance from 20% to 50%.

The advantage if the donor is the recipient (autologous) is that UCB is a guaranteed HLA match, which results in no risk of rejection and a lower risk of graft versus host disease, in which the transplanted cells attack the patient's body. HLA are antigens on cells which have been shown to strongly influence human allotransplantation and transfusions in refractory patients. The probability that siblings have the same kind of tissue type is 25%, otherwise it is one to many million.

## Many perceived limitations of UCB are a myth

*Autologous UCB stem cells, such as Vita 34's, can be used in individuals weighing up to 70kg*

The low amount of stem cells in UCB is believed to be the most relevant limitation to its use, which is why most transplantations have occurred in children. However, we should clarify that this concern applies more to allogenic transplants. In general, an umbilical cord provides on average of 80ml of blood, containing 700m nucleated cells. The minimum recommended concentration of nucleated cells per kilogram of body weight is 20m/kg for allogenic and 10m/kg for autologous transplantation. These are sufficient for treating an individual of up to 35 kg (allogenic) and 70 kg (autologous).

*Several procedures to multiply stem cells show promising results; we expect approved procedures within next 2-5 years*

Several academic studies show that an important reason for failures in UCB transplantation was the low dose of nucleated cells infused. Scientist Gluckman (NEJM 2001), writing on allogenic transplants, observed that 'patients who received no more than 10m nucleated cells per kilogram had a 75% probability of death, whereas recipients of at least 30m nucleated cells per kilogram had a 30% probability of death'.

Research experts have found several ways to multiply UCB stem cells one hundredfold. However, these methods still have to pass clinical trials to receive approval for treatment. We expect to see some approvals within the next 2-5 years.

Several academic institutions and scientists (Moezzi et al. Elsevier 2005; Denning-Kendall et al.; Stem cells 2003) as well as biotech companies are multiplying stem cells through the addition of growth factors called cytokines (e.g. Cell-Genix-Germany-CE certified for research / Gamida-Isarael-Phase I study, etc).

Another interesting approach is the bioreactor – a closed system where stem cells multiply through the addition of a medium with nutrients in the form of a therapy kit, such as Aastrom's Replicell System, which claims to increase the volume of stem cells by 100-200 times in 12 days.

The system is currently in a Phase III study in the US and in Europe it is CE-certificated. Vita 34 is cumulating expertise in the field through the collaboration with Leipzig University (in pre-clinical studies achieved a 10- to 100-fold increase in 4-14 days). Vita 34 also expects to co-operate later with the company with the most efficient approved technology.

*Recent studies show that slower engraftment of UCB plays only a secondary role, compared with HLA match*

The second limitation of UCB stem cells is the slower engraftment (the process in which transplanted cells start to grow and reproduce within the recipient). Premature stem cells still have to absolve more cycles of division, which takes a longer estimated time of some 26 days compared with roughly 18 days for bone-marrow transplants until the patient has sufficient blood and immune cells. This acceptance time can be dangerous as the patient is not capable of resisting infections. Nevertheless, a recent US study in 503 children with acute leukaemia (Eapen et al., The Lancet, 2007) – comparing transplants of bone marrow with UCB stem cells – showed that the key factor for a positive or negative outcome was actually the HLA match, with dose dependence being a secondary factor, and better or worse engraftment being rather a consequence of the two other factors.

*Many studies suggest UCB can be preserved for centuries, beyond the hitherto recorded 'up to 15 years'*

Third, stored stem cells only provide insurance as long as they are viable. A number of academic studies (Spurr et al. Cryobiology, 2002; Broxmeyer et al. PNAS, 2003) have proved that frozen stem cells retain viability and functional capacity for up to 15 years. Studies on longer periods have not yet been performed. However, analyses by the German Fraunhofer-Institut for Biomedizinische Technik in St. Ingbert suggest that the stored blood can last for many centuries. In cryopreservation, no chemical or biological

process takes place. Simulation models for the calculation of the possible effect of terrestrial or cosmical irradiation on the half time of living cells give a potential half-life for cells of 1,000 to 50,000 years. We found no solid evidence in literature pointing to a premature mutation of cells before one or two centuries.

*We expect the potential uses of UCB to increase dramatically over the next years*

Lastly, several organisations have been conservative in recommending stem-cell banking, arguing that the probability of a person ever using the stored stem cells has been calculated as low as between 0.005% and 0.0037%. However, during the last few years, increasing scientific evidence has positioned the stem cell as a cornerstone of future medical treatments. We therefore expect this figure to dramatically increase as the number of clinical uses of stem cells increases.

