

NEEDHAM 20TH ANNUAL GROWTH CONFERENCE

TICKER: NANO.L

18th January 2018

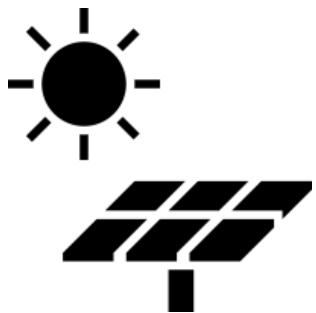


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It should be noted that past performance cannot be relied on as a guide to future performance. This presentation contains forward-looking statements with respect to Nanoco's plans and objectives regarding its financial conditions, results of operations and businesses.

The financial information referenced in this presentation does not contain sufficient detail to allow a full understanding of Nanoco's results. For more detailed information, the entire text of the interim results announcement for the full year ended 31 July 2017, can be found on the Investor Relations section of the Nanoco website (www.nanocogroup.com).

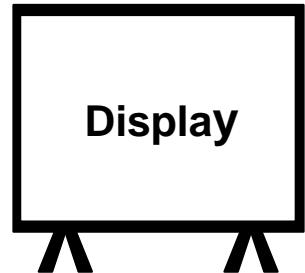
COMPANY OVERVIEW



Solar



Life sciences



Display

NANOCO
GROUP PLC



Nano-materials

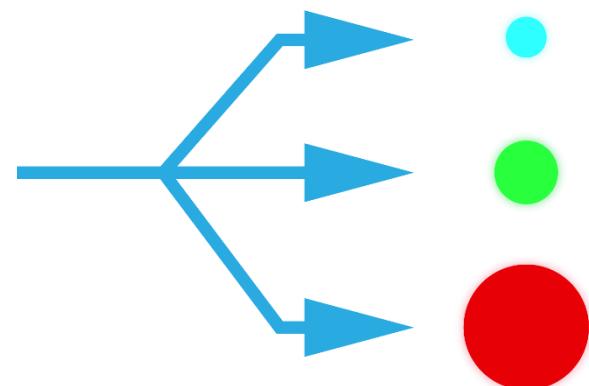
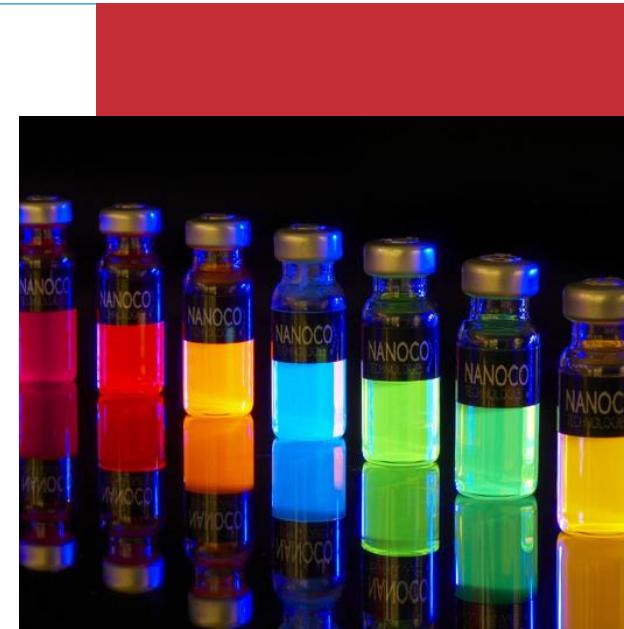


Lighting

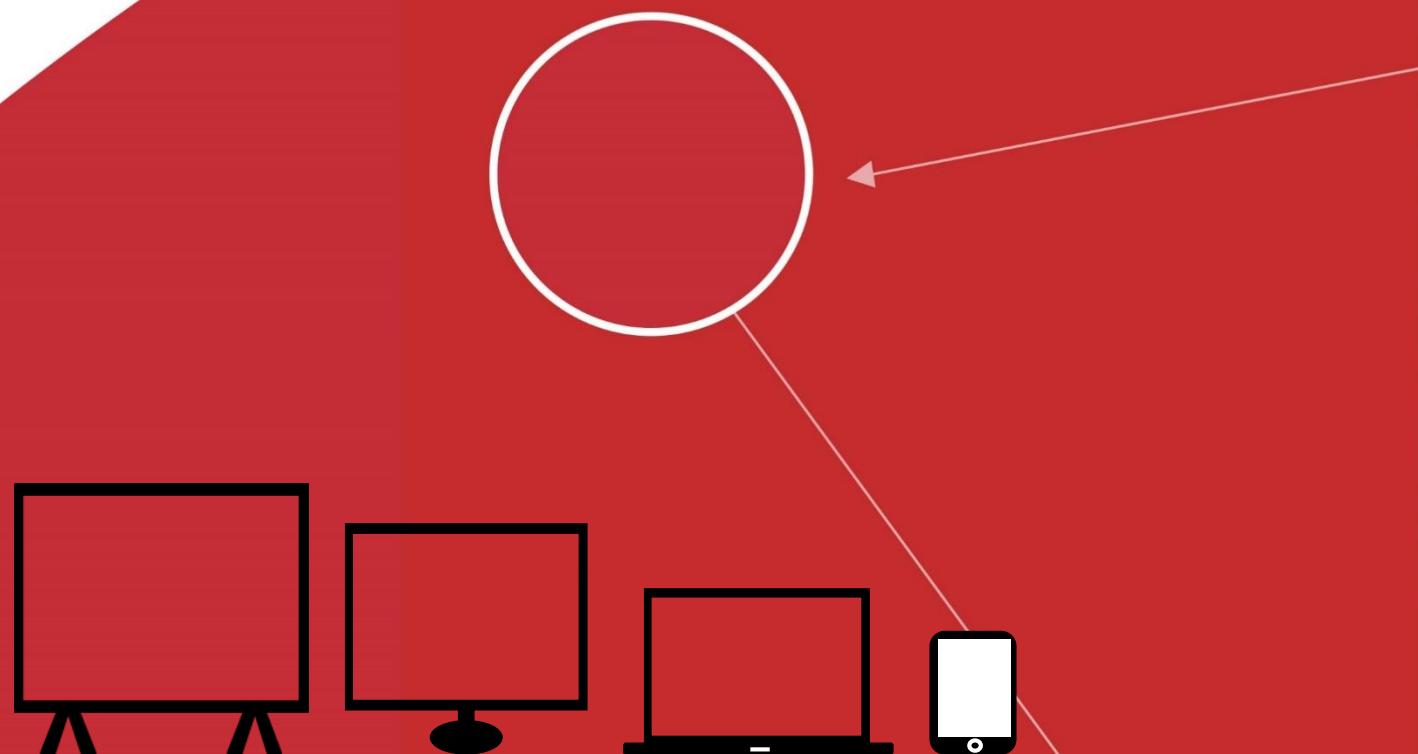
- Pioneer and world leader in the development and production of cadmium-free quantum dots (CFQDs)
- Scalable "platform technology" with multiple markets and product applications
- Extensive patent portfolio, c.600 patents granted / pending
- Large addressable markets
- Main focus to date is the display market; other markets now showing encouraging progress
- R&D in Manchester
- Manufacturing in Runcorn
- Listing on the London Stock Exchange "FTSE", Ticker: NANO.L

