



Market data

EPIC/TKR	AVO
Price (p)	46.0
12m High (p)	92.0
12m Low (p)	9.5
Shares (m)	80.9
Mkt Cap (£m)	37.2
EV (£m)	48.0
Free Float*	57%
Market	AIM

*As defined by AIM Rule 26

Description

Developing next generation proton therapy systems for use in radiation therapy of cancers. The first system is expected to be installed in Harley Street, London during 2019; to be operated through a joint venture company with CircleHealth.

Company information

Exec. Chairman Michael Sinclair
CEO Nicolas Serandour

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www.advancedoncotherapy.com

Key shareholders*

Directors	14.5%
Yantai CIPU	29.9%
AB Segulah (+Mijesi AB)	12.6%
Brahma AG	7.2%
MK Trust	3.3%

*Following completion of capital increase

Diary

4Q 17	Harley Street update
4Q 17	PPS newsflow
4Q 17	Beam through SCDTLs

Analysts

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Advanced Oncotherapy

Consolidating market

AVO is focused on delivering a more affordable, novel, proton-based radiotherapy system, based on technology originally developed at the world-renowned CERN. Major milestones have been achieved in 2017 and the company remains on track with its development plan to deliver and install the first LIGHT system in 2019. Confidence has been enhanced greatly by technical milestones, a distribution agreement in China and SE Asia, and a sizeable capital increase. An announcement that Hitachi and Mitsubishi Electric are integrating their respective proton therapy offerings into a single entity is a recognition of the value of this global opportunity.

- ▶ **Strategy:** To develop a compact, modular and affordable proton therapy system that generates superior patient outcomes. AVO benefits from the technology know-how developed by ADAM, a medical spin off from CERN, and relies on a base of world-class suppliers.
- ▶ **Consolidation:** Hitachi (TSE:6501) and Mitsubishi Electric (TSE:6503) have announced their intention to combine their respective proton therapy offerings into a single entity, to generate efficiencies in the design, manufacture and commercialisation of their systems and to offer better post-installation service.
- ▶ **Global presence:** Mitsubishi is ranked #2 in Japan but has no installations outside its home territory; in contrast, Hitachi is #1 in Japan, and has developed also a solid presence in the US, where it has four installations. The combined entity will become global #2 in the installed base of treatment rooms.
- ▶ **Risks:** Although AVO has its own specific risks with the development and funding of LIGHT and Harley Street, this deal also poses some risk. It creates another large competitor for AVO; but also highlights the significant opportunity for AVO and underlines the challenges that key competitors with their circular accelerators face, in particular the challenge to align offer and demand.
- ▶ **Investment summary:** Demand for Proton Therapy is increasing worldwide and the need for a small, flexible, and affordable machine is apparent. AVO is well positioned with its disruptive offering of a flexible & affordable system. Although no financial information regarding Hitachi-Mitsubishi has been released, the deal indicates the high value of having a global offering in this growth industry.

Financial summary and valuation

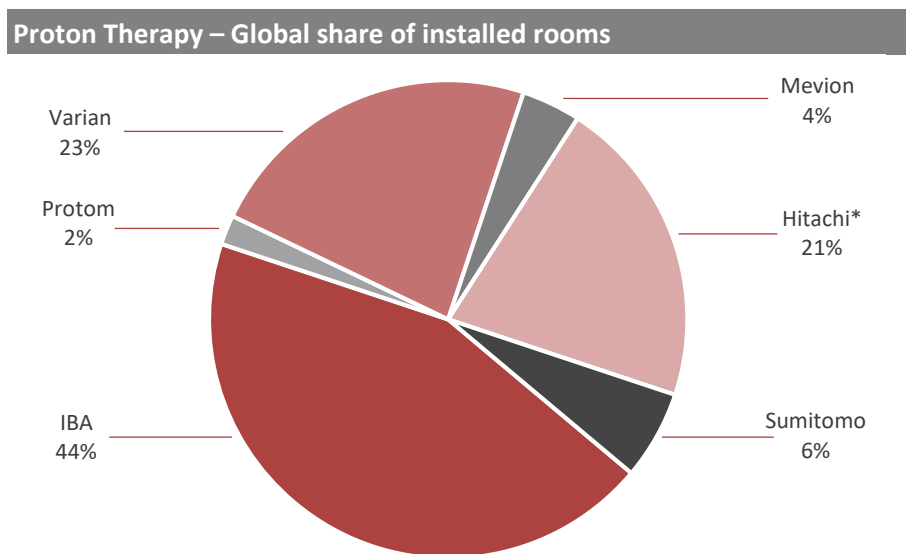
Year end Dec (£m)	2014	2015	2016	2017E	2018E	2019E
Sales	0.11	0.00	0.00			
EBITDA	-5.06	-6.41	-10.83			
Underlying EBIT	-5.18	-6.59	-11.18			
Reported EBIT	-6.45	-8.51	-13.09			
Underlying PBT	-5.06	-6.72	-11.27			
Statutory PBT	-7.56	-8.63	-13.18			Forecasts under review
Underlying EPS (p)	-14.91	-7.13	-11.26			
Statutory EPS (p)	-22.29	-12.25	-14.37			
Net (debt)/cash	0.48	7.96	0.91			
Capital increase	10.16	21.06	13.54			
P/E (x)	-1.0	-2.0	-1.3			
EV/sales (x)	-	-	-			