## **Use of umbilical cord blood stem cells beyond chemotherapy**

*Stem cells can today be used to treat 70 different diseases*

The use of stem cells from umbilical cord blood (UCB) is increasing rapidly. Today, UCB can not only be used after chemotherapy treatment, but also as part of the therapy regimen in more than 70 different diseases, including all types of cancer, bone-marrow failure syndromes, hemoglobinopathies/blood disorders such as atropic anaemia, sickle cell anaemia (pathological deformation of red blood cells) or Retinoblastoma, inborn errors of metabolism and immunodeficiencies.

*UCB may offer potential cure for many incurable diseases such as Alzheimer's, heart disease, multiple sclerosis, etc.*

Moreover, UCB can differentiate not only into blood cells, but also into neurons, muscle, liver, bone, cartilage cells, and cells which cover the inside of vessels. This offers huge potential in the healing of many incurable diseases by replacing cell defects with these stem cells. As a result, stem cells have the potential to address more indications in the future, including treatment of Alzheimer's disease, heart disease, muscular dystrophy, liver disease, bone regeneration, skin and tissue regeneration for burn victims, stroke, Lou Gehrig's Disease, spinal-cord injuries, diabetes, and multiple sclerosis. Many of these procedures are still at an investigational stage.

*Current research shows promising results in heart disease*

We believe expanded applications for cell therapies, such as in myocardial infarction with some 2.6m patients per year (US and Europe) and peripheral artery disease with some 2.0m patients per year (US and Europe), will drive market growth in the next five to 10 years. There are currently a number of Phase I and Phase II clinical studies underway using bone-marrow stem cells, treating patients with myocardial infarction.

Encouraging experimental results also raise expectations among the scientific community for umbilical stem cells. To give some examples, in April 2005 the journal *Cardiovascular Research* published an article on an encouraging cardiovascular study at the University of Rostock, which showed in an animal model that UCB stem cells support the new vascularisation after a heart infarct, reducing the amplitude of the infarct and the mortality rate. In another case, trials at the University of Zurich and the Deutsche Herz Zentrum in Berlin showed that heart valves generated from UCB stem cells grew with a child's heart, which avoided repeat surgery and associated risks and pain. Until today, a problem for many children with heart failure was that artificial heart valves had to be exchanged after some time because of the ongoing heart growth.

## Financial position

### Financials strengthened after IPO

*IPO was the highlight of 2007, generating €9m gross*

The highlight in 2007 was the successfully completed IPO in March, which significantly improved Vita 34's balance sheet and cash position. Gross proceeds from the IPO amounted to approximately €9m. The IPO-related costs deducted, we estimate net proceeds at around €8.4m. Consequently, we believe the company has secured enough funding to continue business for the next couple of years. As the company has been profitable since 2004, these funds are intended to significantly accelerate sales growth. Vita 34 is in the process of expanding its sales field staff in Germany as well as implementing new marketing measures to increase awareness among the key groups of interest and expectant parents.

### Q3 2007 results

*Strong Q3 2007 results*

The company published a very robust set of Q3 2007 results on 15 October, which were in general better than expected. Revenues increased by an impressive 46% y-o-y to €4.1m, continuing the strong momentum already observed in H1 2007, when revenues rose 51% to €7.4m. The Q3 number of underlying quarterly storage units also hit a new record of 2,972, compared with 2,550 in Q2 2007 and 2,234 in Q3 2006. These strong Q3 figures demonstrate the excellent sales-growth prospects for the company in full-year 2007 and beyond.

The operating result declined to €0.1m in Q3 2007 compared with €0.2m in Q3 2006, mainly due to anticipated intensified marketing measures. Marketing and sales expenditures increased to €2.1m compared with €1.8m in Q2 2007. We believe this figure will continue to increase substantially over the coming quarters, as several marketing campaigns and the sales-representatives hiring process gets underway. Vita 34 reported a net loss from continuing operations of €0.1m for Q3 2007.

*Company 2007 outlook increased*

The company also increased its outlook for 2007, expecting sales to increase by more than 25% (vs. old guidance of a 20-25% increase) and the number of stem-cell storage units by roughly 40% (vs. old guidance of 30%), which is in our view conservative and implies slower growth in Q4 2007.