WHAT IS A QUANTUM DOT?

- Tiny particles of a fluorescent semiconductor material
- 1 to 10 nanometers in diameter
- Size of the quantum dot determines the spectrum of light emitted
- Smaller = blue; larger = red
- Can be tuned to light beyond visible light into the Infra-red or ultra-violet parts of the spectrum



**Established
technology with
a wide range of
commercial
applications**

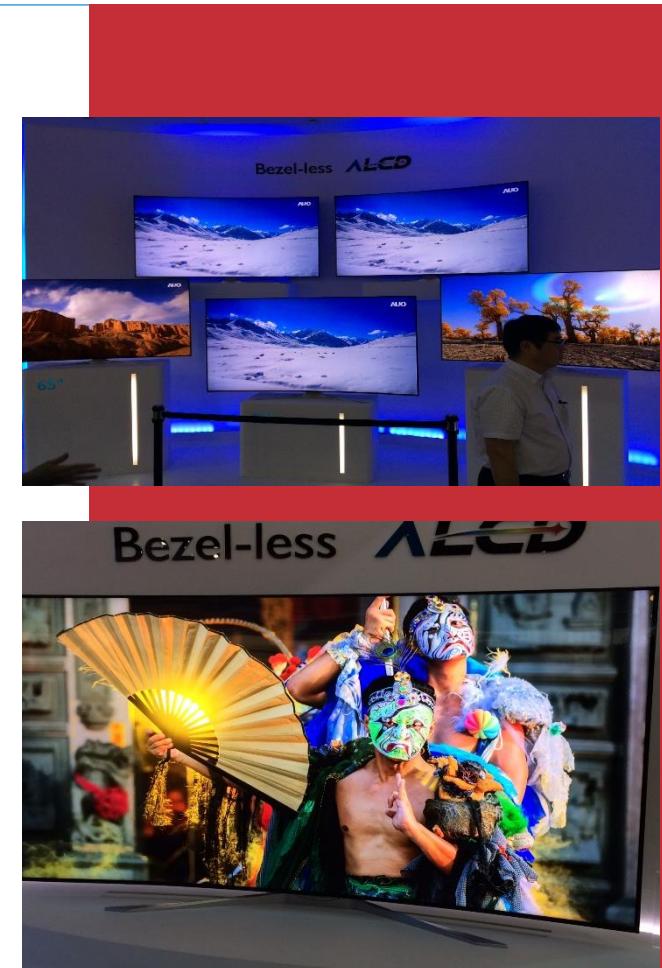


DISPLAY



GROWING DISPLAY MARKET OPPORTUNITY

- Benefits of CFQDs
 - Enables Wide Color Gamut (WCG) displays for 4K, UHD, HDR, gaming, streaming, photos
 - Integrated into existing LCD technology
 - Consistent and accurate colours across product range
 - Improved peak brightness and contrast
 - Lightning fast response times and refresh rates
- Samsung leading the way; other OEMs are starting to follow with the recent European Commission's decision to ban cadmium providing a catalyst
- 3.2m CFQD TVs sold in 2016
- IHS report that 26m displays will be QD equipped by 2021 and 90% (24m) will be cadmium-free
- 24m CFQD Displays would require c. 24 tonnes of CFQDs assuming 1g per m² of film; supply today limited to three manufacturers



AUO demonstrating 65", 75" and 85" UHD HDR cadmium free QD TVs at Touch Taiwan in September 2017

MULTI-CHANNEL STRATEGY TO DISPLAY SUCCESS

Nanoco Non-exclusive Licensees



TECHNOLOGY

NANOCO
GROUP PLC



TECHNOLOGY



- Licence fee, royalties on sales of Merck produced product
- Merck buying Runcorn produced CFQDs
- Technology transfer complete
- Merck evaluating large scale production options

- Revenue from Runcorn produced CFQD resin + royalty
- Focus on Chinese and Taiwanese display OEMs
- 2nd film coating line commissioned

