BTG

Outlook post ASCO data

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Enjoying a strong run

Biotech & pharma

BTG has enjoyed a strong run of positive news in 2012 that has been reflected in a rising share price, up some 30% year to date. This year has seen the filing of Lemtrada (alemtuzumab) in multiple sclerosis and the presentation of Phase III data on Zytiga (abiraterone) at ASCO, while BTG has itself reported highly positive efficacy in Phase III studies with Varisolve. We have revised our forecasts, and indicate a fair value of 430p per share.

Year end	Revenue (£m)	PBT* (£m)	EPS* (p)	DPS (p)	P/E (x)	Yield (%)
03/11	111.4	16.6	13.6	0.0	30.2	N/A
03/12	197.0	57.2	14.9	0.0	27.6	N/A
03/13e	190.0	39.2	9.4	0.0	43.7	N/A
03/14e	223.5	53.5	12.1	0.0	34.0	N/A

Note: *PBT and EPS are normalised, excluding intangible amortisation and exceptional items.

Zytiga sales roaring ahead, ASCO data scrutinised

BTG's 3% net royalty interest on Zytiga has become increasingly valuable, as the drug's sales approach $1bn/year. J&J claims it to be the most successful oncology product launch ever in the EMEA region, and the second most successful in the US after Avastin. A high-profile, but much scrutinised, presentation of Phase III data at ASCO paves the way for a filing and potentially approval in the pre-chemo setting in 2013.

Varisolve filing on track for year end

Positive results in the two VANISH studies pave the way for a filing at the end of this year, once long-term follow up data are available. Launch, assuming approval, is possible in the first half of 2014.

Updated guidance beaten in FY12

Aided by a "windfall" royalty receipt on Benefix, bumper royalties on Zytiga and a solid performance from its direct operations (CroFab/DC Beads), BTG comfortably beat its increased revenue guidance of £190-195m. The company indicates a £180-190m range for current-year sales, but we consider it possible that this could be surpassed, particularly in relation to the contribution from Zytiga.

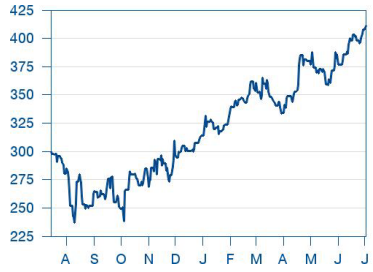
Valuation: Fair value 430p per share

We have revised our model to reflect new guidance and indicate a valuation of £1,407m (430p/share). Although the share price is approaching the fair value, we contend that BTG offers an attractive proposition, whose value is largely supported by the DCF value of its core business activities valued on a conservative basis, with near-term catalysts related to partnered R&D programmes.

	3 July 2012
Price	411p
Market cap	£1,347m

Shares in issue	327.8
Free float	100%
Code	BTG
Primary exchange	LSE
Other exchanges	N/A

Share price performance



%	1m	3m	12m
Abs	9.1	20.4	46.8
Rel (local)	1.9	25.5	56.5

52-week high/low	411.0p	236.8p

Business description

BTG is UK-based biopharmaceutical company with a direct commercial presence in US acute care medicine and interventional oncology. It has a number of internal and partnered R&D programmes.

Next events

CytoFab Ph II data	H212
Varisolve filing	Q412

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Investment summary: Solid underpinnings

Company description: Hybrid specialty pharma

BTG is a UK-based company with a fast-growing US marketing presence in specialty pharmaceuticals and interventional oncology and a significant and growing royalty interests in developmental and marketing products. The company is organised into three business units: specialty pharmaceuticals (acute care pharmaceuticals), interventional medicine (drug-eluting bead and brachytherapy products), and licensing and biotechnology (interests in approved and developmental products, licensed to partners). BTG was formed by the merger of three companies: the pre-2008 BTG, Protherics (acquired December 2008) and Biocompatibles (acquired January 2011). It employs c 550 people in the UK, US, Germany and Australia.

Valuation: Revised fair value of 430p per share

We have substantially revised and updated our valuation, taking 2012 as a base year, projecting a terminal value from 2017 and adjusting for currency effects. This indicates a fair value of £1,407m or 430p a share. Although the share price is approaching this fair value, we note that it is solidly underpinned by the DCF value of BTG's core business (US speciality pharma/interventional oncology activities, royalties on approved products and cash). Hence in investment terms, we still consider BTG to offers an attractive proposition with potential for upside from a number of near-term value-creation catalysts related to partnered R&D programmes. Furthermore, because of the low probability currently attached to CytoFab, significant value can be added by a positive result in the Phase II study due later this year.

Sensitivities: Low risk

BTG derives revenue from direct product sales and royalty interests in marketed products, sold by third parties. Directly marketed products are primarily used in emergencies and are subject to little actual, or potential, competition. Varisolve, if approved, will have to compete with the RF or laser ablation techniques. Principal risks relate to the success of commercialisation of products, both directly and by partners. BTG is exposed to the normal drug development risks (ie the success or failure of clinical trials, including those of competitors), regulatory risks and commercial decisions by partners. Zytiga and, if approved, Lemtrada, are both competing in highly dynamic markets that make long-term forecasts uncertain. Edison's valuation excludes a number of programmes that may provide additional upside.

Financials: Cash of £113m, revenue growth in 2013/14

BTG finished 2011/12 with £113m in cash and equivalents. We have modelled revenues for the current year ending March 2013 of £190m, at the upper end of BTG's £180-190m revenue guidance. We consider it possible that BTG will surpass the guided fiscal 2013 figure, particularly in relation to the contribution from Zytiga. We expect a significant increase in revenues to c £224m in 2013/14 and project c 15% a year sales growth from speciality pharma and interventional oncology businesses over the medium term (three to five years).

Outlook: Geared for success

BTG has enjoyed a strong run of positive news in 2012 that has been reflected in a rising share price, up over 30% year to date. Its shares now trading at a high, last reached in 2004. Positive events this year have included the presentation of Phase III data and filing by its partner Sanofi of Lemtrada (alemtuzumab) in multiple sclerosis and the presentation by Johnson & Johnson of Phase III data on Zytiga (abiraterone) at the American Society of Clinical Oncology (ASCO). In addition, BTG has itself reported highly positive efficacy in its two VANISH Phase III studies with Varisolve, the injectable sclerotherapy for varicose veins.

BTG's financial results, reported in May, beat financial guidance for FY11-12 that had itself been raised late in the year from £160-165m to £190-195m as a result of a windfall royalty gain. The next catalyst is the results of the Phase II study of CytoFab (AZD9773), run by AstraZeneca, which, if positive, have the potential to be a significant value-creating event. Revenue guidance for the FY12-13 has been set at £180-190m. Our valuation now stands at £1,407m or 430p a share.

Three business units

BTG is organised into three divisions (shown in the datasheet overleaf), two of which conduct the marketing/drug development of speciality pharma and interventional medicine products respectively, while the third, licensing & biotech, holds royalty interests in a number of developmental and marketed products. The latter division is currently enjoying prominence with Lemtrada expected and Zytiga on track to become blockbusters and therefore major revenue earners for BTG (which holds c 3% net royalty interests). Both products address large but dynamic markets and could face new competition.

The results of the Phase II study of CytoFab, due in H2, represent a significant catalyst as this is one of BTG's most economically important developmental licensed programmes because of the attractive terms of the licensing deal with AstraZeneca. Furthermore, given the historic high failure rate in sepsis, this project is carried in our valuation at a lower than normal probability for a Phase IIb product. Hence, if is ultimately successful it could trigger a greater value uplift.