### Outlook for full-year 2007 and beyond

TABLE 3: VITA 34 forecast

(€'000)	2004	2005	2006	2007E	2008E	2009E	2010E	2011E
Sales Germany	9,049	10,233	11,426	13,955	17,839	27,548	38,338	47,576
y-o-y growth	–	13%	12%	22%	28%	54%	39%	24%
Sales Spain	0	0	130	975	1,170	1,346	1,547	1,779
y-o-y growth	–	–	–	649%	20%	15%	15%	15%
Group sales	9,049	10,233	11,556	14,930	19,009	28,894	39,885	49,356
y-o-y growth	–	13%	13%	29%	27%	52%	38%	24%
Group EBIT	537	1,193	496	-2,188	-2,394	891	5,758	9,218
EBIT margin	6%	12%	4%	-16%	-13%	3%	15%	19%

Source: First Berlin Equity Research

### A strong 2007 so far

*Our FY 2007 projections may prove conservative*

After a strong sales performance in 9M 2007 (+49%), we have conservatively projected that Vita 34 will increase full-year 2007 revenues by 29.2% to €14.9m, generated mainly in Germany (up 22.1% to €14.0m) and Spain (up 648.5% to €1.0m). This assumes a slight sales decline of nearly 11% in Q4 which is generally Vita 34's weakest quarter. In addition, the comparable quarter Q4/06 was extraordinarily strong, since the company's marketing

measures implemented early last year showed its first results towards the end of the year. Nevertheless, we believe there is a chance the company will beat our full-year forecasts.

We forecast the gross margin to increase slightly in 2007 to 70.2% from 68.3% in 2006 due to economies of scale and improved processing. We expect this improvement trend to continue beyond 2007.

We forecast operating expenses to rise substantially from increased marketing and sales expenses on the back of a progressive expansion of the field staff from 9 to 40 by 2008. We project marketing and sales expenses of €9.3m in 2007 from €5.4m in 2006. Thus, we estimate an operating loss of €2.2m in 2007 from an operating profit of €0.5m in 2006.

We anticipate interest income to improve slightly compared with last year due to the positive effect of funds raised from the IPO.

However, full-year 2007 results will be affected by the extraordinary expense of €1.0m booked in Q2 2007 from the impairment of the company's participation in Cord Blood America (CBAI). During the disposal of Corecell to CBAI, Vita 34 received 18.5m shares valued at \$0.11 per share and totalling \$2.0m. Since then the share price has sharply declined to roughly \$0.05 at the end of Q2 2007, totalling a loss of \$1.1m, or approx. €0.8m. In addition, the company wrote down two credit accounts from CBAI by approx. €0.2m. It is difficult to predict the future performance of CBAI, however, due to the significance of the share's decline and lack of recovery prospects, an impairment in Q2 2007 was necessary. We also project that the extraordinary income of €1.2m from the sale of CBAI will counter balance this result.

As such, we forecast a loss before taxes of €3.2m. We have assumed that Vita 34 will be able to book a positive tax benefit from posted loss in accordance to law recently adopted for companies listed on the stock market. As a result, we have projected a net loss of €1.6m. This is based on a nominal 30% tax rate and excludes extraordinary impairment from Corecell stock and c. €0.7m net loss of Vita 34 International which are not tax deductible.

### **And likely to continue into 2008 and 2009**

*We anticipate impressive sales growth of 52% in 2009*

We expect sales growth to remain strong in 2008, increasing 27.3% to €19.0m and by an impressive 52.0% to €28.9m in 2009. Our model assumes that market share in Germany will increase from roughly 1.2% in 2006 to 2.6% in 2009. This will mainly be the result of a progressively expanded sales force, which, considering a training process of some six to 12 months, we estimate will be fully productive some 12-18 months later and thus having the strongest impact on 2009's sales. We project that the company will slightly increase operating loss to €2.4m and net loss will come in slightly higher at €1.7m in 2008, before returning to profitability with an operating profit of €0.9m and net profit of €0.6m in FY09 – a clear commitment by management. For our net-profit projections, we have assumed a 30% tax rate from 2008 onwards.

For the years following 2009, we anticipate continuing double-digit sales growth and profitability to increase strongly to hit the 20% range towards 2012. Stem-cell storage is one of the most under-penetrated healthcare markets, allowing substantial upside, driven by increased findings in the therapeutic field. We believe Vita 34, as Germany's market leader, has a clear advantage, which, added to the characteristics of the business and competitive environment, will keep the company's operating margin above 20% for a few years beyond 2012. The company's expansion into new European countries will boost sales growth.

Our 2008 through 2012 projections, which are roughly in line with the company's, were the basis for our projections thereafter. We have modelled revenue and net-earning projections until 2020 according to the typical life cycles of technologies and markets as well as taking patterns in the healthcare industry into consideration. Long term, we project sales growth and profitability to decrease as new therapies and technologies enter the scene.

# Valuation approach

## I. Two-stage DCF valuation

Our DCF model produces a fair value of €22.00 per share

We have assessed Vita 34's fair value based on a two-stage discounted-cash-flow model. We have projected sales, operating profit and free cash flows until 2020, taking into consideration typical life-cycle patterns in the healthcare industry. Accounting for company-specific risk factors, we have derived a cost of equity (COE) of 12.6%. Taking into consideration a debt ratio of 7.3%, we estimated a WACC of 12.0%, which we used to discount the projected cash flows. Including our 2007 estimated net cash of €9.4m, we value Vita 34 at €58.2m, which implies a fair value per share of €22.00.

