



IN-DEPTH RESEARCH NOTE:

The Hydroponics Company

Price: A\$0.34 | Price Target: A\$0.48 | ASX: THC | 16 May 2017

THC has successfully raised funds through an IPO, which sets the Company up to deliver on its short to medium term strategic priorities. This includes bedding down the initial portfolio of companies, advancing its R&D program and exploring further acquisitions. THC is a vertically integrated cannabis company with existing operating earnings, which we believe should provide support to its current share price. Management has outlined an aggressive growth target, looking to achieve revenue greater than A\$15m and A\$3m in net profit by FY18. Should the Company achieve this, the stock price is likely to significant re-rate higher from current levels, despite already achieving +70% since listing.

- **The Hydroponics Company (THC).** THC aims to become a global leader in the cannabis industry, through the development and delivery of medicinal cannabis, manufacturer and distribution of hydroponics equipment, materials and nutrients and large-scale hydroponic greenhouse design and construction. The business has three main segments – (1) IP Research and Development; (2) Hydroponic Equipment; and (3) Greenhouse Design, Construction and Management. We see merit in THC's strategy of being a vertically integrated cannabis company with exposure along the supply chain, ranging from equipment, cultivation and processing. To accelerate its growth, the Company will use some of the IPO funds to acquire businesses, some of which are established and with positive earnings.
- **Key investment drivers.** (1) **Increasing public support for medicinal cannabis.** There has been a notable surge in support for legalising marijuana, both overseas (the US particularly) and in Australia. (2) **Experienced management team.** THC has an experienced management team and Board, with background in finance (including M&A), plant breeding & crop management and international research collaboration. (3) **Existing earnings base provides cash flow and share price support.** One of THC's portfolio companies Crystal Mountain Manufacturing (CMP) has over 600 products and holds nine patents across a range of categories: lighting and power supplies; lighting relays; climate control; ventilation and extraction bags. CMP has been profitable for five years now and sources from China to distribute hydroponic equipment & nutrients across Canada, UK, EU and USA. (4) **Legalisation in Canada a significant opportunity for THC's hydroponics products.** In April 2017, the Canadian Prime Minister Justin Trudeau is planning to legalise recreational marijuana. The proposed legislation is being targeted to take effect by July 2018, which will allow anyone above 18 years of age to buy cannabis (fresh/dried), cannabis oils, seeds and plants. (5) **Acquisitions on the agenda.** In our recent discussion with management they noted that they are keen to consider acquisitions having recently raised equity via an IPO. While management did not provide much detail on this front, they did note that any acquisition must provide synergies and they have no geographical preference.
- **Our valuation.** Given THC has operating segments with earnings (Figure 2 & 3) and has outlined a target to achieve revenue of greater than A\$15m and NPAT of A\$3m by 2018 (that is NPAT margin of greater than 20%), we use a DCF valuation to arrive at a our price target. Here are our key assumptions: THC achieves revenue of A\$15m and EBIT of A\$3.6m by FY18; we assume long-term EBIT margins of ~36%; expect the Company to continue growing revenue at high double-digit rate due to new markets being opened up; assume tax rate of 22% as most of the revenue will be derived from overseas markets; and WACC of 15% (assume no debt in the capital structure). We arrive at a valuation and price target of A\$0.48. We must note this gives no valuation to any upside from THC's R&D program, which under the current valuation, investors are essentially getting for free.

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THC investment drivers...

#1 Increasing public support for medicinal cannabis. There has been a notable surge in support for legalising marijuana, both overseas (the US particularly) and in Australia. In a survey conducted by Gallup in October 2016, 60% of adults supported legalising marijuana for use. What is also worth highlighting is that the support for the drug has increased in all age subgroups since 2005, indicating it is not just the millennials who are driving the change in sentiment. The North American cannabis market is estimated to reach US\$20bn by 2021, with US cannabis estimated industry revenues expected to reach US\$24-44bn by 2020.

#2 Experienced management team. THC has an experienced management team and Board, with background in finance (including M&A), plant breeding & crop management and international research collaboration. In our view, these skill sets will be critical in delivering THC's strategy. We do expect the Company to expand its team as it acquires more businesses and bring in new skills set into the fold.