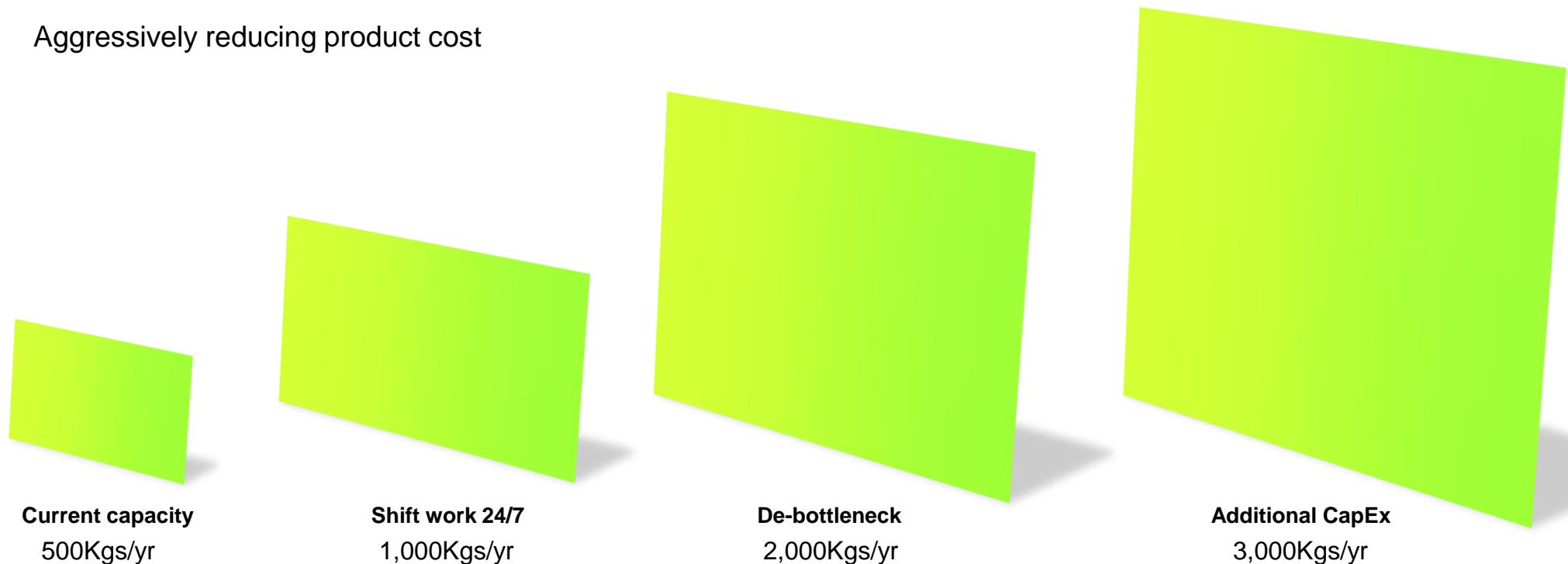
- Royalty on Dow sales
- South Korean factory producing & selling commercial quality CFQDs

Potential Display Customers



EXPANDING CAPACITY TO MEET FORECAST DEMAND

- Runcorn ready to fulfil commercial orders
- 10x increase in capacity through innovative technology improvements; cost reduced significantly
- Enables rapid transition for new materials from lab to production
- Awarded ISO 9001 certification in December 2016
- Capacity of 1000 Kgs/year with 24/7 operation
- Plan in place to ramp to c. 3000 Kgs/year on existing site with investment
- Aggressively reducing product cost



- AUO showed line of next generation 8k and 4k TVs equipped with Nanoco CFQD Fine Colour Film at Touch Taiwan
- Film produced from CFQD's produced by Nanoco in the UK and coated onto film by Wah Hong in Taiwan



65" CFQD 4K TV



85" CFQD 8K TV

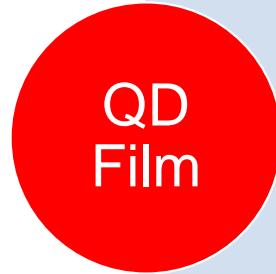


75" CFQD 4K TV

CONTINUOUS INNOVATION CRITICAL TO SUCCESS

Nanoco has led the development of CFQD technology with rapid improvements in quality, performance and yield

Diminished R&D resource needs to be reinstated to keep up and stay ahead of competition and deliver improved technology



QD
Film

- Continuous improvement in CFQD quality to meet display demands
- Aggressive reduction of COGS

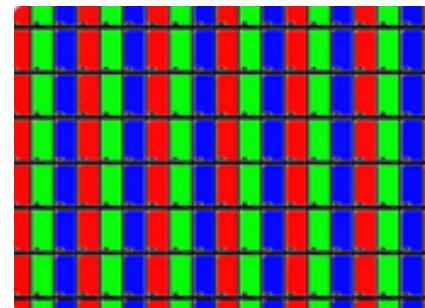
Current technology



QD
Colour
Filter

- QD enabled colour filters for LCD TVs
- Improved colour gamut, brightness and viewing angle

3 – 5 years away



QLED

- EL QD
- Nanoco / Kyulux agreement
- Direct competitor to OLED

5+ years away



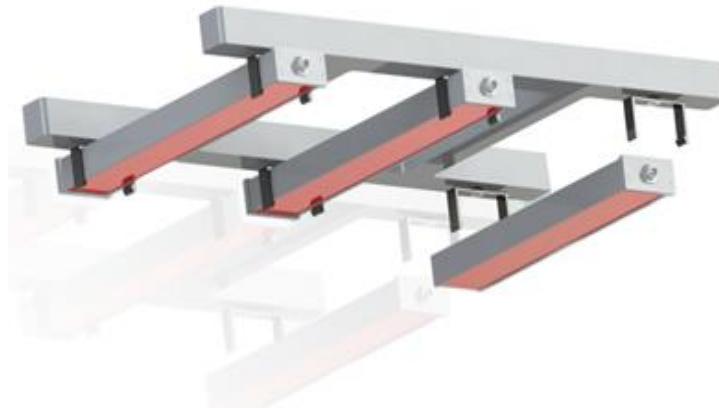


OTHER MARKETS



HORTICULTURAL LIGHTING

- Focus on horticultural and photodynamic therapy
- Nanoco lights won CES 2017 Innovation Award
- Tune light to match the ideal growing conditions for plants
- Commercial Supply and License Agreement with the Sports Turf Research Institute