Using our ten-factor risk analysis, we have determined a Medium risk rating for Vita 34. The main risk factors we have identified are marketing risk, competition risk, financial risk, and a lack of progress in scientific research.

TABLE 4: DCF model

All figures in €m	2006	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E
Net sales	11.6	14.9	19.0	28.9	39.9	49.4	57.7	66.4	76.3
Operating profit	0.5	-2.2	-2.4	0.9	5.8	9.2	12.5	15.7	19.1
Adjusted NOPLAT	0.6	0.2	-1.9	-1.7	0.6	4.0	6.5	8.8	11.0
plus depreciation & amortisation (excl. GW)	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Net operating cash flow	0.5	-1.5	-1.3	1.0	4.4	6.9	9.2	11.5	13.9
less CAPEX	-0.7	-1.0	-0.6	-0.8	-0.9	-0.9	-1.9	-2.4	-2.7
less working capital investments	0.3	-0.8	-0.6	-0.9	-1.0	-0.9	-0.9	-1.0	-1.1
Free cash flow	0.1	-3.4	-2.5	-0.7	2.6	5.0	6.4	8.1	10.0
<b>PV of FCF's</b>	<b>0.1</b>	<b>-3.2</b>	<b>-2.1</b>	<b>-0.5</b>	<b>1.8</b>	<b>3.1</b>	<b>3.5</b>	<b>3.9</b>	<b>4.3</b>

DCF model		Sensitivity analysis							
		Terminal EBIT margin							
		6.0%	7.0%	8.0%	9.0%	10.0%	11.0%	12.0%	
WACC (%)	12.0%								
Residual period sales growth	2.0%								
Terminal EBIT margin	9.0%								
Tax rate	30.0%								
Incremental investment rate	27.0%								
Present value CFs explicit period	30.2								
Present value CFs terminal period	18.7								
<b>Total EV</b>	<b>48.8</b>								
- Net debt / + net cash (FY 2007E)	9.4								
Minorities (market value)	0.0								
<b>Shareholder value</b>	<b>58.2</b>								
<b>No. of shares (m)</b>	<b>2.647</b>								
Fair value (€)	22.00								
									* Fair value per share €

Source: Company, First Berlin Equity Research



## II. Peer group comparison

We have selected a peer group consisting of 10 healthcare companies

We have used a peer-group analysis as a cross check to our DCF valuation. As is often the case with small-cap healthcare companies, there are almost no listed firms truly comparable to Vita 34 in relation to strategy, technology, business model and risk profile. However, we have identified a broad peer group consisting of 10 companies, mostly from the US, and active in UCB banking, life-science tools and medical-technology fields. These peers match some of the characteristics that best describe Vita 34, including strategy, business model and risk profile. Almost all peers have taken a relevant position within a strong-growing segment of the healthcare market. Our findings are summarised in the following table:

TABLE 5: Peer group

	Company all figures in €m	Share price	Number of shares	Market cap.	Net cash/debt	EV	EV/Sales			Sales			Long-term growth (%)
							2006	2007E	2008E	2006	2007E	2008E	
Cord blood banks	ViaCell (US)	5.4	41.4	221.9	29.3	192.6	4.8	3.9	3.0	40.3	49.6	63.7	25%
	Cord Blood America (US)	0.0	159.1	4.8	-4.9	9.7	3.9	1.8	1.3	2.5	5.3	7.4	68%
	Cryocell international (US)	1.1	11.7	13.0	3.5	9.5	0.7	0.7	0.6	12.7	13.3	15.6	13%
	Mean cord blood						3.2	2.1	1.6	0.0	0.0	0.0	35%
Life sciences	Affymetrix (US)	20.1	68.9	1,384.6	83.0	1,301.7	4.9	4.7	4.2	263.3	275.6	307.4	4%
	Invitrogen (US)	62.6	46.3	2,899.9	-433.7	3,333.6	3.6	3.6	3.4	935.9	931.1	981.5	3%
	Qiagen (US)	15.5	189.2	2,928.2	-17.5	2,945.7	8.5	6.6	4.7	345.0	444.4	624.4	28%
	Mean life sciences						5.7	5.0	4.1	0.0	0.0	0.0	12%
Medical technology	Pulsion (GER)	6.0	9.6	57.4	2.0	55.5	2.3	1.9	1.5	24.5	29.2	35.9	21%
	Biolase (US)	4.2	23.9	99.3	8.9	90.4	1.8	1.6	1.3	51.6	55.3	69.1	15%
	Conceptus (US)	14.4	29.5	425.9	70.8	355.0	11.4	7.1	4.7	31.0	50.0	75.4	69%
	Stratec (GER)	22.8	11.3	257.2	7.6	249.6	3.6	3.1	2.5	68.4	80.4	98.9	28%
	Mean medical technology						4.8	3.4	2.5				34%
	Mean peers						4.6	3.5	2.7				
	Median peers						3.8	3.3	2.8				
	<b>Vita 34 fair value (DCF-model)</b>			<b>58.2</b>	<b>9.4</b>	<b>48.8</b>	<b>4.2</b>	<b>3.3</b>	<b>2.6</b>	<b>11.6</b>	<b>14.9</b>	<b>19.0</b>	<b>23%</b>