#3 Existing earnings base provides cash flow and share price support. We see merit in THC's strategy of being a vertically integrated cannabis company with exposure along the supply chain, ranging from equipment, cultivation and processing. To accelerate its growth, the Company will use some of the IPO funds to acquire businesses, some of which are established and with positive earnings. One of THC's portfolio companies Crystal Mountain Manufacturing (CMP) has over 600 products and holds nine patents across a range of categories: lighting and power supplies; lighting relays; climate control; ventilation and extraction bags. CMP has been profitable for five years now and sources from China to distribute hydroponic equipment & nutrients across Canada, UK, EU and USA. THC intends on expanding CMP's reach to other markets around the world as cannabis becomes legal in other jurisdictions.

#4 Legalisation in Canada a significant opportunity for THC's hydroponics products. In April 2017, the Canadian Prime Minister Justin Trudeau is planning to legalise recreational marijuana. The proposed legislation is being targeted to take effect by July 2018, which will allow anyone above 18 years of age to buy cannabis (fresh/dried), cannabis oils, seeds and plants. The Government will look to legalise edible products such as brownies at a later date. Canada would be the only nation after Uruguay to legalise the recreational use of marijuana. With 600 products, including 9 trademarks plus 2 patents, the legislation of recreational use could see a step change in THC's revenue and earnings should it capture the upswing in demand.

#5 Acquisitions on the agenda but present focus is to bed down current portfolio of companies. In our recent discussion with management they noted that they are keen to consider acquisitions having recently raised equity via an IPO. While management did not provide much detail on this front, they did note that any acquisition must provide synergies and they have no geographical preference. It is our understanding that the Company is currently not taking any due diligence on potential acquisitions and therefore we do not expect the Company to announce an acquisition in the short term. In a recently published presentation, the Company hopes to achieve revenue of greater than A\$15m and NPAT of A\$3m by 2018. We suspect acquisitions will play a large role in achieving this.

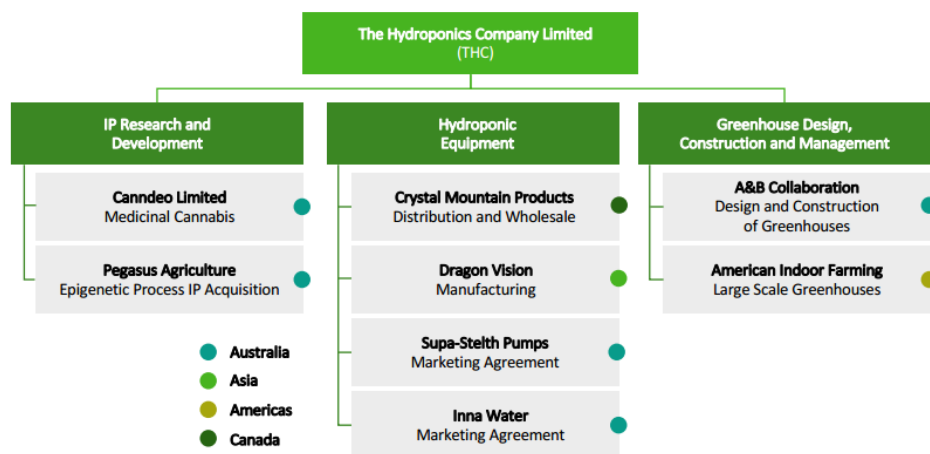
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THC company overview...

The Hydroponics Company Ltd (THC) aims to become a global leader in the cannabis industry, through the development and delivery of medicinal cannabis, manufacturer and distributor of hydroponics equipment, materials and nutrients and large-scale hydroponic greenhouse design and construction. The business will have three main segments – (1) IP Research and Development; (2) Hydroponic Equipment; and (3) Greenhouse Design, Construction and Management.

STRATEGY. We see merit in THC's strategy of being a vertically integrated cannabis company with exposure along the supply chain, ranging from equipment, cultivation and processing. To accelerate its growth, the Company will use some of the IPO funds to acquire businesses, some of which are established and with positive earnings.

Figure 1: THC business structure



Source: Company

Below is a brief description on key Company segments.

- **Canndeo Limited (Research).** Canndeo is an Australian agriculture business, with 17 years experience in the breeding, variety selection and growth management of Cannabis sativa, which will be applied to the production of medicinal cannabis. THC has already submitted a research licence application for Canndeo to conduct cannabis research and cultivation.
- **Crystal Mountain Manufacturing Inc (Equipment).** Crystal Mountain Manufacturing (CMP) has over 600 products and holds nine patents across a range of categories: lighting and power supplies; lighting relays; climate control; ventilation and extraction bags. CMP is profitable for five years now and sources from China to distribute hydroponic equipment & nutrients across Canada, UK, EU and USA. THC intends on expanding CMP's reach to other markets around the world as cannabis becomes legal in other jurisdictions.
- **Supa-Stelth Water Pumps (Equipment).** The Company has secured the exclusive rights to distribute these pumps into the hydroponics markets, which offer more efficiency compared to existing solutions.