Exhibit 1: BTG: key catalysts including competitor products

Date	Event/product	Comment
H212	Potential US approval of Aubagio	Potential competitor to Lemtrada, marketed by Sanofi. Filed in US in Oct 11, in EU MAA accepted Feb 12. Pricing/market differentiation from Lemtrada will be of relevance.
H212	Zytiga pre-chemo mCRPC filing	Approval, possibly very quickly (eg in <6 mths). Anecdotal reports of off-label use in pre-chemo mCRPC setting, ahead of approval.
H212	CytoFab Phase IIb study results	AstraZeneca may not publish detail. If successful, Phase III start may occur in 2013, triggering £10m milestone. High risk indication, but carried at low probability in rNPV, hence significant upside.
Q412	Varisolve filing	BTG will file regulatory submissions once 12-month follow-up data are available. Approval expected in c 12 months, perhaps late 2013, allowing launch in early 2014.
H212	Enzalutamide US approval decision	Potential competitor to Zytiga filed in US in May 12 (EU in June) for post-chemo mCRPC with request for priority review, approval possible by Nov.
Q412/Q113	Lemtrada approval and launch	Filing in Jun 12, may receive fast track hence approval around year end. Assume launch can take place in early 13.
Q113	BG-12 approval.	Potential competitor to Lemtrada. Filed Feb 12, but granted standard review.
2013	Filing of uridine triacetate.	BTG targets filing in 2013. Launch, possible, in 2014 will expand BTG's portfolio of marketed chemotherapy toxicity products.
2013/14	Enzalutamide pre-chemo data	Potential competitor to Zytiga. Study may be render an early result, if positive, may lead to off-label use in this setting, ahead of approval.

Source: Edison Investment Research

BTG datasheet

Exhibit 2: BTG Divisional profile/principal products

Business unit	Product	Indication	Notes
Specialty pharma	CroFab	Antivenom	Approved in US.
	DigiFab	Digoxin antidote	Approved (US, Switzerland, Canada and UK).
	Voraxaze (glucarpidase)	Treatment for MTX toxicity	Approved US/available elsewhere under named-patient/compassionate use protocols. Licensed to Ohara Pharmaceutical (Japan).
	Uridine triacetate	5-FU toxicity	NDA filing expected H113. US and EU named-patient rights licensed from Wellstat.
Interventional medicine	LC/DC beads	Embolization/ TACE	Sold direct in US, via distributors elsewhere: Termuno (EU), Transmedic (SE Asia); Eisai (Japan, filed), Device Technologies (Aus/NZ); SciClone (China, filing in preparation).
	Brachytherapy	Prostate cancer	Radioactive seed implants. Various devices (AnchorSeed, EchoStrand, VariStrand) and radio-isotope (Iodine-125, Palladium-103, Cesium-131) combinations.
	Varisolve	Varicose veins	Phase III programme completed, US filing due at end of 2012.
Licensing & biotech	Zytiga	mCRPC	Approved US/EU. Partner: **Johnson & Johnson.**
	Lemtrada	MS	Filed June 2012. Partner: **Sanofi.**
	CytoFab	Severe sepsis	300-pt Phase IIb study (results: June/July 2012). Partner: **AstraZeneca.**

BTG licensing and biotechnology programmes

Drug/indication	Licensee	Development/notes
Zytiga (abiraterone)	J&J	Approved for mCRPC (post-docetaxel) in US/EU. 1,000-pt Phase III study in pre-chemo mCRPC stopped on grounds of positive efficacy at interim analysis, filing expected H2).
Campath/Lemtrada (alemtuzumab)	Sanofi (Genzyme)	Approved as Campath for B-CLL. Filed for MS, with approval possible in end 2012/early 2013. Positive results in two Phase III studies for MS (CARE-MS I and CARE-MS II). Patent to 2017.
Two-part hip cup	Various	Prosthetic hip that allows an improved range of motion that helps to avoid dislocation. Licensees include Zimmer, Stryker, Smith & Nephew and Biomet. Patent to 2019.
MRC IP	Various	Multiple partners. Patents (on antibody humanisation) to 2015.
CytoFab/AZD9773	AstraZeneca	300-pt Phase IIb study for sepsis (recruitment complete, results due H212).
ONYX 0801	Onyx	60-pt Phase I study in pts with advanced solid tumours (completed). On hold?
Otelixizumab/ GSK2136525	GSK	Phase II for myasthenia gravis (no details); 40-pt Phase I in rheumatoid arthritis (results: Jul 2014). Reported to be in Phase I for Grave's disease and Type I diabetes (sc formulation).
Cellbeads Neuro	N/A	20-pt Phase I/II study (GLP-1 secreting cell therapy) (results: Jul 2012).
Nexvax2	ImmusanT	34-pt Phase I study in coeliac disease completed.

Results of Phase III trials of Varisolve

Study	Design	Results
VV016/ VANISH-2	235-pt Phase III study of PEM (0.125%, 0.5% and 1.0%, n=176) vs vehicle (n=59) in pts with SFJ incompetence due to GSV reflux of major accessory veins and venous disease manifested by symptoms and visible varicosities.	Statistically significant improvement for PEM (0.5% or 1.0%) on VVSymQ at 8 wks ($p<0.0001$); co-secondary endpoints, PA-V3 and IPR-V3 at 8 wks (both $p<0.0001$). Tertiary endpoints: response by duplex ultrasound, change in the Venous Clinical Severity Score and Quality of Life (VEINES-Sym/QOL questionnaire) all $p<0.0001$ (0.5% and 1.0% PEM).
VV015/ VANISH-1	250-pt Phase III study of PEM (2%, 1%, 0.5%, 0.125%, n=284) vs vehicle (n=57) in pts with SFJ incompetence due to GSV reflux of the major accessory veins, with venous disease manifested by both symptoms and visible varicosities.	Statistically significant improvement in VVSymQ at 8 wks ($p<0.0001$) for PEM (0.5%, 1% and 2%); co-secondary endpoints of PA-V3 and by IPR-V3, both $p<0.0001$. Three tertiary endpoints, response to treatment as determined by duplex ultrasound, change in the Venous Clinical Severity Score and Quality of Life (modified VEINES-QOL/Sym questionnaire), all $p<0.0001$ for PEM (0.5%, 1.0% or 2.0%).
VV017	118-pt Phase III study of PEM (1%, 0.5%, n=80) vs pbo in adjunctive treatment for distal GSV incompetence in pts with previous proximal GSV ablation by ETA. (n=34).	Co-primary endpoints of PA-V3 and IPR-V3 at 8 wks. Statistical significance was achieved for IPR-V3 ($p=0.001$) but not for PA-V3. No formal secondary endpoints.

Note: GSV= great saphenous vein; SFJ= sapheno-femoral junction; ETA= endovenous thermal ablation; VVSymQ = patient's self-assessment of varicose vein symptoms; PA-V3 = patient assessment of appearance (based on scoring a variety of symptoms such as swelling and aching using a daily electronic diary for 10 days prior to treatment and for 10 days prior to the primary endpoint at eight weeks post treatment). IPR-V3 = physician assessment of appearance by blinded independent panel review of photographs.
Source: Edison Investment Research

Zytiga on track to be most successful oncology launch

Zytiga is in focus having enjoyed a very rapid take-up in its first year on the market. Annualised sales are now approaching $1bn/year ($200m in Q112, split 50:50 US:ex-US). Based on its first year sales, J&J is claiming Zytiga to be the most successful oncology product launch ever in the EMEA region, and the second most successful in the US (after Avastin, and thus the top *oral* US oncology launch). BTG recorded royalty revenue of £18.6m in the year to end March (based on nine months of US sales, and six months in EU), and it is already its largest royalty contributor (excluding BeneFix).

Zytiga is currently approved in the US and EU for the treatment of metastatic castration-resistant prostate cancer (mCRPC) in patients who have received prior chemotherapy. This approval was obtained on the basis of a Phase III study (known as COU-AA-301), which showed a 4.6-month improvement in median overall survival with a hazard ratio of 0.74. Results from a second Phase III study (known as COU-AA-302) in chemotherapy-naïve mCRPC patients were presented in a high profile session at ASCO and, for reasons that are discussed, have been much scrutinised since.