Source: Bloomberg, Thomson Financial, First Berlin

DCF-derived fair value gives a 2008 EV/sales multiple of 2.6x; lower than the peer group range of 2.7x-2.8x

The difficulty here, however, is that Vita 34, similar to some of its peers, will be investing strongly and therefore be unprofitable on an earnings and EBITDA basis for the next couple of years. Therefore, a comparison makes no sense unless EV/sales multiples are used. In addition, positive effects from investments will start to significantly boost revenues in late 2008. We therefore believe 2008 data is the most relevant. Based on 2008 figures, the average EV/sales ratio for the peer group (based on mean and median) is 2.7x and 2.8x respectively. Our fair value, calculated at 2.6x using our DCF valuation, is conservative and below this range.

Price of 3.0x 2008 sales paid by Perkin Elmer for peer Viacell shows attractive value of UCB companies

We note that Vita 34 has a leading market position (66% market share in Germany) which cannot be matched by other cord-blood banks such as Cord Blood America or Cryocell International. These two companies also have a weak financial and strategic position to tap the large US home market, which is reflected by very low valuations. This explains our estimated premium valuation of Vita 34 compared with these two peers. Furthermore we refer to the recent acquisition of comparable peer Viacell by the life science instruments company Perkin Elmer paying a price equivalent to roughly 3.0x 2008E sales, which is above our 2.6x valuation for Vita 34 and therefore suggests upside to our valuation of some €2.00 per share.

In addition, we believe the life science tools group is an interesting comparable, since these companies usually have a leading position in a certain market. For example, Qiagen is one of the leading providers of solutions for the separation and purification of proteins, with an estimated market share of 60% in this core market. However, due to Vita 34's smaller size and scope of its sales volume, we see a discount to this subset as warranted.

We believe the medical-technology sector roughly reflects the risk/reward profile of Vita 34. Therefore, we think a multiple in line or slightly higher to the mean of this subset is fair.

Overall we see upside to our valuation, since our peer-group analysis does not take into account data from 2009, when the company's new sales team will be fully productive – generating a significantly stronger sales increase of 52% and bringing the EV/sales multiple down substantially.

## Potential triggers

*Several triggers within next 12-24 months will drive the share price*

As a small healthcare company, Vita 34's share price will be driven by news flow on the status of certain strategic, operative and financial targets. Looking ahead, we expect the remainder of 2007 and 2008 will be exciting years for the company. Vita 34 is undergoing an expansion process by aggressively building up its German sales organisation, penetrating new regions and increasing marketing activity. We therefore believe that announcements on the number of stored stem cells will be relevant share-price drivers. During the next 12 months, news flow on new cooperation with clinics and insurance companies in the German-speaking area will also boost the share price.

The company is also expanding in Europe and other countries through strategic co-operations with local players. We expect new deals with local partners will give Vita 34 a wider reach into the larger European markets.

Although the company's finances are good, we believe financial reporting will play an important role for investors. We forecast sales growth to accelerate substantially during the coming quarters. Strong quarterly sales development will be a key driver for the company and its stock. This also applies to the Vita 34's target of profitability in 2009.

Finally, we expect news flow on the progress of new cell therapies to provide an additional boost to the share, making the value of storing stem cells more evident.

## Risks and concerns

Vita 34 is subject to many business risks typical to the healthcare and specifically to the blood-bank industries. These include, but are not limited to:

### **Marketing risk**

The company has initiated an aggressive expansion of its marketing measures including its field force. While we observe that in other countries such as the US, these types of measures usually drive a sales acceleration, it cannot be guaranteed that Vita 34's new marketing measures will produce the anticipated results in Germany. Moreover, any delay in the field force's hiring and training process would negatively affect the company's sales and profit targets.

For marketing in other European countries, Vita 34 is dependent on partners for the commercialisation of its products. As UCB banking is a relatively new industry, visibility on the professionalism and focus of the company's partners is difficult to predict. While the partners chosen so far such as Secuvita in Spain have, in our opinion, strong expertise in this field and have also given signs of a commitment to marketing cord-blood storage, the partners' efforts and priorities may change in the future and lead to a deterioration of sales.