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- **InnaWater – Water Sterilisation and Conditioner (Equipment).** The Company has secured the exclusive rights to distribute and market chemical free water purification systems for closed hydroponic installations.
- **THC Plant Science – Epigenetic Process (Research)** – Independently conducted laboratory tests suggest that THC's developed epigenetic process can accelerate modified plants' growth by 33% to 40% than their parent stock. Therefore providing higher returns for growers.
- **Hydroponic Greenhouses (Development)** – The Company has appointed an Americas representative (Jim Barlow) to develop large commercial hydroponic greenhouses.

MANAGEMENT. THC has an experienced Board and management team in place. We outline the bio of key personnel below.

Alan Beasley (Chairman). Mr Beasley has more than 30 years' experience in investment banking and management roles, including Goldman Sachs and Bankers Trust Australia.

Mary Verschuer (Non-Executive Director). Ms Verschuer is an experienced company director with more than 20 years experience in various management roles including executing and integrating acquisitions.

Peter Wallace (Non-Executive Director). Mr Wallace, with over 30 years experience, has worked across private equity, corporate advice and financial control.

Ian Mutton (Non-Executive Director). Mr Mutton is a significant experience in contract, competition and product liability laws. He also brings experience in relation to ongoing compliance with the listing rules and regulation.

Hamish MacDonald (CEO). Hamish was the CEO in the commercialization of a Biotechnology start-up company that has successfully negotiated contracts with Clenergen Ltd to supply biomass genetics for a 500MWH offtake agreement in India. He also formed a joint venture with Linc Energy Ltd for the development of a bioreactor to remove CO₂ emissions from coal and gas fired power stations and an R&D phytoremediation contract with Queensland Gas Group Ltd for the alleviation of contaminants within coal seam process water within the Surat Basin.

John Hall (Executive). Mr Hall has over 30 years' experience in plant breeding, crop management and monitoring systems, as well as directorships of several companies. He has worked extensively in crop nutrition, including hydroponics, and was involved in breeding 7 of 9 registered industrial hemp varieties in Australia for the company. He has also consulted extensively in Australia, USA, Europe and Asia.

Dr Andrew Beehag (CEO Canndeo). Andrew Beehag will lead THC's medicinal cannabis development program. His recent background includes managing a \$65 million, 5-year industry and academic research centre with 24 international partners, which secured A\$14 million of Australian government funding.

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Jason Colquhoun (CEO Crystal Mountain and Dragon Vision). Jason Colquhoun is the vendor of Crystal Mountain (Incorporated in Canada) and Dragon Visio (incorporated in Hong Kong), which specialise in horticultural supplies. Jason is a self-made entrepreneur, with a broad range of international experience. Honing his business skills with a small start-up based out of his garage, Jason has successfully grown his business acumen to become a multi-national, multi-million-dollar enterprise.

Jim Barlow (Regional Manager of the Americas). Jim has rare knowledge and experience in the concepts and methods of applied soil microbiology that stimulate and support plants to have improved growth and higher yields. He is a career master consultant in modern sustainable agriculture who brings proven techniques of soil fertility, applied soil ecology, plant nutrition and plant health--including biological control of common pests and diseases. He has extensive international experience in crop production and planning of large-scale biodiesel and biomass projects in Mexico, Nicaragua, Panama, Mozambique, Cambodia, and Ghana.

COMPANY FINANCIALS. Post the completion of its IPO and acquisition of initial businesses, THC will have operating earnings from two of its acquired businesses – Dragon Vision Ltd and Crystal Mountain Manufacturing. The figures below provide the latest P&Ls for these two businesses.

