

Dental Implant Competition Increasing & Stem Cells Coming



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Feedback From World's Largest Dental Meeting

In this note we provide brief update from the **32nd International Dental Show** that was held in Cologne, Germany. While this meeting covers a broad array of dental technologies, we have focused on dental implants, aesthetic trends involving CAD/CAM technology and stem cell therapy. We have also done a case study on the profitability of a fast **growing Korean discount implant company, Osstem**.

Dental Implants - Competition Will Get Tougher

Based on our IDS survey, it appears that the number of dental implant companies has increased significantly. In 2005 we counted 92, an increase of 30% from the 70 companies in 2003. By 2007 the number of dental implant companies increased by 47% to 135 and represents an acceleration over the previous 2 years. Effectively the **number of dental implant has doubled over a four year period**. Given the strong industry growth rates and excellent margins, we believe competition will increase further, requiring well established companies like Nobel Biocare/Straumann to be **increasingly innovative to secure their profitability**.

CAD / CAM Technology - An Essential Offering

Based on our field checks it appears that CAD/CAM technology is gaining increasing momentum with the number of companies offering solutions increasing sharply over the past 4 years from 22 to 56 in 2007. We continue to believe that dental implant companies who are able to integrate **CAD/CAM technology into their existing dental implant offering, will have a competitive advantage over other organizations that can only offer dental implants**. We continue to believe that Nobel Biocare is in the leading position, with Straumann recently recognizing the importance of a complete solution through the etkon acquisition.

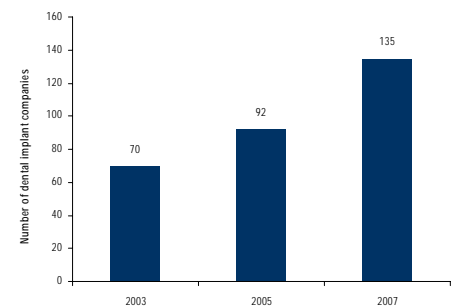
Stem Cell Therapy - Interest Building

For the first time we sensed an **increasing interest amongst clinicians and dental companies in the area of stem cell therapy** for replace missing teeth. In our view dental implant companies that are willing to start to make an investment in stem cell therapy for the purpose of growing teeth would effectively be buying an insurance policy against a technology trend that could make dental implants obsolete in as early as five years. The **opportunity seems real** with researchers from the Institute of Biotechnology at the University of Helsinki showing that tooth generation can be achieved in mammals.

Investment Conclusion - MBO For Straumann?

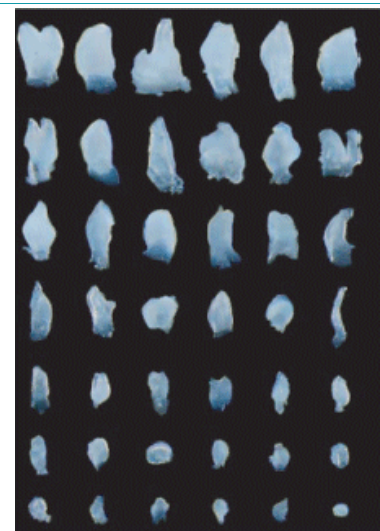
We remain positive on the dental implant market and continue to believe it remains one of the most exciting areas of MedTech. In this context we retain our **Buy** recommendation on **Nobel Biocare**. We remain **Neutral** on **Straumann (SAUHF; B-2-7; CHF344.50)** on the basis that the company needs time to restructure its operations over the next 2 years and wonder whether the company would not be better off doing an MBO.

Chart 1: No. of Dental Implant Companies



Source: IDS, Merrill Lynch

Chart 2: Teeth from Stem Cells



Source: Institute of Biotechnology

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Case Study of Emerging Competition - Osstem from Korea

Historically the financial community has only had access to the economics of premium dental implant companies such as Nobel Biocare and Straumann, but little was known about the economics of second tier companies that often place more emphasis on lower priced products. With the recent IPO of Osstem, which prices its implants 20-30% below Nobel Biocare/Straumann, we now have access to the company's Profit & Loss for the period FY03 to 1H FY06A:

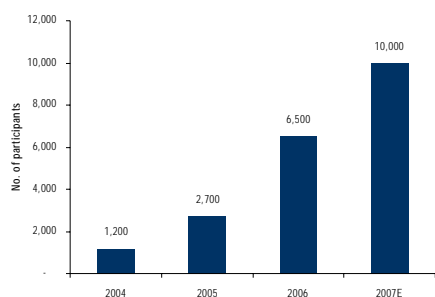
Table 1: Osstem - Profit & Loss

US\$m	FY03A	FY04A	FY05A	1H FY06A
Sales	15.4	30.4	70.4	49.8
COGS	-5.8	-12.1	-27.2	-21.1
Gross Profit	9.5	18.3	43.2	28.6
Selling & Administrative	-7.9	-14.5	-26.3	-19.3
EBIT	1.6	3.8	17.0	9.4
Interest Income	0.1	0.1	0.2	0.2
Interest Expense	-0.7	-0.7	-1.0	-0.6
Other Income	0.2	0.3	0.4	0.5
Other Expenses	-0.7	-1.3	-5.9	-4.9
EBT	0.5	2.2	10.7	4.5
Income Taxes	0.0	-0.4	-1.2	-0.8
Net Income	0.5	1.8	9.4	3.7
Minority Interest	0.0	0.0	0.0	0.0
Net Income	0.5	1.8	9.4	3.7
Growth		258.4%	428.5%	NA