Horticultural lighting to enhance seed germination and seedling growth

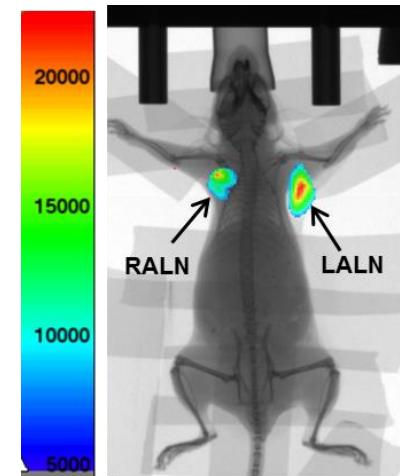


MEDICAL DEVICE / LIGHTING

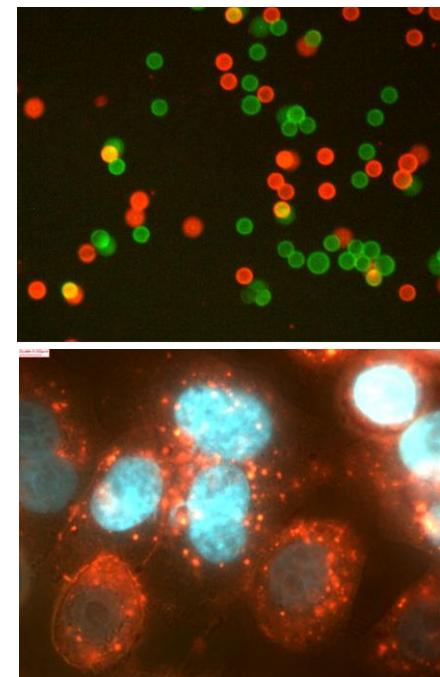


NANOCO LIFE SCIENCES – RAPID PROGRESS

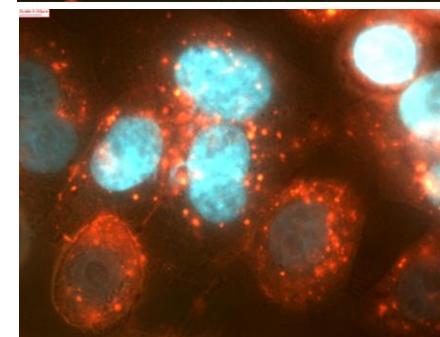
- Focus on in vivo imaging, diagnostic and targeted therapy of cancer
- Partnership in place with University College London, University of Manchester and University of Nottingham
- Positive results shown including:
 - Uptake in sentinel lymph nodes of mouse and rat models
 - No signs of toxicity were observed in rodents after high IV doses
 - Vastly improved tumour demarcation when compared to industry standard dyes (ICG)
 - Conjugation to monoclonal antibodies (i.e. breast cancer drug Herceptin)
 - Enhanced 5-ALA labelling and PDT
- Recent award of a Innovate UK Grant has ensured that the work is fully funded
- Strong IP portfolio on functionalization and novel applications
- Extensive QC system in place
- Recently signed contract with Covance to conduct GMP toxicology testing



In vivo photoluminescence images of the 650 emissive Vivodots™ nanoparticles following subcutaneous injection into the paws of female Balb/c mice.