Figure 2: Dragon Vision financial performance

DRAGON VISION LIMITED P&L (AUD)	Year-end 31-Mar-15	Year-end 31-Mar-16	YoY Chg	6-mths to 30-Sep-15	6-mths to 30-Sep-16	YoY Chg
Revenue	1,197,157	1,048,667	-12.4%	334,710	474,057	41.6%
Cost of goods sold	973,666	860,938	-11.6%	302,222	408,578	35.2%
Gross Profit	223,491	187,729	-16.0%	32,488	65,479	101.5%
Other income	75,155	26,678	-64.5%	18,832	2,020	-89.3%
Other net gains/(losses)	-6	-115	1816.7%	8	0	-100.0%
Total Operating Expenses	87,840	29,193	-66.8%	13,241	7,024	-47.0%
Operating Earnings (PBT)	210,800	185,099	-12.2%	38,087	60,475	58.8%
Tax expense	0	0		0	0	
Underlying NPAT	210,800	185,099	-12.2%	38,087	60,475	58.8%
Key trading metrics:						
GP Margin	18.7%	17.9%		9.7%	13.8%	
Operating Earnings Margin	17.6%	17.7%		11.4%	12.8%	
Tax Rate	0.0%	0.0%		0.0%	0.0%	
Profit Margin	17.6%	17.7%		11.4%	12.8%	

Source: Company, RedLeaf Securities

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Figure 3: Crystal Mountain Manufacturing financial performance

CRYSTAL MOUNTAIN MANUFACTURING INC P&L (AUD)	Year-end 31-Dec-14	Year-end 31-Dec-15	YoY Chg	9-mths to 30-Sep-15	9-mths to 30-Sep-16	YoY Chg
Revenue	1,473,982	1,441,852	-2.2%	1,043,220	1,613,533	54.7%
Cost of goods sold	1,176,052	976,783	-16.9%	708,718	1,103,019	55.6%
Gross Profit	297,930	465,069	56.1%	334,502	510,514	52.6%
Wages and benefits	100,870	142,215	41.0%	101,562	115,230	13.5%
Freight	63,233	59,780	-5.5%	43,200	55,075	27.5%
Rent	57,263	29,778	-48.0%	21,649	25,665	18.6%
Professional fees	53,789	14,412	-73.2%	11,051	24,309	120.0%
Licences, dues and fees	6,523	9,770	49.8%	6,992	13,717	96.2%
Duty and brokerage fees	21,418	15,025	-29.8%	11,368	14,827	30.4%
Interest and bank charges	14,584	17,966	23.2%	14,015	11,158	-20.4%
Insurance	12,251	7,027	-42.6%	9,178	10,323	12.5%
Bad debts	4,361	401	-90.8%	0	9,798	material
Other expenses	51,040	36,183	-29.1%	22,633	28,682	26.7%
Total Operating Expenses	385,332	332,557	-13.7%	241,648	308,784	27.8%
Operating Earnings (PBT)	-87,402	132,512	material	92,854	201,730	117.3%
Tax expense	-10,949	14,410	material	12,476	27,433	119.9%
Underlying NPAT	-76,453	118,102	material	80,378	174,297	116.8%
Key trading metrics:						
GP Margin	20.2%	32.3%		32.1%	31.6%	
Operating Earnings Margin	-5.9%	9.2%		8.9%	12.5%	
Tax Rate	12.5%	10.9%		13.4%	13.6%	
Profit Margin	-5.2%	8.2%		7.7%	10.8%	

Source: Company, RedLeaf Securities

VALUATION. Given THC has operating segments with earnings (Figure 2 & 3) and has outlined a target to achieve revenue of greater than A\$15m and NPAT of A\$3m by 2018 (that is NPAT margin of greater than 20%), we use a DCF valuation to arrive at our price target. Here are our key assumptions: THC achieves revenue of A\$15m and EBIT of A\$3.6m by FY18; we assume long-term EBIT margins of ~36%; expect the company to continue growing revenue at high double-digit rate due to new markets being opened up; assume tax rate of 22% as most of the revenue will be derived from overseas markets; and WACC of 15% (assume no debt in the capital structure). We arrive at a valuation and price target of A\$0.48. We must note this gives no valuation to any upside from THC's R&D program, which under the current valuation, investors are essentially getting for free.