The study was stopped early, with 43% (333) of the expected overall survival events in Q411, based on the unanimous recommendation of the independent data monitoring committee (IDMC). The IDMC noted differences in radiographic progression-free survival (rPFS), OS, and secondary endpoints that constituted evidence of clinical benefit. Hence it was considered unethical to maintain patients on placebo. At the data cut-off, Zytiga had shown an at least 16 month increase in median rPFS and an estimated 33% improvement (at least nine months) in median OS; where in both cases the median number of events had not been reached in the treatment arm. Surprisingly, for overall survival, the p value, a seemingly impressive p=0.0097, did not reach the very high pre-specified definition of significance at the interim analysis[1] and hence is only considered a "trend". Data are shown in Exhibit 3.

Exhibit 3: Zytiga COU-AA-302 study results

Endpoints /other data	Zytiga + pred (n=542)	Placebo + pred (n=540)	HR (95% CI), p value
Co-primary endpoints			
Overall survival	NR	27.2mths	0.75 (0.61-0.93), p=0.0097*
Radiographic PFS	NR	8.3mths	HR=0.43 (0.35, 0.52), p <0.0001
Secondary endpoints			
Time to opiate use (cancer related pain)	NR	23.7mths	0.69 (0.57,0.83), p=0.001
Time to chemotherapy initiation	25.2 mths	16.8 mths	0.58 (0.49, 0.69), p<0.0001
Time to ECOG PS deterioration	12.3mths	10.9mths	0.82 (0.71,0.94), p=0.0053
Time to PSA progression	11.1mths	5.6 mths	0.49 (0.42,0.57), p<0.0001
PSA decline ≥50%	62%	24%	N/A
Other data	**Zytiga**	**Placebo**	**Notes**
Median no of cycles of Tx, range	15 (1-33)	9 (1-31)	6 months more on drug arm.
Treatment discontinued	376 (69%)	454 (84%)	Higher on placebo arm.
No. receiving subsequent Tx	242 (44.3%)	327 (60.3%)	Higher on placebo arm.
Docetaxel	207 (37.9%)	287 (53.0%)	Higher on placebo arm.
Cabazitaxel	45 (8.2%)	52 (9.6%)	
Ketoconazole	39 (7.1%)	63 (11.6%)	
Sipuleucel-T	27 (4.9%)	24 (4.4%)	

Source: ASCO presentation, compiled by Edison. Notes: NR = not reached; * considered a trend.

[1] The threshold for efficacy at 40% of survival events was set at p=0.0005. The analysis occurred at 43% of survival events and would have needed to achieve a p value of p=0.0008 to be considered significant.

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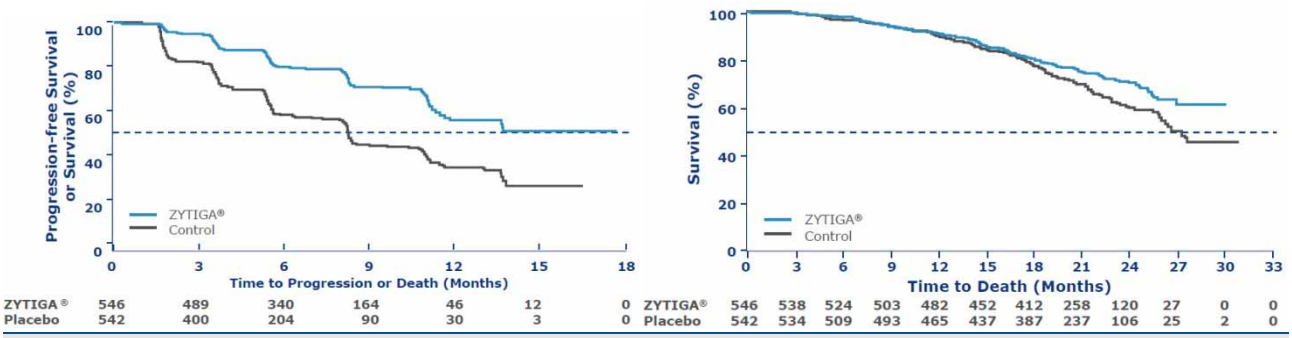
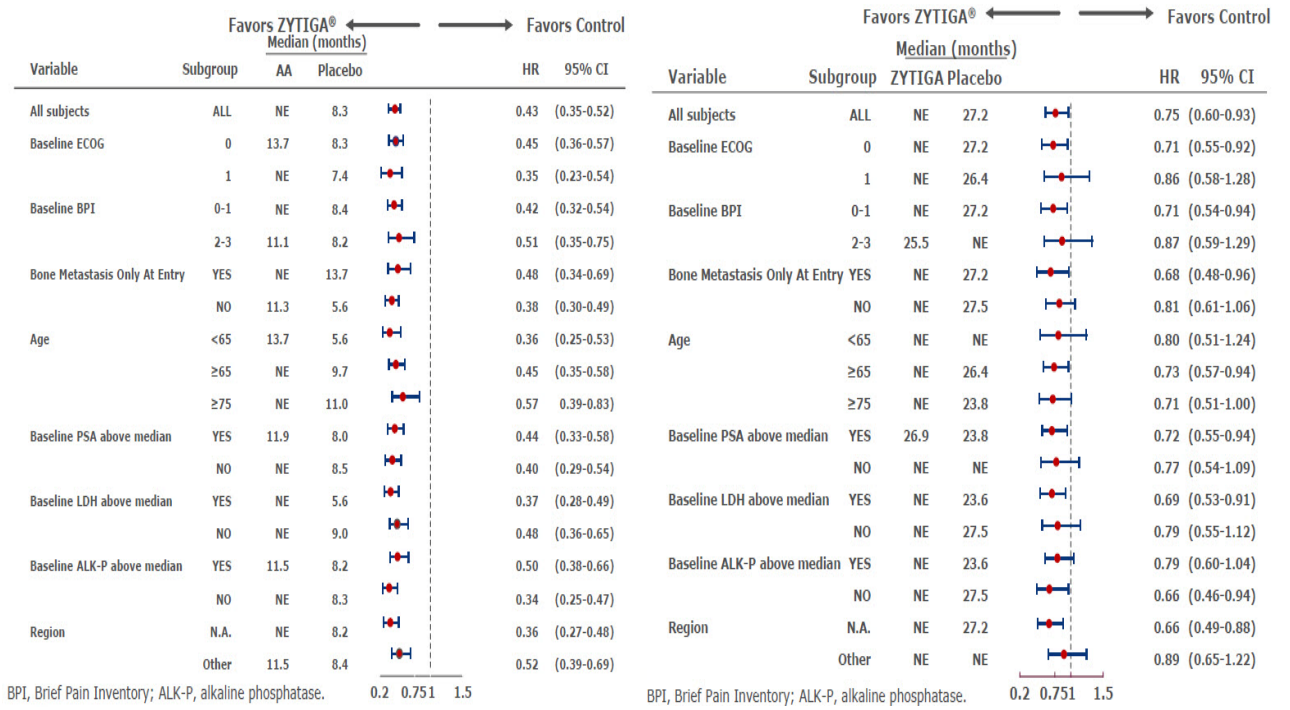
Exhibit 4: Kaplan-Meier plot of radiographic PFS (LHS) and overall survival (RHS)



Source: ASCO Presentation.

Exhibit 5: Benefit by subgroups, rPFS (LHS) and overall survival (RHS)



Source: ASCO Presentation

The fact the study only rendered a "trend" on OS prompted much discussion at ASCO, posing the question whether the IDMC had stopped the study a little too early. If the study had been allowed to run to its second interim analysis (based on 425 events, or 55% of the total), which would probably have occurred by now, it is assumed the OS result would have crossed the O'Brien-Fleming boundary (the stopping criteria, given multiple interim analyses) and would therefore have been considered an unambiguous success.

There was similarly much discussion at ASCO of the late separation of the Kaplan-Meier curves for overall survival. This may be important since, given the median number of cycles of Zytiga was 15, half of the patients on the treatment arm must have discontinued by 14 months and the survival effect was only evident some four months later, at 18 months. Furthermore, as of the data cut-off, some 69% of patients on Zytiga had discontinued treatment (vs 84% on control) with 44% of Zytiga patients receiving subsequent therapies (vs 60% on control arm). Therefore the presumably earlier use of

subsequent therapies by control arm patients (who received a median of nine cycles) may have caused the curves to overlap for the first 18 months.