Biotinylated spheres labelled with streptavidin-Vivodot™ conjugates



4T1 HER2 positive breast cancer cells labelled with Herceptin-Vivodot™ conjugate

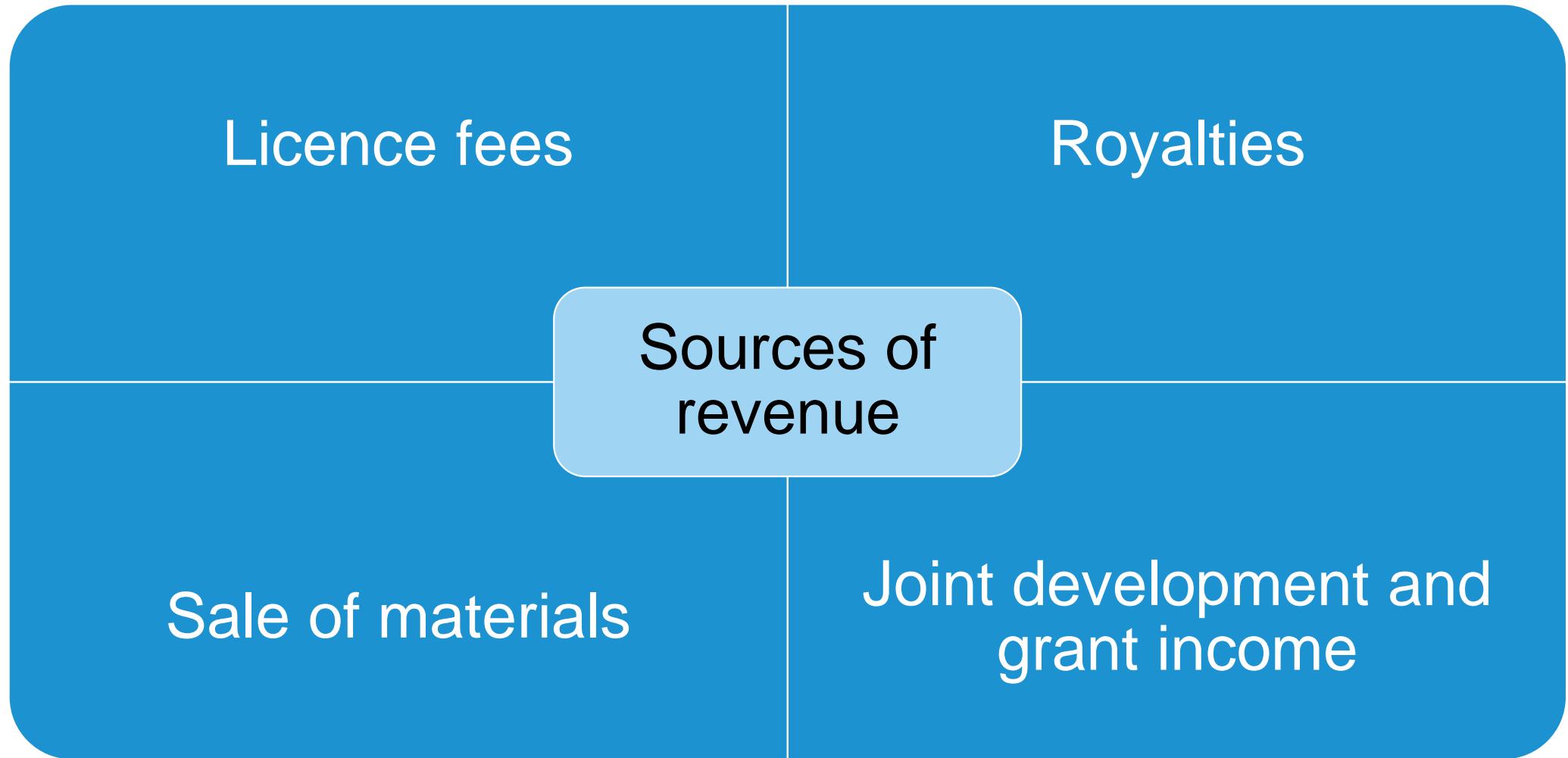
2D / NANO-MATERIALS

- Nano material development is a core competency of Nanoco
 - Complex particle design and development
 - Scale up
 - Manufacturing
- 2D material development programme
 - Partnership between Nanoco and University of Manchester, National Graphene Institute
 - Collaboration between Nobel Laureate Prof. Kostya Novoselov and Nanoco
 - Develop and commercialise future generations of materials
 - Funded through collaboration agreement
- Infrared, electroluminescent and other materials
 - IR materials for range of near term applications
 - New generation of electroluminescent QDs which compete directly with OLED materials for new generations of display
 - Complex combination of materials in partnership with world leading technology companies, e.g. Kyulux

FINANCIAL REVIEW



BUSINESS MODEL



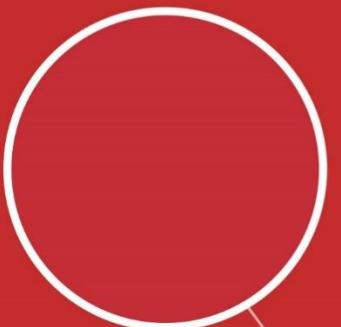
FINANCIAL HIGHLIGHTS (31ST JULY 2017)

	2017 £m	2016 £m	Movement £m
Revenue and other income	1.6	0.8	0.8
Billings	1.1	1.9	(0.8)
R & D investment	(5.5)	(6.0)	0.5
LBITDA	(9.7)	(11.5)	1.8
Loss after tax	(9.1)	(10.6)	1.5
Cash and short term deposits	5.7	14.5	(8.8)
R &D tax credit	1.8	2.0	(0.2)
Deferred revenue	(0.7)	(1.2)	(0.5)
Net assets	10.4	18.8	(8.4)
	No	No	No
Average number of employees during the year	110	129	(19)
Patents granted/pending at year end	600	467	133

Post balance sheet event:

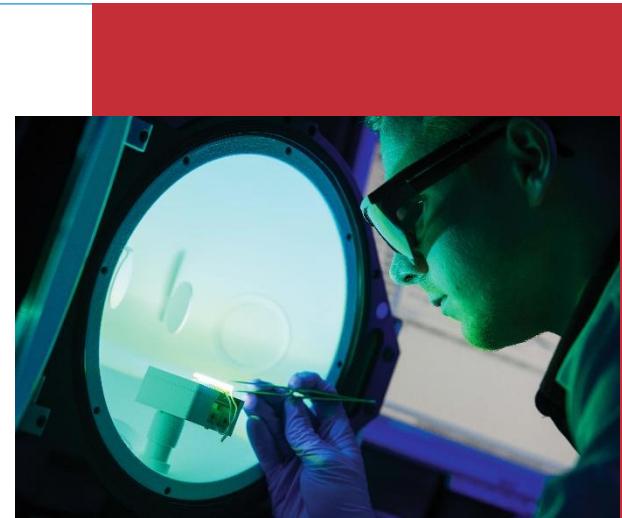
- Placing of new shares with net funds raised of £8 million

SUMMARY



SUMMARY

- Platform technology with multiple, large addressable markets
- Extensive and growing patent portfolio
- Efficient mass production process with own manufacturing capability established and scaled
- Display – first commercial market
 - Hybrid commercial model established with multiple routes to market via own manufacturing and licensees
 - First display sales orders achieved and substantial pipeline of commercial opportunities
 - Products successfully displayed at Touch Taiwan and CES
 - Next gen products in development
 - Supply chain built
- Other markets – opportunities emerging in Lighting, Life Sciences and Medical Devices
- Cost base significantly reduced and balance sheet strengthened