Figure 4: DCF valuation

Firm Value (\$AUD)	89,964,021.5
Less: Net Debt	(7.0)
Equity Value (\$AUD)	89,964,028.5
# Shares Outstanding (shares + options + performance)	187,800,000
Equity Value Per Share (AUD)	\$0.48
Currency Impact	1.0000
Equity Value Per Share (AUD)	\$0.48

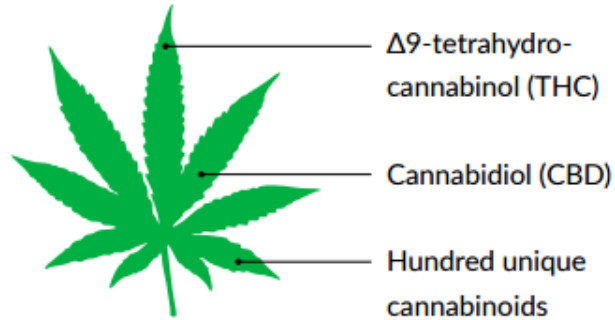
Source: RedLeaf Securities estimates

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What is medicinal cannabis?

Cannabis is not a single chemical but is reported to have over one hundred unique chemicals which are believed to have medical benefits. These chemicals are called cannabinoids. The most relevant components of cannabis, which hold significant health benefits, are Cannabidiol (CBD) and tetrahydrocannabinol (THC).

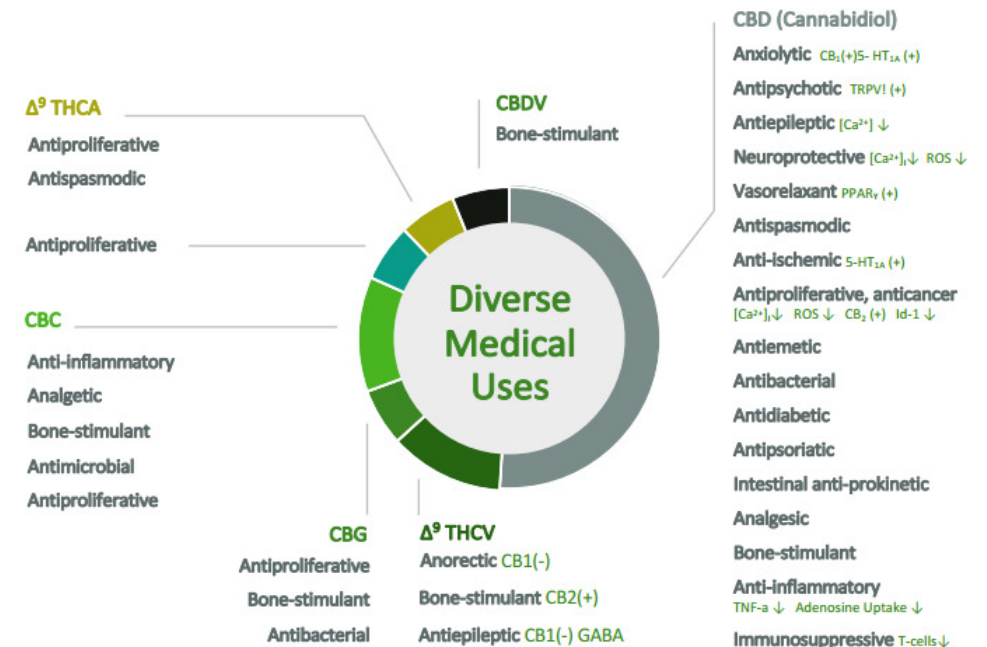
Figure 5: Key components of the cannabis plant



Source: MGC whitepaper

CBD is considered to have a wider scope of medical applications than tetrahydrocannabinol (THC), and with more appealing treatment options for patients seeking anti-inflammatory, anti-pain, anti-anxiety, anti-psychotic, and/or anti-spasm effects without any psychoactive effects.

Figure 6: Cannabis medical applications



Source: THC

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Medicinal cannabis refers to the use of the cannabis plant in the treatment of diseases and symptoms, such as chronic pain, chemotherapy induced nausea, multiple sclerosis symptoms, epilepsy and post-traumatic stress disorder (PTSD).

Multiple Sclerosis (MS). Initial research from recently published whitepapers suggest the use of cannabis oil everyday can help multiple sclerosis sufferers return some normality to their lives. MS sufferers experience pins and needles, electric shocks, nerve pain impacting ability to walk and loss of sensation.

Epilepsy. According to the World Health Organisation (WHO), epilepsy is one of the most common neurological diseases. According to research, 25,000 people are diagnosed with epilepsy each year, which often include children.