Nevertheless, with the strong rPFS result, the "trend" in OS, subgroup and secondary endpoint data, it is widely presumed that J&J will be successful in obtaining an expansion of the approved label. Indeed, there is anecdotal evidence that many clinicians are already prescribing Zytiga off label (or intend to do so) in the pre-chemo setting in anticipation of a positive regulatory review. J&J intends to file regulatory submissions for pre-chemotherapy mCRPC in H2.

J&J appears to be aggressively promoting Zytiga (at least as evidenced by its profile at ASCO), presumably aiming to position the drug as the standard of care in mCRPC. It must be mindful of the looming competition from Medivation/Astellas's enzalutamide, which was filed in May and will probably receive priority review (meaning approval is possible within six months, ie by November). Enzalutamide has shown very strong efficacy data in the AFFIRM Phase III study in post-docetaxel setting, where the increase in median OS was slightly greater (at 4.8 months) than for Zytiga (4.6 months) and the hazard ratio is also slightly better (at 0.631 vs 0.74). Enzalutamide is also considered to have an advantage in not having the requirement for administration with prednisone. Nevertheless, Medivation is some way yet from obtaining data in pre-chemo mCRPC: a Phase III study of enzalutamide in this setting has just completed recruitment, so may not read-out until 2014, possibly also at an interim analysis. Longer term, both of these drugs may see some additional competition from Takeda's orteronel, which is in a 1,680-patient Phase III study in the pre-chemotherapy setting.

In Zytiga's favour is the large and growing pipeline of clinical trials where it is being studied in other settings, including some where it is used in the control arm (ie treated as a de facto standard of care). Dendreon has a study underway examining concurrent versus sequential administration of Zytiga with Provenge (sipulucel-T). An observation evident at ASCO is that, with alternative treatments now available, mCRPC patients are increasingly declining (or at least deferring) starting chemotherapy on grounds of side effects.

Exhibit 6: Current Zytiga Phase II studies (including ISTs)

125-pt Phase II study (IMAAGEN) of abiraterone plus GNRH in men with advanced non-metastatic CRPC. Results Sept 2012.
58-pt Phase II study of neoadjuvant abiraterone plus leuprolide in men with localised high-risk prostate cancer. Results: Jun 2012.
Fred Hutchinson Cancer Center-sponsored 25-pt Phase II study of radiation, abiraterone and LHRH agonist in advanced prostate cancer. Results Nov 2014.
38-pt SWOG-sponsored Phase II study in mCRPC with sub-optimal response (PSA of >4ng/mL) to ADT. Results: Aug 2012.
66-pt Phase II study of LHRH agonist ± abiraterone in neo-adjuvant HRPC. Results Jun 2012.
MD Anderson-sponsored 180-pt Phase II study of abiraterone ± sunitinib or dasatinib in CRPC. Results Mar 2014.
Dana Farber-sponsored 33-pt Phase II study of abiraterone with dutasteride for mCRPC. Results: Jun 2013.
CRUK-sponsored 74-pt Phase II study in postmenopausal women with advanced or metastatic breast cancer. Results: Jul 2012.
300-pt Phase II study of abiraterone ± exemestane in postmenopausal women with ER+ metastatic breast cancer progressing after letrozole or anastrozole. Results: Jul 2014.

Source: Edison Investment Research

Edison has modelled peak sales of Zytiga at $1.5bn/year, which we presume to be conservative. BTG receives the same level of royalties (c6% gross) from J&J on worldwide Zytiga sales for as long as a licensed patent remains in force. These licensed patents include ones covering processes that extend to 2025. There is a patent on abiraterone listed in the FDA orange book that expires in 2014 (hence there has been some speculation about possible generics) but we assume J&J will enjoy a much longer period of exclusivity in the US, probably into the 2020s. In In the EU, abiraterone has exclusivity via data protection to 2022.

A comparison on the efficacy data from controlled studies in mCRPC is shown in Exhibit 7 and studies of competing agents in Exhibit 8 overleaf.

Exhibit 7: Comparison of controlled survival studies in mCRPC

Drug, company	N	Comparator	Study (year)	Setting	Hazard ratio for OS (95% CI)	p value	Increase in OS	Median OS improvement, absolute (%)
Zytiga (abiraterone), J&J	1,088	placebo/ prednisone	COU-AA-302 (2012)	chemo-naïve	0.75 (0.61-0.93)	0.0097	33.3%	Not reached, vs 27.2 mth (N/A).
Zytiga (abiraterone), J&J	1,195	placebo/ prednisone	COU-AA-301 (2010)	post-docetaxel	0.740 (0.638-0.859)	<0.0001	35.1%	4.6 mth, 15.8 vs 11.2 (41.1%)
Alpharadin (Ra-223), Algeta/Bayer	921	placebo	ALSYMPCA (2011)	pre-/post docetaxel	0.695 (0.581-0.832)	0.00007	43.9%	3.6 mth, 14.9 vs 11.3 (31.8%)
Alpharadin, Algeta/ Bayer	526	placebo	ALSYMPCA (2011)	post-docetaxel sub-group	0.710 (0.565-0.891)	0.00307	40.8%	3.1 mth, 14.4 vs 11.3 (27.4%)
Alpharadin, Algeta/ Bayer	395	placebo	ALSYMPCA (2011)	chemo-naïve, sub-group	0.745 (0.562-0.897)	0.03932	34.2%	4.6 mth.16.1 vs 11.5 (40.0%)
Jevtana (cabazitaxel), Sanofi	755	mitoxantrone/ prednisone	TROPIC (2010)	post-docetaxel	0.70 (0.59-0.83)	<0.0001	42.8%	2.4 mth, 15.1 vs 12.7 (18.9%)
Enzalutamide, Medivation	1,199	placebo	AFFIRM (2011)	post-docetaxel	0.631	<0.0001	58.4%	4.8 mth, 18.4 vs 13.6 (35.2%)
Taxotere (docetaxel), Sanofi	1,006	mitoxantrone/ prednisone	TAX327 (2004)	chemo-naïve	0.76 (0.62-0.94)	0.009	31.5%	2.4 mth, 18.9 vs 16.5 (14.5%)
Prostvac, Bavarian Nordic	125	placebo	NCI multicentre*	chemo-naïve	0.56 (0.37-0.85)	0.006	78.5%	8.5 mth, 25.1 vs 16.6 (51.2%)
Provenge (sipuleucel-T), Dendreon	512	placebo	IMPACT (2010)	chemo-naïve	0.759	0.032	31.8%	4.1 mth**, 25.8 vs 21.7 (18.9%)

Source: Edison Investment Research. Notes: * Phase II study; ** Median overall survival would be 7.8 months and HR=0.60 (95% CI: 0.41, 0.95) if adjusted for known biasing factor of the cross-over to APC8015F in this study. N/A = not available.