Source: Hardman & Co Life Sciences Research

Hitachi & Mitsubishi integration

Proton therapy is recognised increasingly as one of the most advanced forms of therapy available that can treat most forms of cancer. Consequently, given the incidence of cancer, there is increasing demand worldwide for specialist proton therapy centres. Currently, there are around 70 installed proton therapy systems worldwide and the expectation is that this will increase at a rate of about 10 per annum for the foreseeable future. Although there is high demand in the market and strong order books at the specialist medical equipment manufacturers, there is a problem adhering to the long delivery times. Therefore, there is a need for greater efficiencies in the manufacturing and supply processes.

Last week (7th November), Hitachi (TSE:6501) and Mitsubishi Electric (TSE:6503) announced that they have agreed to merge their respective proton therapy offerings into a single entity that can offer a more efficient design, manufacturing and commercial process, and a better maintenance service of installed systems. No financial details have been disclosed so far. Completion is expected in April 2018 following regulatory clearance. The combined entity will have an estimated 21% share of the global installed base of treatment rooms.



**Assumes completion of Hitachi-Mitsubishi Electric PT businesses
Source: IBA; Hardman & Co Life Sciences Research*

Apart from an improved offering, it allows a more diverse geographical spread, the installed base of Mitsubishi being in nine centres in Japan only. In contrast, five of Hitachi’s PTS are in the US and a further two under construction internationally – Hong-Kong and Singapore.

PBT Offerings of Hitachi and Mitsubishi Electric

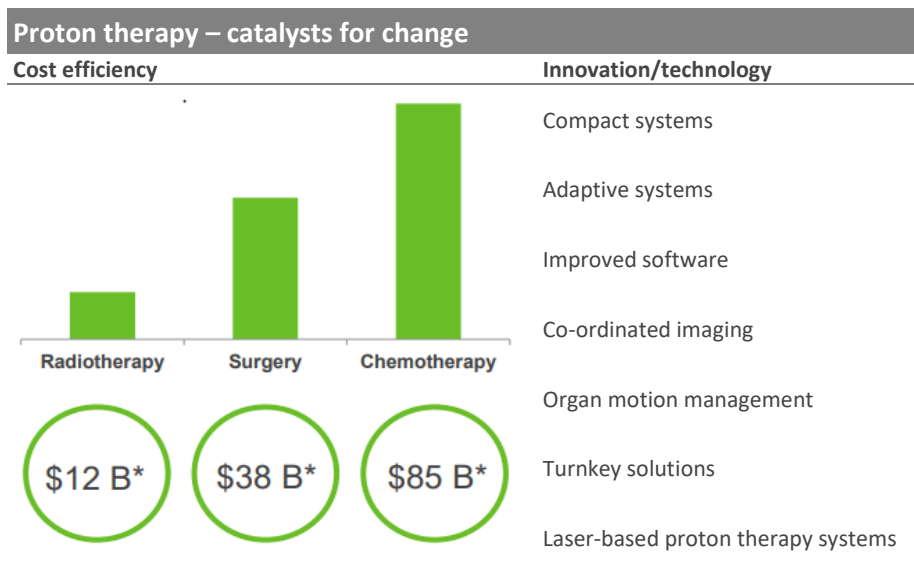
System	Hitachi	Mitsubishi
Accelerator	Synchrotron	Synchrotron
Beam	Proton	Proton/Carbon/Dual
Gantry	Rotating or fixed	Rotating or fixed
Installed systems	7	9
Under construction	3	2

Source: Corporate websites; Hardman & Co Life Sciences Research



Source: Corporate websites

The key advantages of proton therapy are that it can be delivered with pinpoint accuracy through patient-specific (personalised) treatments with minimal side effects. The key disadvantages are the need for construction of large specialised buildings and the cost of the equipment. To overcome these disadvantages, Advanced Oncotherapy is developing a flexible, more compact, modular proton therapy system that generates superior patient outcomes, and that can be installed at a much more affordable price.



*Spend per annum in US on cancer care
Source: IBA Capital Markets presentation

Conclusion

Hitting a number of technology milestones in 2017 has considerably de-risked AVO’s project and has increased confidence in a successful outcome. This, in turn, has improved discussions around funding and commercialisation, culminating in the announcement (7th Dec) of a significant capital increase to resolve the company’s funding requirements and a distribution agreement covering China and SE Asia.

There is a recognised worldwide demand for proton therapy centres. However, satisfying this demand, given the long lead times, is very difficult. Integration of Hitachi’s and Mitsubishi’s offerings highlights the need for manufacturing efficiencies, and is a recognition of the value of this global opportunity. AVO will be very well placed in this market with its disruptive LIGHT system.

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