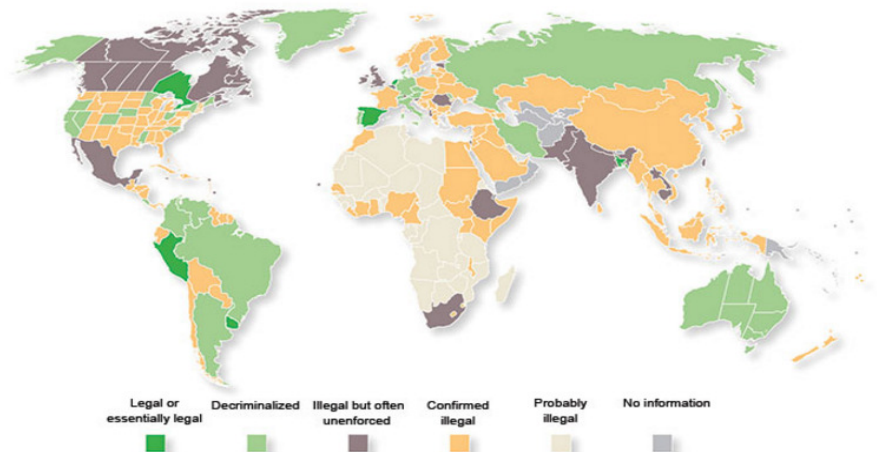
Chronic pain. Anecdotal stories suggest sufferers of severe chronic pain have greatly benefited from using medicinal cannabis, which allowed them to sleep better and resulted in an improved diet.

In recent years, the largest hurdle marijuana has faced is the negative connotation or reputation (illegal and recreational drug use) that was associated with it. However with research and clinical trials in train along with increased community education, the medical fraternity and wider community are beginning to appreciate it as an effective medical treatment.

Global view on cannabis...from a legal standpoint

In this section, we provide a quick overview of what the legal landscape looks like in key regions. The map below provides a quick snapshot of where cannabis is legal.

Figure 7: Where is cannabis legally accepted?



Source: MMJ

Australia. The use of cannabis is illegal in Australia; however certain amendments were made to the *Narcotics Drugs Act 1967* which allowed the production of cannabis for medical or scientific purposes. Recently, the Australian government approved

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companies to import, store and sell the drug to meet demand, which provides another validation for its use and sets the tone for the future. Both NSW (1 Aug 2016) and QLD (1 March 2017) have passed legislation for doctors to be able to supply medicinal cannabis.

Israel. Israel is among the leaders in the world, with a well developed and regulated cannabis sector and research programs into medical cannabis.

USA. We would regard the US market among the global leaders in driving the commercialisation of medicinal cannabis. From our understanding, the use of marijuana for medical purposes is legal in 29 states, with California leading the way with respect to medicinal cannabis patients, however it remains illegal at the US Federal level. Other states are also looking to pass laws which will allow CBD only medical cannabis regulations. According to various industry commentators, by 2020 up to 40 states in the US could have favourable laws. Legislation is being introduced to classify marijuana at Schedule II drug (as opposed to Schedule I drug – e.g. heroin) so that it is accepted for medical use and exempted from federal prosecution.

Canada. Under its current regulation, Marijuana for Medical Purposes Regulations (MMPR) – companies can produce marijuana for commercial purposes if they comply with stringent safety and quality demands. Under this regime, around 23 licences have been issued, which will allow the producer to supply directly to patients. Health authorities in Canada estimate that the total number of patients using medicinal cannabis is likely to grow to 450,000 by 2024 (versus current approximately 55,000).

Europe. European regulation as a whole is still in its infancy stage. It is likely to come as no surprise to those who are well travelled that Amsterdam in Netherlands could be called out as the pioneer in the region. The main supplier to the European region is a Dutch company called Bedrocan. However, others nations are also looking to deploy cannabis programs: the Czech Republic is launching cannabis programs for growers; Italy is looking to grow supply in secured locations. The main delivery method is via prescriptions from neurologists and distributed *via* regulated pharmacies or dispensaries. The European market is estimated to grow by 15% per annum to 2018.

Key risks facing the industry

We see the following as the biggest risks to the sector: **(1)** illegal use of the drug and its proliferation leading to tighter regulation impacting the earnings of the wider legal sector (*illegal impact*); **(2)** illegal use of the drug having a negative impact on the wider community leading to negative sentiment towards the drug (*social impact*); **(3)** clinical trials leading to adverse results or lack of efficacy, which may show more harm than good by its applications; **(4)** new capital allocation to the sector will see competition rise and this could also result in un-economical companies/business models taking advantage of investor enthusiasm in the sector.

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