Exhibit 8: Competing Phase III programmes for mCRPC

Compound	Company	Setting(s)	Notes
enzalutamide (MDV3100)	Medivation/ Astellas	chemo-naïve	1,680 pts Phase III study (PREVAIL) as monotherapy (results: Sep 2014). Co-Primary endpoints: OS and PFS.
tasquinomod	Active Biotech/Ipsen	chemo-naïve	1,200-pt Phase III study, in asymptomatic/mildly symptomatic (results: Jan 2016). Primary endpoint: PFS.
Jevtana (cabazitaxel)	Sanofi	chemo-naïve post-docetaxel	1,170-pt Phase III study of cabazitaxel at 20mg/m^2 and 25mg/m^2 vs docetaxel (FIRSTANA; results: Jan 2016). 1,200-pt Phase III study (PROSELICA) of 25 vs 20mg/m^2 (results: Sep 2017). 808-pt Phase III study (results: Dec 2015).
Yervoy (ipilimumab)	BMS	Chemo-naïve post-docetaxel	600-pt Phase III study in asymptomatic or minimally symptomatic, monotherapy (results: Feb 2015). 800-pt Phase III study, monotherapy (results: Dec 2012).
Custirsen	Teva/ OncoGenex	first-line combo with chemo, second line, combo	1,000-pt Phase III study (SYNERGY) combination with docetaxel (results: Dec 2013). 630-pt Phase III study (AFFINITY) of custirsen in combination with cabazitaxel/prednisolone (start H212).
Sprycel (dasatinib)	BMS	First-line combo	1,500-pt Phase III study with docetaxel (READY; fully-recruited, results: Feb 2013).
Orteronel	Takeda	chemo-naïve Post-docetaxel	1,454-pt Phase III study, monotherapy (results: Jan 2013). Primary endpoint: PFS. 1,083-pt Phase III study, monotherapy (results: Sep 2013).
Prostvac	Bavarian Nordic	chemo-naïve	1,200-pt Phase III study of Prostvac ± GM-CSF vs placebo (results: Dec 2014).
Cabozantinib (XL184)	Exelixis	post docetaxel/ post docetaxel/ abiraterone/ cabazitaxel	960-pt Phase III study (COMET-1) of cabozantinib vs prednisone (2:1) (start H1 2012). 587 events for primary analysis, interim at 387 events. 246-pt Phase III study (COMET-2) of cabozantinib vs mitoxantrone in pts with mod to severe pain (BPI>4) despite optimised narcotic therapy, post docetaxel or abiraterone and possibly cabazitaxel. Completion: mid-2013. Primary endpoint is alleviation of pain. Secondary endpoints: OS and radiographic PFS.

Source: Edison Investment Research. Note: Primary endpoint is OS, unless shown otherwise.

Sanofi submits Lemtrada regulatory filings

Earlier this month, Sanofi submitted the US and EU regulatory submissions (a supplemental Biologics License Application [sBLA] and an MAA respectively) for Lemtrada for the treatment of relapsing multiple sclerosis (RMS), putting the product on track for approval in late 2012 (if priority review is obtained) or early 2013.

The filings were made on the basis of the CARE-MS I and CARE-MS II Phase III studies, which were conducted in therapy-naïve and experienced patients respectively. Both studies showed Lemtrada to be superior to Rebif (interferon beta-1a, Merck KgaA) on clinical and imaging endpoints, including a reduction in relapse rate (see Exhibit 3). In both studies Lemtrada was given at a dose of 12mg, via IV administration, eight times over the course, with the first treatment course given on five consecutive days, and the second course on three consecutive days, 12 months later. Rebif 44mcg was administered by sc injection three times per week, throughout the two years of study. In CARE-MS II, a third group of patients received a higher dose of Lemtrada (24mg), given on the same dosing schedule as the lower dose. Results of the studies are shown in Exhibit 9.

Exhibit 9: Phase III studies with Lemtrada

Study	Results
840-pt CARE-MS II Phase III trial in treatment-experienced RRMS[2] after relapse while on prior therapy[3]. Pts randomised 2:1 to alemtuzumab (12mg, n=426, and 24mg, n=170) d1-5 at Month 0 and for d1-3 at Month 12 by IV infusion or high-dose Rebif (interferon beta-1a, Merck Serono), 44mcg 3x/wk for 2 yrs.	Stat. significant reductions in ARR[4] and six months' SAD[5]. 49% reduction in ARR for the 12mg dose (p<0.0001) and a 42% reduction in the risk of SAD, as measured by EDSS[6] (HR 0.58, p=0.0084). 29% of pts with alemtuzumab six-month showed a reduction in disability, meaning their level of disability improved, as compared to only 13% for Rebif (p=0.0002). Secondary outcome measures including: percentage of relapse-free patients at year two; EDSS change at year 2 (-0.17 vs. 0.24; p < 0.0001); change in MRI-T2-hyperintense lesion volume at year two; and change in MSFC score[7] from baseline) have not yet been disclosed. EDSS score decreased over a two-year period, indicating an improvement in their physical disability. Results presented at the American Academy of Neurology (May 2012).
581-pt CARE-MS I Phase III trial in treatment-naive RRMS randomised 2:1 to alemtuzumab (12mg/day d1-5 at Month 0 and d1-3 at Month 12 by IV infusion or Rebif (44mcg 3x wk).	55% reduction in ARR at two years (p<0.0001). Not significant on other co-primary endpoint, time to six-month SAD (HR=0.70, p=0.22). This may reflect the relatively early stage disease with only a small proportion (8% in alemtuzumab, 11% on Rebif) showing a SAD at two years. The study showed stat significant improvements in: MSFC (0.12 vs 0.05 mean change from baseline at yr 2, p=0.012); percentage of pts with: new and enlarging T2-hyperintense lesions (49% vs 58%, p=0.035); new Gd-enhancing lesions (15% vs 27%, p=0.0006); and with new T1-hypointense lesions (24 vs 31, p=0.05); and change in brain parenchymal fraction, a measure of brain atrophy (-0.87 vs -1.49 median percentage change from baseline, p<0.0001). No significant difference on T2-hyperintense lesion volume (-9.3 vs -6.5 median percentage change at yr 2, p=0.31). Results presented at the ECTRIMS/ACTRIMS conference (Oct 2011).

Source: Edison Investment Research

[2] Relapsing-remitting multiple sclerosis (RRMS) is the initial stage of the disease, characterised by unpredictable relapses followed by periods (lasting months to years) of remission. Deficits suffered relapses may either resolve or leave sequelae.
[3] Patients had to have experienced >2 relapses within two years of entering the trial, with>1 of these occurring within one year of relapsing remitting multiple sclerosis (RRMS) is the initial stage of the disease, characterised by unpredictable relapses followed by periods (lasting months to years) of remission. Deficits suffered relapses may either resolve or leave sequelae.
[4] Annualised relapse rate (ARR) is the number of confirmed relapses in a year. A relapse is defined as the appearance of a new or worsening of a previously stable or improving pre-existing neurological abnormality, separated by at least 30 days from onset of a preceding relapse. The abnormality must be present for at least 24 hours and occur in the absence of fever or infection. The annualised ARR is the mean of the annualised ARRs for all patients in the group, calculated as the total number of confirmed relapses divided by the total number of days on study, multiplied by 365.25.
[5] Sustained accumulation of disability (SAD), defined as an increase in EDSS of ≥1.0 point lasting ≥6 consecutive months (increase of ≥1.5 points, if baseline EDSS=0).
[6] Expanded Disability Status Scale, a scale (range 1-9.5) of MS symptom severity.
[7] Multiple Sclerosis Functional Composite score (MSFC), a measurement of physical and cognitive function.