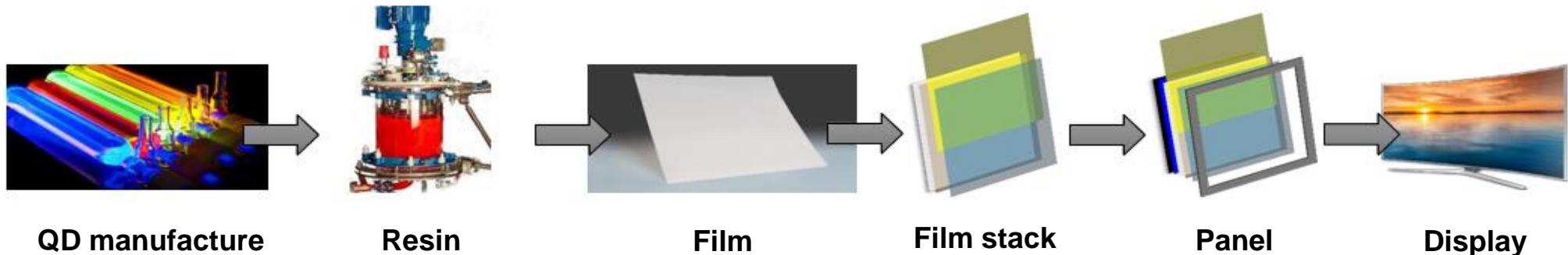
QUESTIONS

Q&A

APPENDICES



BENEFITS OF CFQD® QUANTUM DOT FILM



Better Colour Gamut

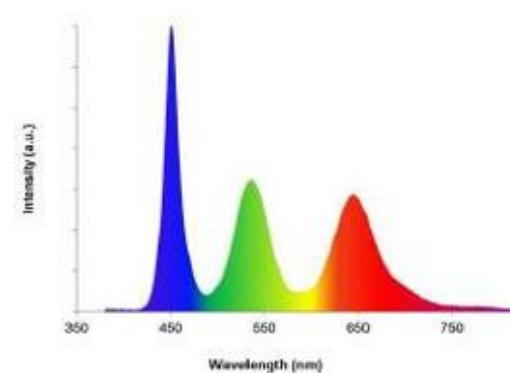
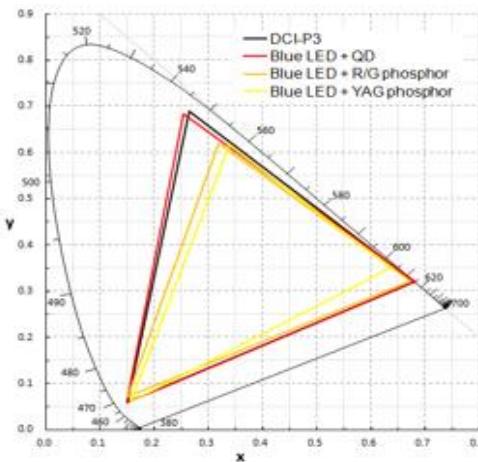
- Much improved colour saturation
- Improved colour enhancement over LCD → similar to OLED

Energy Efficient

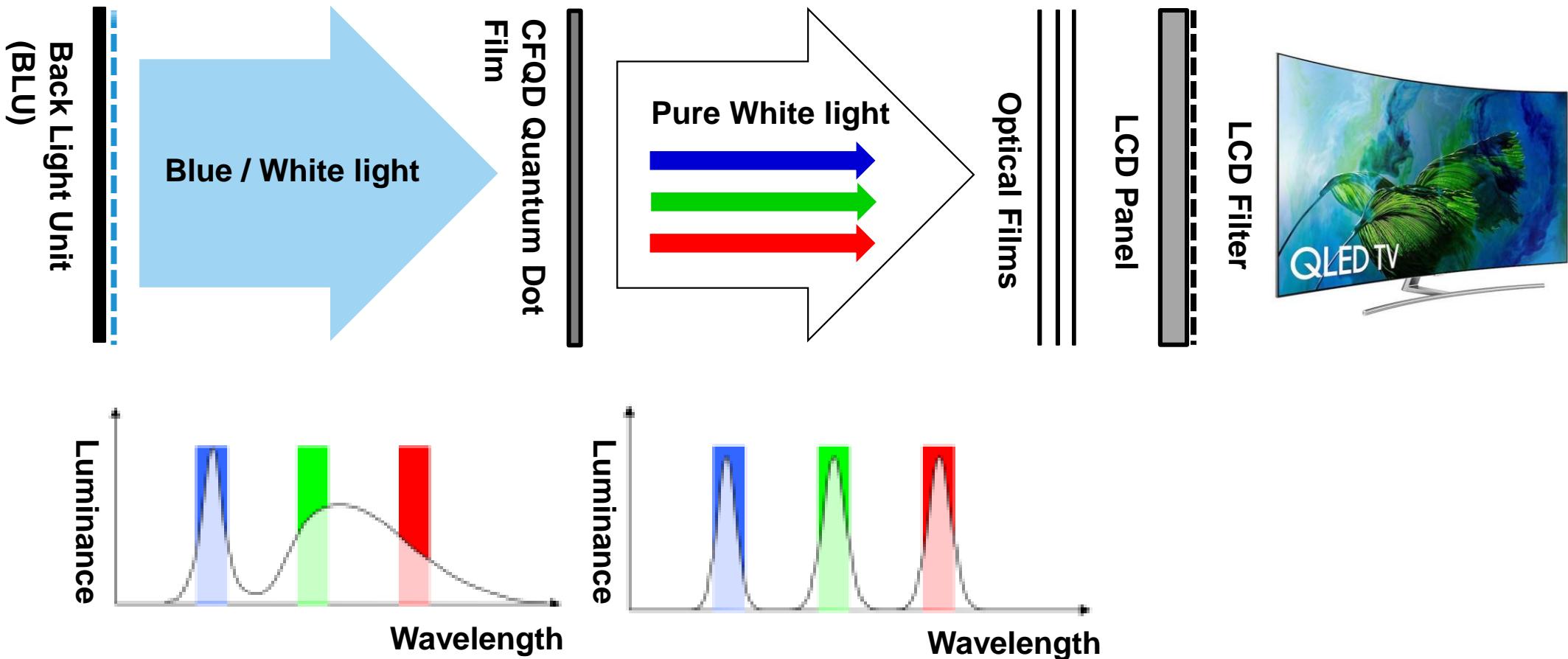
- Narrow bandwidth = more light extraction through colour filters
- Enables use of blue LED instead of less efficient white LED