### **Competition risk**

In general, barriers to market entry are relatively low, which could lead to an intensified competitive landscape. However, German law demands a production accreditation. This requires clinics to have a cooperation contract including an in-depth training with each stem-cell bank they are collecting for; creating in our view, substantial barriers to entry. We believe clinics will prefer to work with a limited number of blood banks. Nevertheless, we cannot rule out the possibility for potential new competitors to offer new incentives to clinics for adding new UCB banks.

### **Financial risk**

The company is looking forward to returning to profitability during 2009, which will imply a self-sustainable business model. However, we cannot entirely rule out the chance that expectant parents will be harder to convince about cord-blood benefits than hitherto experienced, leading to lower revenues, higher-than-expected costs and the delay of the 2009 profitability target. In such a case, the company may need to invest additional funds in the business to finance its marketing-organisation growth. Disappointing news flow on scientific progress with regard to the therapeutic uses of cord blood could have a negative impact on sales, requiring higher marketing efforts and making it difficult to achieve financial targets.

### **Scientific risk**

Scientific advances in the current and future therapeutic uses of UCB determine the value of UCB storage. Progress in this field has been tremendous so far, producing encouraging data from academia and companies' research. However, any negative outcome or setback from ongoing research to expand therapeutic applications to new diseases will have a negative impact on the UCB-storage sector and Vita 34.

## Appendix I: Management

Dr med. Eberhard Lampeter established Vita 34 in 1997 and has been CEO ever since. Dr Lampeter received a doctorate from the University of Leipzig in 1984. He worked as an intern at the University of Leipzig until 1989 and gained the Virchow prize in 1988. Before setting up Vita 34, Dr Lampeter worked for the Diabetes research group at the München-Schwabing hospital and as director of the centre for the early detection of diabetes at the University of Düsseldorf.

Peter Boehnert has served as CFO since 2001. From 1987 to 2001, Mr Boehnert held leading positions at Gillette, Schindler Deutschland Holding GmbH and Morgan Matroc Ltd.

Oliver Papavlassopoulos has been Chief Marketing Officer since January 2006. Before joining Vita 34, he held leading marketing positions at Procter & Gamble, Lindt & Sprüngli and Center Parks.

The Supervisory Board at Vita 34 is headed by Richard J. Neeson, who is chairman. He is accompanied by Hubertus Leonhardt, Joseph Jacovini, Steven Udvarhelyi, Prof Dr med. Christoph Hohbach and Dr med. Uwe Marx.

## Appendix II: Stem cells and cord blood banking

### 1) Classification of stem cells

Stem cells represent the beginning of life. All cells and tissues of the human body originate from these cells, which are capable of continuously propagating and differentiating into various kinds of cells or tissues. They can be classified into broad categories based on their ability of differentiation:

1) Totipotent stem cells are only found in early embryos (1-3 days) and are capable of forming a complete organism.

2) Pluripotent stem cells exist in the undifferentiated inner-cell mass of the blastocyst (5-14 days) and can form any of the more than 200 different cell types found throughout the body. Pluripotent stem cells derive from frozen embryos and are bred in a laboratory. The embryos will normally not survive when stem cells are taken out, which has ethical implications. Pluripotent stem cells can potentially carry an increased risk of cancer due to their very early stage of differentiation. The extraction of and research with these embryonic stem cells is forbidden in Germany.

3) Multipotent stem cells derive from foetal tissue, umbilical cord blood, placenta blood and adult stem cells. These can only differentiate into a limited number of cell types, limiting their ability to differentiate more than pluripotent stem cells. Multipotent stem cells are already differentiated to some degree but can still form a number of tissues, which has proved to be successful in cell-based therapies. Therefore one cell type develops into blood cells, another into muscle, bone or connective tissue. Bone-marrow or peripheral-blood stem cells contain adult stem cells which give rise only to white and red blood cells.

4) Unipotent stem cells can only form one class of tissue.

### 2) Private vs. public cord blood banking

In private cord-blood banks, expectant parents pay the bank to preserve the cord blood for personal use, either for their donating child or a relative. Alternatively, public banks (as well as some private banks) have opted to accept donations. Not everyone is eligible to donate and not all donations will be stored. Donators lose all ownership of their child's stem cells. The bank stores cord-blood donations and can sell them to any patient requiring the stem cells. Prices usually paid by through patient's insurance amount to some €20,000, which is where these banks generate their income.

The worldwide private-banking industry of cord blood is a rapidly growing industry. In the last four years the market has grown more than 80%. In 2003, there were some 75,000 parents who privately banked UCB stem cells. In 2007, more than 150,000 parents are estimated to have privately banked UCB stem cells. We expect this growth to continue at a rapid pace. Industry sources estimate the market to be higher than \$1bn by 2010.