Exhibit 10: Phase III results from studies of MS therapies

Drug/ Company	Study	Doses/% therapy naïve/experienced	Annualised relapse rate reduction	Proportion relapse free	Disability progression	Other endpoints/Notes
Tysabri (natalizumab)/ Biogen Idec/Elan	942-pt study MS1 (mono-therapy).	30mcg q4w vs pbo. 94% Tx naïve.	67% reduction (0.22 vs 0.67).	67% vs 41% at two years.	17% vs 29% (pbo) with sustained disability progression; 42% relative risk reduction.	REMS programme because of risk of PML.
Tysabri (natalizumab)/ Biogen Idec/Elan	Study MS2 (combination with Avonex)	30mcg q4w/Avonex vs Avonex. 100% Tx experienced.	56% reduction (0.33 vs 0.75).	54% vs 32% at two years.	N/A	See above
Gilenya (fingolimod)/ Novartis	1,292-pt TRANSFORMS.	0.125mg/0.5mg and Avonex. N/A	52% for 0.5mg (0.16 vs 0.33) and 38% for 1.25mg (0.20 vs 0.33), both p<0.001.	80-83% vs 69% for control (p<0.0001).	5.8% (6.4% for high-dose) on fingolimod at 12 mths vs 7.7% for Rebif (NS).	0.5mg is the now approved dose. FDA briefing documents.
Gilenya (fingolimod/) Novartis	1,272-pt FREEDOMS.	0.5mg, 1.25mg fingolimod and pbo. c 60% Tx naïve.	54% for 0.5mg (0.18 vs 0.4) and 60% for 1.25mg (0.16 vs 0.4), both p<0.001.	N/A. Proportion relapse free at two years: 74.7% (0.5mg), 70.4% (1.25mg) vs 45.6%; p<0.001. HR=0.38 (0.5mg) and 0.48 (1.25mg).	0.5mg (HR=0.70; p= 0.026). 1.25mg (HR=0.68; p=0.012). Cumulative prob. of disability prog 17.7% (0.5mg), 16.6% (1.25mg) vs 24.1% (pbo).	Novartis presentation. Kappos et al, NEJM.
Aubagio (teriflunomide)/ Sanofi	1,088-pt TEMSO.	7mg and 14mg teriflunomide and pbo. c 73% Tx naïve.	31% (for 7 and 14mg doses) (p≤0.0005).	Reduction of 24% (7mg) and 30% (14mg) (p<0.0005).	30% (14mg, p=0.02) and 24% (7mg, p=0.08).	EDSS ≤5.5 or less and >1 relapse in 1 yr or >2 relapses in 2 yrs. Likely to be contra-indicated for pregnant women.
Aubagio (teriflunomide)/ Sanofi	1,169-pt TOWER.	7mg and 14mg teriflunomide.	36% reduction (14mg dose) (p<0.0001); 22.3% reduction (7mg) (p=0.02).	N/A	31.5% reduction (14mg) in risk of 12-wk EDSS (p=0.0442); 7mg NS.	
Aubagio (teriflunomide)/ Sanofi	324-pt TENERE.	7mg and 14mg teriflunomide vs Rebif.	Teriflunomide 14mg (0.259) and Rebif (0.216) considered not distinguishable.	No superiority was observed between the Rebif and teriflunomide arms on primary endpoint, risk of treatment failure. 48.6% of pts (7mg, n=109) and 37.8% of pts (14mg, n=111) reached the primary endpoint, vs 42.3% of pts on Rebif (n=104).		Risk of treatment failure defined as the occurrence of a confirmed relapse or permanent discontinuation for any cause
BG12/Biogen Idec	1,011-pt DEFINE.	240mg bid and tid vs pbo.	53% (BID) and 48% (TID) reduction, vs pbo (p<0.05, both)	N/A	38%(BID, p=0.0050), 34% (TID, p=0.0128) reduction vs pbo.	Biogen R&D day presentation.
BG12/Biogen Idec	1,011-pt CONFIRM.	240mg bid and tid vs pbo and Copaxone (GA).	44% (bid) and 51% (tid) (both p<0.0001) vs pbo, vs 29% for GA (p=0.0128).	34% (bid; p=0.0020) and 45% (tid; p<0.0001) vs pbo. GA: 29% (p=0.0097).	21% (BID, p=0.2536), 24% (TID, p=0.2041) vs pbo. GA= -7% (p=0.7036).	Stat significant reduction in no. of new/newly enlarging T2 hyperintense lesions.
Laquinimod/ Teva/Active Biotech	1,106-pt ALLEGRO.	0.6mg laquinimod qd vs pbo.	23% reduction (p=0.0024).	N/A	31.5% reduction in risk of 12-wk EDSS (p=0.0442).	33% reduction in progression of brain atrophy (p<0.0001).
Ocrelizumab/ Roche	220-pt (Phase II), 24 wks.	2,000mg and 600mg vs pbo 2x IV at d1, and 15.	73% (2,000mg) and 80% (600mg) reduction at 24 wks, p=0.0014 and 0.0005.	N/A	N/A	96% (2000mg) and 89% (600mg) reduction in MRI brain lesions (p<0.0001).

Source: Edison Investment Research

Lemtrada is, however, one of three products in registration for MS that are likely to dramatically re-shape treatment of the disease by virtue of improved efficacy and more patient-friendly dosing (eg oral or infrequent injections/infusions, as in the case of Lemtrada). Results from recent Phase III studies of newer agents for MS are shown in Exhibit 10 opposite.

Three agents are currently in registration: Lemtrada, Biogen Idec's BG-12, filed in February, and Sanofi's Aubagio (teriflunomide), filed in October 2011. If Aubagio is approved, Sanofi could find itself in an unusual position of launching two competing products for MS at the same time.

A comparison of Phase III efficacy data suggests that Lemtrada should be competitive versus Gilenya although BG-12 may be more formidable. However, the advantage to which patients prefer its infrequent (annual) dosing schedule, versus a once daily oral therapy, is unknown. Aubagio, which is also a once-daily oral product, has not shown the same efficacy as Gilenya. It may, however, be priced accordingly.

Lemtrada's sales potential may also be dependent on the relative pricing of Lemtrada versus products such as Rebif, Gilenya (c $50k/year) and BG-12. Sanofi will have to manage an unusual pricing issue with Lemtrada in relation to Campath, which is the same antibody, used in the B-cell chronic lymphocytic leukaemia (B-CLL) indication. Although very expensive on a per treatment basis, Campath is used in much higher doses for B-CLL and the price differential, if both products were to remain on the market in the two different indications would probably be untenable[8]. Sanofi is thought likely to withdraw Campath and provide Lemtrada free of charge to CLL patients

The safety of all the novel agents will be important, since all of the agents (including Lemtrada) have seen rare but serious side effects. The incidence of serious adverse events (SAEs) was similar for Lemtrada and Rebif (18.4% vs 14.4%) and 16-18% of Lemtrada-treated patients developed an autoimmune thyroid-related AE (Goodpasture's syndrome). 1% of patients developed immune thrombocytopenia and all cases were detected early through a monitoring programme and managed using conventional therapies. Furthermore, in a conference call held during AAN, the study's principal investigators gave a very strong endorsement of Lemtrada's safety and Sanofi offered a solid appraisal of its commercial prospects.

Edison has modelled a peak sales figure of $1.25bn/year in MS, which it considers to be conservative, for valuation purposes. However, we also note that Sanofi could either price and/or market Lemtrada in such a way as to maximise the value of its overall MS franchise over the longer term. This could also have implications for BTG, which only receives royalties until 2017.

CytoFab results approaching

AstraZeneca expects to complete the 300-patient Phase IIb study in Q2 this year. The study examines two dose schedules (250 units/kg loading dose followed by nine maintenance doses of 50 units/kg every 12 hours, or 500 units/kg followed by nine 100 units/kg doses) versus placebo, using ventilator-free days as the primary endpoint. AstraZeneca's guidance remains for a potential filing in 2015, which looks aggressive unless it can start a Phase III by late 2012/early 2013. Approval is therefore possible in 2016. Little efficacy data are however available on AZD9773. A Phase II study, conducted in 1997-98, showed a five-day increase in ICU-free and ventilator-free days versus placebo, although this was not its primary endpoint.

[8] In B-CLL, a 30mg dose is given three times a week for 12 weeks. Each dose costs $1,750 for a total treatment cost of $63k/patient. For MS, a patient would receive an average of 48mg/year over two years. Hence Lemtrada would need to be priced at roughly 10x the per unit price of Campath to achieve the presumed targeted ~$50k per patient/year in MS.

There is a potentially large and completely unserved market in sepsis, with CytoFab one of just three products in active development. BTG could earn an additional £45m of CytoFab development milestones (including £10m on start of Phase III, possible in FY 2013), £115m of regulatory/launch milestones (on launch in US, major EU country, Japan, first launch of second indication) and 20% royalties on sales for >10 years. BTG can also earn a profit on commercial supply, equivalent to a c 10% royalty (5% after costs).

Second VANISH study comes in line with first

BTG has reported highly positive results in both of the VANISH studies of Varisolve (polidocanol endovenous microfoam, PEM). All endpoints in the VANISH-1 and VANISH-2 studies (primary, secondary and tertiary) were met with a high degree of statistical significance ($p<0.0001$) compared with vehicle (placebo). The VANISH-1 and VANISH-2 studies were essentially identical in design, with most PEM-treated patients receiving either the 0.5% and 1% dose.