Margins	FY03A	FY04A	FY05A	1H FY06A
Sales Growth	NM	97.9%	131.8%	45-50%*
Gross Margin	61.9%	60.3%	61.4%	57.5%
EBIT Margin	10.4%	12.4%	24.1%	18.9%
S&A / Sales	51.5%	47.9%	37.3%	38.7%
Tax	-2.4%	17.4%	11.6%	18.6%

Source: OSSTEM, Merrill Lynch. *Annualized for FY06.

Chart 6: Osstem Meeting - Participants



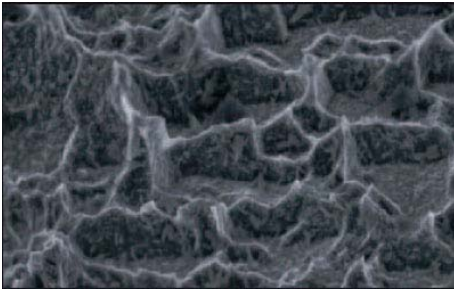
Source: Osstem

Based on the annualized **sales** numbers for 1H FY06A, it appears that with ~US\$100m Osstem has become the 6th largest dental implant company (or ~5% market share) and taking share with sales growth at an estimated 40-50%. We suspect that its volume market share is significantly higher with an estimated 4,000,000 units per year. **Gross margins** appear to be hovering around ~60% compared to the premium manufacturers of ~80%, which largely reflect the lower selling prices. **EBIT margins** of Osstem appear to be in the region of 20-25% compared to Nobel Biocare and Straumann at 30-35% and partly reflects high expansion costs into Europe and the United States.

We believe part of the success of Osstem to date, is its strategy of not simply offering products at lower prices but also spending considerable amount of effort in education and training. This can be seen by the success of the "Osstem Annual Meeting" which over the past three years has increased the participation from 1,200 to 6,500 (200 where from overseas) in 2006 and the company expects to get around 10,000 in 2007 of which the majority are likely to be from Asia. This is an incredible achievement when compared the industry leader Nobel Biocare, who attracted around 6,000 participants to its World Congress in Las Vegas in 2005.

The momentum of Osstem is further highlighted by the decision to build a new production plant in Busan in December 2005 with a total floor area of 6,600m². The company is also in the process of constructing its first U.S. manufacturing facility, with full fledged production expected to commence in 2007.

Chart 9: Biomet's NanoTite Surface



Source: Biomet 3i

Biomet 3i - Not Rated

Biomet launched *NanoTite*, its next generation surface that contains discrete crystalline deposition of calcium phosphate, which the company claims gives a more complex topography and may play a key role in enhanced site response, potentially improving clinical predictability and outcomes. The price premium is around 20% taking the new implant to EUR275. Based on the *NanoTite* research documents at the booth, it appears that most of the research was performed in rats. While a number of human studies are underway, the only data that has been presented to date was from a study in 15 patients at 2 months while a second study consisting of 145 patients showed 74 patients at 3 months. The first human study showed an impressive 70% increase in the bone to implant contact for *NanoTite* compared to the company's older Osseotite technology.

Zimmer Dental - Not Rated

Zimmer Dental launched its new one piece dental implant for EUR340-390. Interestingly, unlike Nobel Biocare the company considers this type of implant to be far more complex and as a result has asked its sales force only to sell the device if the clinician agrees to attend a Zimmer training course.

Chart 10: Zimmer One-Piece Implant



Source: Zimmer Dental

Osstem - Not Rated

Our discussion with Osstem, who currently has 12 subsidiaries worldwide, has the intention of becoming the world third largest dental implant company by 2012. Its plans are to expand its global network to more than 50 countries by 2010 and to provide high quality implants. We think this will be a very challenging task as the current top three players such as Nobel Biocare, Straumann and Biomet 3i are not asleep at the wheel. However, should Osstem keep up its current growth rates, its mid-term strategic goal is very realistic.

Our field checks highlight that clinicians who have used Osstem like the products as a result of a healthy combination of product quality, ease of use and price. Furthermore, it appears that the company offers customers a good level of service and it is not too aggressive in training new customers; it recommends that clinicians new to dental implants should have a minimum of 4 months training compared to other companies that suggest that 3 days can be enough.