Minimal Process

- Uses existing LCD manufacturing infrastructure
- Uses existing LCD supply chain



BREAKDOWN OF A QD LCD DISPLAY



Emits light –
much more blue
than green and
red

Light energises
the quantum
dots in the film

Quantum dots
emit precise
green and red
colours

LCD panel creates the
image through
polarised shuttering of
pixels

Each pixel / shutter is paired
with a coloured filter to
remove all but the red, green
or blue light. Filters may be
replaced by QDs in the
future.

WHAT PEOPLE ARE SAYING ABOUT QD DISPLAYS

“A TV screen that is jaw-droppingly good”

- *The Independent*



“May be the holy grail of gaming displays”

- *Forbes*

acer
PREDATOR



“TVs are entering a new era in 2017”

- *Trusted Reviews*



“CF791’s pitch-perfect colors change the game for ultrawides”

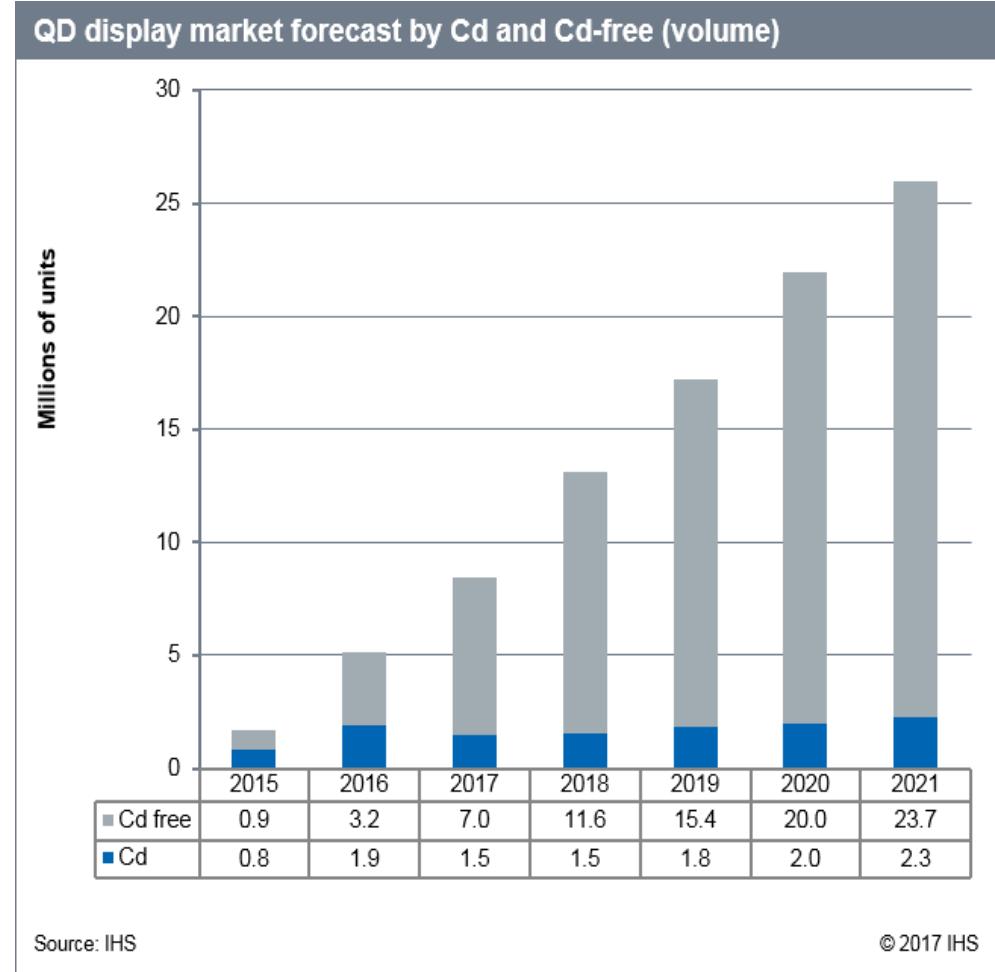
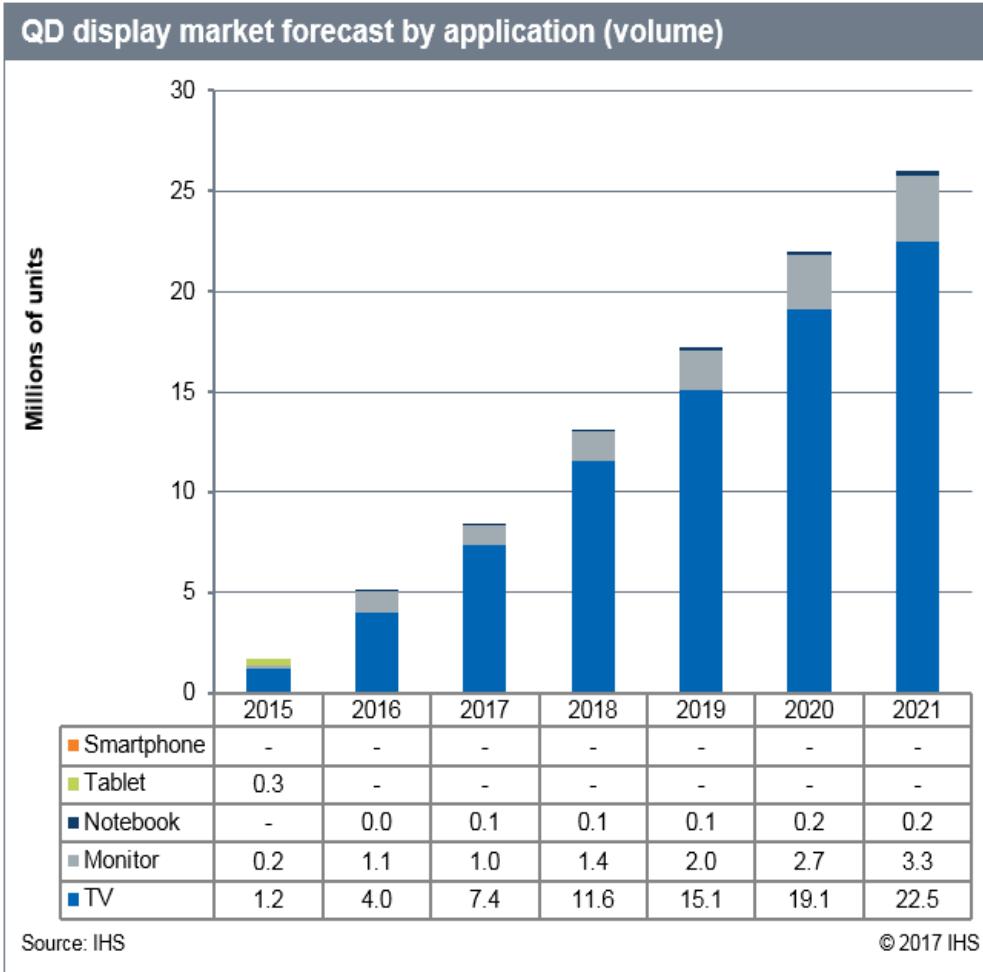
- *Monitornerds.com*