A third, smaller Phase III trial, known as VV-017, which examined PEM for the treatment of smaller veins that remain after radiofrequency ablation of larger varicosities, just missed its predetermined goal. This required Varisolve to demonstrate a statistically significant improvement in appearance as measured by both IPR-V3 and PA-V3 (co-primary endpoints). The study showed a significant improvement in IPR-V3 (assessed by physicians), but did not reach statistical significance on PA-V3 (assessed by patients), although it showed a numerically superior trend. However, this study was not pivotal – it was designed to support market access – and should probably be considered a technical miss. It will still provide supportive efficacy and safety data. The Varisolve/PEM development programme is now complete and BTG can file regulatory submissions once 12-month follow-up data are available. Edison would expect BTG to file only for the 0.5% dose. Details of all three Phase III studies are shown on the datasheet on page 4.

Previous studies have shown consistent 85-90% efficacy in the elimination of reflux, including a Phase III trial in 656 patients (68% female) that completed in 2003 (and used an earlier formulation), which compared Varisolve with surgery and liquid sclerotherapy. The study met its goal of showing non-inferiority to the alternative approaches, with Varisolve showing a significant improvement over physician compounded foam sclerotherapy (PCF; $p=0.001$).

BTG intends to market Varisolve in the US reimbursed market itself, following regulatory approvals (possible in H2 2013) and seek partners for the US aesthetic market, and both market segments in rest of the world (global sales c $500m). Edison's valuation model assumes peak sales of $500m, in line with guidance. The company believes that c 600k reimbursed varicose procedures are performed annually in the US (c 300k legs treated with an average of two procedures per leg) and, on the basis that the cost is $3,000-4,000 per leg, this suggests that the US reimbursed market is worth over $1bn a year. The 50% market share reflects our estimate of the total, given the availability of alternative procedures (RF ablation etc).

Varicose veins affect 20% of people and are treated for symptomatic reasons (ie, pain, discomfort, itching etc), where treatment is generally reimbursed, or for cosmetic/aesthetic reasons. Current treatments include surgery, sclerotherapy, RF/laser ablation and transillumination power phlebotomy, all of which are effective but have various limitations. Varisolve offers a virtually pain-free treatment, suitable for out-patient use that is likely to be delivered at a lower cost.

Varisolve is a patent-protected drug/device combination that produces a highly uniform polidocanol foam with a carbon dioxide and oxygen mixture that has been optimised for safety and efficacy. If approved, PEM would be the first non-surgical treatment for varicose veins.

DC beads

BTG appears to have achieved a smooth transition to direct marketing of LC Beads in the US, having taken over from Angiodynamics on 1 January 2012. The bead sales continue to growing fast and there are a number of mostly investigator-sponsored studies underway that are designed to expand use, principally in hepatocellular carcinoma and colorectal cancer. Studies are underway in HCC at various stages (primary HCC, downstage to resection and bridge to transplant). BTG intends to focus future internal R&D activities on expanding the approved indications for DC/LC beads. It has disclosed plans to conduct a Phase II study of DEBIRI in liver metastases from colorectal cancer and in the use of DEBIRI/DEBDOX in orphan indications such as cholangiocarcinoma and metastatic ocular carcinoma.

Valuation

We have substantially revised and updated our valuation, taking 2012 as a base year, projecting a terminal value from 2017. This indicates a fair value of £1,407m or 430p a share. Although the share price is approaching the fair value, we note that our valuation is underpinned by the DCF value of BTG's core business (US speciality pharma/interventional oncology activities, royalties on approved products and cash), based on conservative assumptions. Hence, in investment terms, BTG offers an attractive proposition, with a well-supported core valuation and a number of near-term value-creation catalysts related to partnered R&D programmes.

Exhibit 11: BTG valuation summary

Component	Value (£m)	Notes
Core business (speciality pharma/int oncology, royalties)	723	DCF value with explicit forecast to 2016, terminal value based on 2017. 10% WACC, long-term growth 2%.
Varisolve	270	Now assumes a 90% probability.
Lemtrada	159	Assumes 90% probability, peak sales of $1.25bn, 3% net royalty.
CytoFab	136	20% probability, assumes peak sales of $1.65bn, 25% effective royalty.
Otelixizumab	7	Assumes lower probability; longer timelines than before.
Cash	112	Net figure, as reported at 31 March 2012.
Total	1,407	

Source: Edison Investment Research

The rNPVs of individual R&D programmes are calculated based on our estimates of market size, economics of actual and potential licensing arrangements, market share and probabilities of success. Assumptions used in rNPV calculations are shown in Exhibit 12.

Exhibit 12: Risk-adjusted NPV inputs for key development programmes (partnered/internal)

Product	Partner	Indication	Stage	Prob	Launch year	Peak sales ($m)	Milestones[1] ($m)	Net royalty[1]
Varisolve	N/A	Varicose veins	Phase III	90%	2013	500	N/A	35%*
Lemtrada	Sanofi	Multiple sclerosis	Phase III	90%	2012	1,250	N/A	3%
CytoFab	AstraZeneca	Severe sepsis	Phase II	20%[2]	2016	1,650	250	25%
otelixizumab	GSK	MG	Phase II	20%	2016	250	51	3%
otelixizumab	GSK	RA/Graves/T12D	Phase I	15%	2016	1,250	200	3%

Source: Edison Investment Research. Note: *The royalty for Varisolve is a hypothetical figure assumed for the purposes of valuation only. The operating margin from direct sales in the US would be expected to be considerably higher than this. [1]Edison estimate; [2]lower than industry-standard Phase II probability, reflecting the historically high risk associated with the sepsis indication.

Edison has also deliberately excluded from the valuation a number of unpartnered R&D assets including BTG's angiotensin vaccine (ATV), DC Beads Neuro and Cellbeads Cardio programmes, because of the lack of visibility on the potential partnering or their early-stage nature. Hence any progress or licensing of any of these programmes would represent pure upside. Several partnered assets are also excluded where there is insufficient visibility on their timelines.

Sensitivities

BTG derives revenue principally from direct product sales and royalty interests in marketed products, sold by third parties. Directly marketed products are primarily used in emergencies and are subject to little actual, or potential, competition. CroFab may face competition at some point and Varisolve, if approved, will have to compete with RF or laser ablation. Zytiga and, if approved, Lemtrada, are both competing in highly dynamic markets that make forecasting sales longer term more uncertain. We have modelled what we consider to be a cautious base case, leaving significant potential for upside surprise. Principal risks relate to the success of commercialisation of products, both directly and by partners. The company is exposed to the normal drug development risks (ie the success or failure of clinical trials including those of competitors), regulatory risk and commercial decisions by partners and potential partners.

Financials

BTG finished 2011/12 with £112m in cash and equivalents. We have modelled revenues for the current year ending March 2013 of £190m, at the upper end of BTG's £180-190m revenue guidance. We consider it possible that BTG will surpass the guided fiscal 2013 figure, particularly in relation to the contribution from Zytiga. We expect a significant increase in revenues to c £224m in 2013/14 and project c 15% a year sales growth from speciality pharma and interventional oncology businesses over the medium term (three to five years). We have assumed total selling and administration costs of £56m and an R&D spend of £40m in fiscal 2013. Exhibit 13 shows the revenue breakdown.

Exhibit 13: BTG revenue analysis (£m)

Revenue item	FY12	FY13e	Notes
CroFab	55.8	58.6	Assumes 5% growth/pa
DigiFab	16.3	17.1	Gain from withdrawal of competitor
Voraxaze	4.6	6.0	Higher pricing and promotion post approval
Speciality Pharma	76.7	81.7	
DC Beads	20.3	27.6	Growth led by higher contribution from direct US sales
Brachysciences	8.4	8.8	Assumes 5% growth
Interventional med	28.7	36.4	
BeneFIX	29.4	3.0	Patent expired Mar 2010
Zytiga royalty	18.6	40.0	Growing fast
Two-part hip cup	13.0	13.0	Assume flat
Campath/Lemtrada	4.1	5.0	Assume very small MS contribution in FY13.
MRC Mab IP	5.6	5.9	
Other	9.8	5.0	
Milestones	11.1	0.0	None assumed at this point.
Licensing & Biotech	91.6	71.9	
Total	197.0	190.0	

Source: Edison Investment Research. Notes: *BeneFIX royalties ceased on expiry of patents in March 2011, although are due on product already in the supply chain.