Neoss - Not Rated

Neoss, in which Medtronic holds an equity investment, has expanded their management team by attracting a number of people from Nobel Biocare. The company appears to be pleased with their entry into the US market and currently have 15 sales people operating in this region – we expect Neoss to double the sales force to 30 by the end of 2007. The company continues to be tight lipped on when Medtronic will acquire the company in full.

Conclusion

Based on our IDS observations we cited no material new product launches and expect the next important event to be Nobel Biocare's World Congress in Las Vegas to be held on 20-24 May 2007. It will be interesting to see how much human clinical data the world leader can offer with respect to their new product launches.

Table 3: 'Other Companies' – Estimated Growth Rates

Company	Estimated Sales (CY06E)	Constant Currency Growth
Astra Tech	140	Over 40%
BioHorizons	40	Over 30%
BioLok	10	Over 30%
Camlog	70	Over 30%
Danaher	30	Over 20%
MIS	40	Over 30%
NEOSS	20	Over 50%
Ossstem	120	Over 40%
Total	470	Over 30%

Source: Merrill Lynch estimates

Market Model - Size Larger Than We Thought

Provided below is our revised worldwide dental implant market model, which includes additional detail on the 'Other Category'. Our revised model suggests that the dental implant market may be ~20% bigger at US\$2.2bn compared to our previous forecast of US\$1.8bn, driven by greater clarity on the size of the smaller dental implant manufacturers, which over the years have amassed a sizeable portion or 24% of the market.

Table 4: Worldwide Dental Implant Market

Dec Y/E (US\$m)	CY01E	CY02E	CY03E	CY04E	CY05E	CY06E	CY07E	CY08E
Nobel Biocare	226	256	329	420	517	641	767	891
Growth (%)	12%	13%	28%	28%	23%	24%	20%	16%
LC Growth (%)	17%	12%	19%	22%	25%	24%	20%	16%
Straumann	137	165	249	320	386	447	519	598
Growth (%)	22%	20%	51%	29%	20%	16%	16%	15%
LC Growth (%)	24%	23%	24%	21%	15%	15%	16%	15%
Biomet (3i)	136	158	194	238	270	310	357	410
Growth (%)	15%	16%	23%	23%	13%	15%	15%	15%
LC Growth (%)	15%	16%	18%	19%	12%	15%	15%	15%
Zimmer (Centerpulse)	71	78	98	116	138	158	182	207
Growth (%)	111%	10%	25%	18%	19%	15%	15%	14%
LC Growth (%)	5%	18%	16%	22%	18%	15%	15%	14%
Dentsply (Friadent)	49	56	64	75	87	100	114	130
Growth (%)	18%	15%	15%	18%	15%	15%	14%	14%
LC Growth (%)	18%	15%	15%	18%	15%	15%	14%	14%
Lifecore Biomedical	22	24	29	34	39	46	53	61
Growth (%)		12%	19%	18%	14%	17%	15%	15%
LC Growth (%)	9%	12%	17%	15%	14%	14%	15%	15%
Other	143	186	241	314	408	530	689	896
Growth (%)	30%	30%	30%	30%	30%	30%	30%	30%
LC Growth (%)	30%	30%	30%	30%	30%	30%	30%	30%
Total	784	923	1204	1518	1844	2232	2680	3193
Growth (%)	27%	18%	31%	26%	22%	21%	20%	19%
LC Growth (%)	18%	17%	20%	21%	19%	19%	18%	16%

Source: Merrill Lynch estimates. LC = local currency.

For **CY06E** we have lifted our local currency growth from 18% to 19% driven solely by a faster growing 'Other' segment. For **CY07E** our growth rate has been increased from 17% to 18% for the same reasons as above.

Other Tid Bits

Innova, which is part of Sybron Dental, launched the Anatomic Implant System, which is the very first asymmetric dental using a press-fit design (i.e. tapped in). The press-fit design substantially improves implant placement compared to other claimed high-esthetic implants such as NobelPerfect, which is difficult to place due to its thread design.

Our field checks suggest that we are seeing the emergence of a strong Korean competitor; **OSSTEM** seems to have established many marketing leading positions in Asia such as Korean (50% market share), Indonesia (35%), Taiwan (10%) as well as Saudi Arabia and Pakistan. It has also moved into Europe with a direct sales force in Germany and Russia, while it uses distributors in Spain, Portugal and Italy. It also has a subsidiary in the United States and is growing rapidly, driven by what many industry commentators suggest are good quality products at a reasonable price.

Conclusion

Based on the various product updates by Astra Tech, Biomet (3i), Dentsply (Friadent), Nobel Biocare, Straumann and Zimmer Dental, we feel product innovation within the dental implant industry is currently not at a high level. While we saw the launch of some new implant surfaces last year, including Straumann's SLActive surface, it appears that product differentiation is a little more difficult to come by. Moving forward, we believe the premium companies will attempt to drive product differentiation through the use of orthobiologics to accelerate bone healing as well as image guided surgery to make their product offering more appealing to general dentists.