## Appendix III: Financial information

TABLE 6: Vita 34 – profit and loss statement (IFRS)

€m	2004*	2005	2006	2007E	2008E	2009E
<b>Revenues</b>	<b>9.0</b>	<b>10.2</b>	<b>11.6</b>	<b>14.9</b>	<b>19.0</b>	<b>28.9</b>
y-o-y		13.1%	12.9%	29.2%	27.3%	52.0%
<b>Cost of goods sold</b>	<b>-3.3</b>	<b>-3.4</b>	<b>-3.7</b>	<b>-4.4</b>	<b>-5.6</b>	<b>-8.5</b>
<b>Gross profit</b>	<b>5.8</b>	<b>6.8</b>	<b>7.9</b>	<b>10.5</b>	<b>13.4</b>	<b>20.4</b>
Gross margin (% of total output)	63.5%	66.7%	68.3%	70.2%	70.4%	70.5%
Marketing and selling expenses	-4.2	-4.3	-5.4	-9.3	-12.2	-15.7
General & administrative expenses	-2.2	-1.6	-2.1	-3.5	-3.6	-3.8
Other operating income	1.3	0.4	0.4	0.3	0.2	0.2
Other operating expenses	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2
<b>EBIT</b>	<b>0.5</b>	<b>1.2</b>	<b>0.5</b>	<b>-2.2</b>	<b>-2.4</b>	<b>0.9</b>
EBIT margin (% of total output)	5.9%	11.7%	4.3%	-14.7%	-12.6%	3.1%
Net financial result	-0.3	-0.2	0.0	0.0	0.0	0.0
Extraordinary income/expense	0.0	0.0	0.0	-1.0	0.0	0.0
<b>EBT</b>	<b>0.3</b>	<b>1.0</b>	<b>0.5</b>	<b>-3.2</b>	<b>-2.4</b>	<b>0.9</b>
EBT margin (% of total output)	3.0%	10.1%	4.1%	-21.5%	-12.7%	3.0%
Income taxes	0.4	-0.5	-0.3	0.5	0.7	-0.3
Minority interests	0.0	0.0	0.0	0.0	0.0	0.0
<b>Income from continuing operations</b>	<b>0.7</b>	<b>0.5</b>	<b>0.2</b>	<b>-2.8</b>	<b>-1.7</b>	<b>0.6</b>
Loss / gain from disposed units	-1.2	-2.4	-3.0	1.2	0.0	0.0
<b>Net profit</b>	<b>-0.5</b>	<b>-1.9</b>	<b>-2.9</b>	<b>-1.6</b>	<b>-1.7</b>	<b>0.6</b>
Net income margin (% of total output)	-5.1%	-18.7%	-24.8%	-10.8%	-8.9%	2.1%
EPS	-0.26	-1.07	-1.40	-0.61	-0.64	0.23
<b>EBITDA</b>	<b>0.5</b>	<b>1.5</b>	<b>0.8</b>	<b>-1.9</b>	<b>-2.0</b>	<b>1.3</b>
<b>EBITDA margin (% of total output)</b>	<b>5.9%</b>	<b>14.2%</b>	<b>6.9%</b>	<b>-12.4%</b>	<b>-10.7%</b>	<b>4.4%</b>

Source: Vita 34, First Berlin Equity Research; \* Pro forma figures (unaudited)

TABLE 7: Vita 34 – balance sheet (IFRS)