Exhibit 14: Financial summary

£m	2010	2011	2012	2013e	2014e
Year end 31 March	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS					
Revenue	**98.5**	**111.4**	**197.0**	**190.0**	**223.5**
COGS/revenue sharing	(32.8)	(34.1)	(56.3)	(60.5)	(73.2)
Gross profit	65.7	77.3	140.7	129.5	150.4
EBITDA	**13.8**	**16.0**	**57.3**	**39.2**	**53.0**
Op Profit (before amortisation and except)	11.6	13.6	54.1	36.2	50.0
Amortisation of Patents	(9.1)	(19.6)	(30.7)	(17.0)	(17.0)
Profit on disposals	0.0	1.5	0.2	0.0	0.0
Write-offs	0.0	(1.4)	(0.2)	0.0	0.0
Restructuring costs	0.7	(7.3)	(1.1)	0.0	0.0
Share based payments	(1.1)	(0.6)	(2.4)	(2.4)	
Operating Profit	**2.1**	**(13.8)**	**19.9**	**16.8**	**33.0**
Net Interest	7.0	3.0	3.1	3.0	3.5
Profit Before Tax (norm)	**18.6**	**16.6**	**57.2**	**39.2**	**53.5**
Profit Before Tax (reported)	**9.1**	**(10.8)**	**23.0**	**19.8**	**34.1**
Tax	2.2	20.0	(8.4)	(8.4)	(14.0)
Profit After Tax (norm)	**20.8**	**36.6**	**48.8**	**30.8**	**39.5**
Profit After Tax (reported)	**11.3**	**9.2**	**14.6**	**11.4**	**20.1**
Average Number of Shares Outstanding (m)	255.9	269.0	326.6	327.3	327.3
EPS - normalised (p)	8.1	13.6	14.9	9.4	12.1
EPS - reported (p)	4.4	3.4	4.5	3.5	6.1
Dividend per share (p)	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)	66.7	69.4	71.4	68.2	67.3
EBITDA Margin (%)	**14.0**	**14.4**	**29.1**	**20.6**	**23.7**
Operating Margin (before GW and except.) (%)	11.8	12.2	27.5	19.1	22.4
BALANCE SHEET					
Fixed assets	197.9	358.9	331.5	316.0	300.5
Intangible assets	152.7	271.0	246.0	229.8	213.6
Goodwill	30.3	59.2	59.2	59.2	59.2
Tangible assets	10.6	24.8	22.0	22.7	23.4
Investment in associates	4.3	3.9	4.3	4.3	4.3
Current assets	113.1	129.6	174.3	203.0	242.8
Stocks	9.6	20.0	21.8	23.2	24.8
Debtors	20.4	32.7	40.1	38.7	45.5
Cash	82.6	73.9	112.4	141.1	172.5
Other	0.5	3.0	0.0	0.0	0.0
Current liabilities	(43.4)	(52.3)	(58.3)	(60.6)	(68.0)
Creditors	(22.8)	(32.2)	(37.4)	(42.6)	(50.0)
Accruals/deferred income	(18.0)	(18.0)	(18.0)	(18.0)	(18.0)
Employees/provs/tax	(1.1)	(2.1)	(2.9)	(0.8)	(0.8)
Derivative instruments	(0.8)	0.0	0.0	0.0	
Short-term borrowings	(0.7)	0.0	0.0	0.0	0.0
Long-term liabilities	(52.4)	(43.9)	(41.3)	(36.5)	(31.8)
Long-term borrowings	0.0	(2.9)	0.0	0.0	0.0
Other long-term liabilities	(52.4)	(41.0)	(41.3)	(36.5)	(5.1)
Net assets	215.2	392.3	406.2	421.8	443.5
CASH FLOW					
Operating cash flow	7.7	(10.7)	48.3	31.2	35.7
Net interest	0.5	0.4	0.6	3.0	3.5
Tax	(2.4)	(1.3)	(1.1)	(1.0)	(3.4)
Acquisition/disposal of intangibles	(1.7)	0.2	(6.0)	(0.8)	(0.8)
Capital expenditure	(1.5)	(10.2)	(3.7)	(3.7)	(3.7)
Acquisitions/disposals	0.0	14.4	0.0	0.0	0.0
Financing	2.4	0.0	0.1	0.0	0.0
Dividends	0.0	0.0	0.0	0.0	0.0
Other	0.0	(4.0)	0.0	0.0	0.0
Net cash flow	5.0	(11.2)	38.2	28.7	31.3
Opening net debt/(cash)	**(77.2)**	**(81.9)**	**(71.0)**	**(112.6)**	**(141.1)**
HP finance leases initiated	0.0	0.0	0.0	0.0	0.0
Other	(0.3)	0.3	3.4	(0.2)	0.1
Closing net debt/(cash)	**(81.9)**	**(71.0)**	**(112.6)**	**(141.1)**	**(172.5)**

Source: Edison Investment Research

Contact details	Revenue by geography
5 Fleet Place, London EC4M 7RD United Kingdom +44 (207) 575 0000 www.btgplc.com	N/A

CAGR metrics		Profitability metrics		Balance sheet metrics		Sensitivities evaluation	
EPS 10-14e	N/A	ROCE 13	N/A	Gearing 13e	N/A	Litigation/regulatory	●
EPS 12-14e	N/A	Avg ROCE 10-14e	N/A	Interest cover 13e	N/A	Pensions	●
EBITDA 10-14e	40%	ROE 13e	7%	CA/CL 13e	3.3	Currency	◖
EBITDA 12-14e	N/A	Gross margin 13e	68%	Stock turn 13e	45	Stock overhang	○
Sales 10-14e	23%	Operating margin 13e	19%	Debtor days 13e	74	Interest rates	◖
Sales 12-14e	N/A	Gr mgn / Op mgn 13e	3.6	Creditor days 13e	80	Oil/commodity prices	○

Management team

CEO: Dr Louise Makin	CFO: Rolf Soderstrom
CEO since October 2004. Previously at Baxter Healthcare, including as president, biopharmaceuticals Europe (2001-04). Director of Global Ceramics at English China Clays (1998-2000) at ICI (1985-98). Holds MA in natural sciences and PhD in metallurgy (University of Cambridge) and MBA.	CFO (and board director) since December 2008. Joined as FD of Protherics in August 2007. Previously divisional FD at Cobham (2004-07), director of corporate finance at Cable & Wireless and at PWC.
Chairman: Gary Watts	**EVP, US: Matthew Gantz**
Chairman since January 2012. Also chairman of Spire Healthcare, director of Stagecoach Group and Coca-Cola Enterprises Inc. Formerly CEO of SSL International (2003-10), former NED of Medeva, Celltech and Protherics.	Joined BTG in 2009. Previously experience includes founder/CEO of Acureon Pharmaceuticals, president/CEO of Hydrabiosciences, VP Europe for Chiron's Biopharmaceutical Division (2000-2003), GM for PathoGenesis Europe. NED of Swedish Orphan Biovitrum.

Principal shareholders	(%)
Invesco	29.4
M&G AM	13.5
AXA Framlington	4.2
Standard Life	3.7
Legal & General	3.4
Aviva	3.4

Companies named in this report

Johnson & Johnson (NYSE:JNJ), AstraZeneca (AZN.L), Sanofi (SAN.PA), Astellas (Tokyo: 4503), Medivation (Nasdaq:MDVN), Dendreon (Nasdaq:DNDN), GlaxoSmithKline (GSK.L)