€m	2004*	2005	2006	2007E	2008E	2009E
<b>Assets</b>						
Cash and cash equivalents	4.7	6.6	3.0	8.9	5.3	4.2
Marketable securities	0.0	0.0	2.3	2.4	2.5	2.5
Total cash and securities	4.7	6.6	5.3	11.3	7.7	6.7
Accounts receivable	0.6	0.8	1.0	1.3	1.6	2.4
Inventories	0.5	0.5	0.6	0.8	1.3	1.7
Prepaid assets and other assets	1.0	0.8	1.0	0.9	0.9	1.0
<b>Current assets</b>	<b>6.7</b>	<b>8.7</b>	<b>7.9</b>	<b>14.3</b>	<b>11.6</b>	<b>11.8</b>
Property, plant and equipment	1.8	1.9	2.2	2.4	2.6	2.7
Goodwill	14.9	14.9	11.9	12.0	12.4	12.6
Non-goodwill intangibles	0.3	0.4	0.5	1.2	1.2	1.6
Financial assets	0.0	0.0	0.0	0.1	0.1	0.1
Deferred tax claims and others	1.5	1.0	3.3	1.0	1.1	1.1
<b>Fixed assets</b>	<b>18.6</b>	<b>18.4</b>	<b>18.0</b>	<b>16.7</b>	<b>17.3</b>	<b>18.2</b>
<b>Total assets</b>	<b>25.3</b>	<b>27.1</b>	<b>25.8</b>	<b>30.9</b>	<b>28.9</b>	<b>30.0</b>
<b>Equity and liabilities</b>						
Short-term debt	0.2	0.1	0.2	0.2	0.2	0.2
Trade payables	1.1	1.3	0.8	0.9	1.2	1.5
Tax liabilities	0.0	0.0	0.1	0.1	0.1	0.1
Provisions	0.4	0.4	0.8	0.5	0.6	0.6
Other current liabilities	1.7	0.9	1.6	1.3	1.3	1.4
<b>Current liabilities</b>	<b>3.4</b>	<b>2.6</b>	<b>3.5</b>	<b>3.1</b>	<b>3.5</b>	<b>3.8</b>
Non-current debt	1.9	1.9	1.8	1.8	1.8	1.8
Provisions	0.6	0.0	0.4	0.4	0.4	0.4
Other liabilities	1.4	1.9	1.9	1.9	1.8	1.8
Deferred income	4.1	5.0	4.7	4.9	5.0	5.1
<b>Non-current liabilities</b>	<b>8.0</b>	<b>8.8</b>	<b>8.8</b>	<b>9.0</b>	<b>9.0</b>	<b>9.1</b>
<b>Total liabilities</b>	<b>11.4</b>	<b>11.4</b>	<b>12.3</b>	<b>12.1</b>	<b>12.5</b>	<b>13.0</b>
<b>Credits from disposed units</b>	<b>0.0</b>	<b>0.0</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Subscribed capital	1.7	2.0	2.0	2.6	2.6	2.6
Capital reserve	12.2	15.6	15.6	23.2	23.2	23.2
Other reserves	-0.1	-0.1	0.1	0.1	0.1	0.1
Loss carry forward / retained	0.0	-2.0	-4.8	-7.1	-9.5	-8.9
<b>Shareholders' equity</b>	<b>13.9</b>	<b>15.6</b>	<b>12.9</b>	<b>18.8</b>	<b>16.4</b>	<b>17.0</b>
<b>Total liabilities and equity</b>	<b>25.3</b>	<b>27.1</b>	<b>25.8</b>	<b>30.9</b>	<b>28.9</b>	<b>30.0</b>
Net debt incl. pension liabilities	-2.6	-4.7	-3.4	-9.4	-5.8	-4.8
Equity ratio cum goodwill	54.9%	57.8%	50.1%	60.9%	56.8%	56.7%
Gearing	-19%	-30%	-26%	-50%	-35%	-28%

Source: Vita 34, First Berlin Equity Research; \* Pro forma figures (unaudited)



TABLE 8: Vita 34 – cash flow statement

€m	2004*	2005	2006	2007E	2008E	2009E
+ Income before taxes (adj. on discontinued operations)	0.3	1.0	0.5	-3.2	-2.4	0.9
+ Depreciation and amortisation	0.3	0.3	0.3	0.3	0.4	0.4
Operating cash flow	<b>0.6</b>	<b>1.3</b>	<b>0.8</b>	<b>-2.9</b>	<b>-2.1</b>	<b>1.2</b>
- Change in net working assets	-0.8	-0.7	0.3	-0.8	-0.6	-0.9
+ Others	1.3	0.5	-0.1	1.2	-0.1	-0.1
Net operating cash flow	<b>1.1</b>	<b>1.1</b>	<b>1.0</b>	<b>-2.5</b>	<b>-2.7</b>	<b>0.3</b>
- Capital expenditure	-0.5	-0.3	-0.7	-1.0	-0.6	-0.8
Free cash flow	<b>0.5</b>	<b>0.7</b>	<b>0.4</b>	<b>-3.5</b>	<b>-3.3</b>	<b>-0.5</b>
- Dividend paid	0.0	0.0	0.0	0.0	0.0	0.0
Cash flow from financing	<b>0.5</b>	<b>1.2</b>	<b>-1.7</b>	<b>9.5</b>	<b>-0.3</b>	<b>-3.0</b>
Change in net liquidity	<b>1.0</b>	<b>1.9</b>	<b>-1.3</b>	<b>6.0</b>	<b>-3.6</b>	<b>-3.5</b>
Net operating cash flow margin	11.9%	10.4%	9.0%	-17.0%	-14.1%	1.1%
Free cash flow margin	5.9%	7.1%	3.1%	-23.6%	-17.2%	-1.8%

Source: Vita 34, First Berlin Equity Research; \* Pro forma figures (unaudited)

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