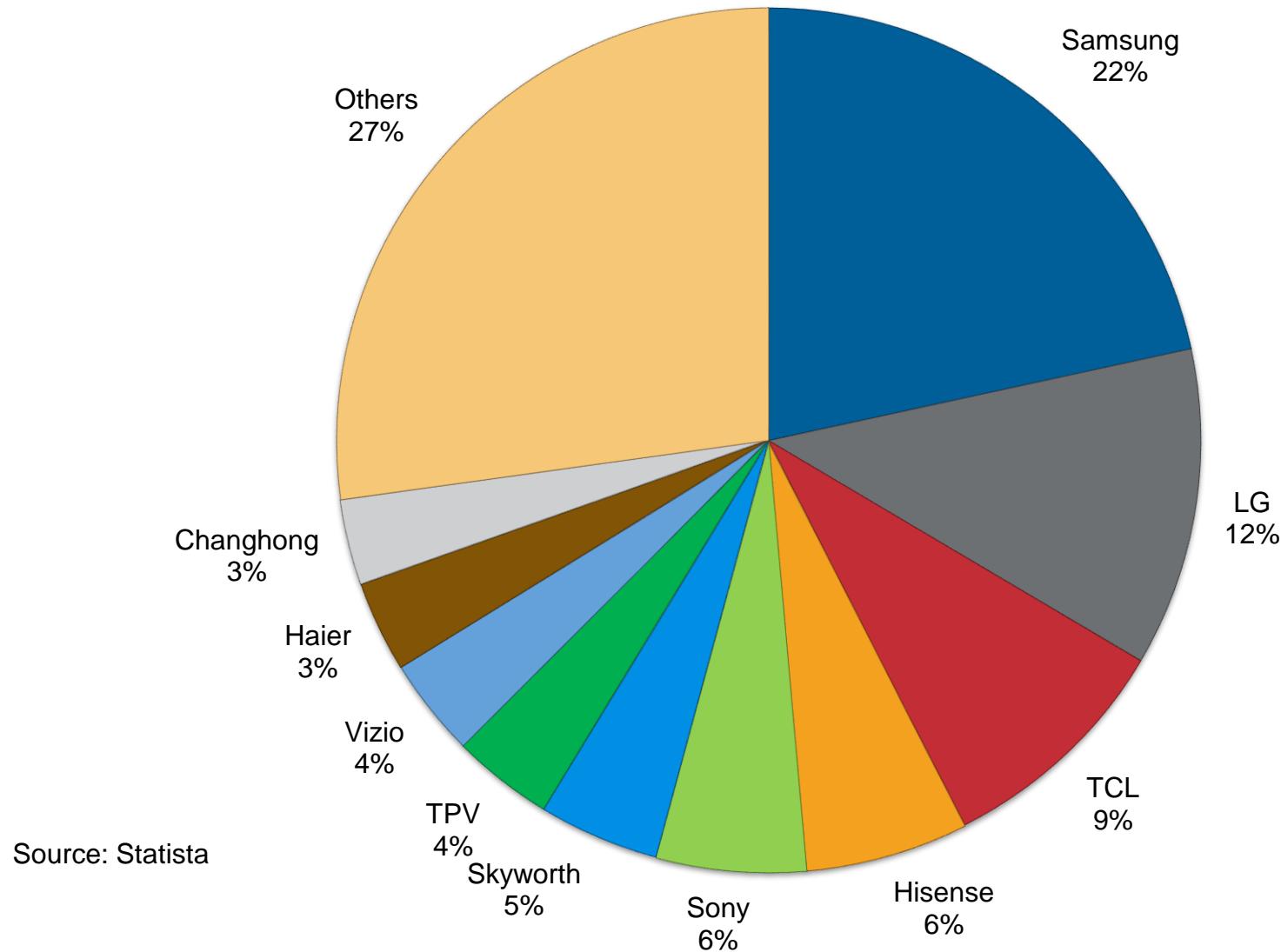
Digital Trend

★★★★★ 4.9 out of 5

CADMIUM-FREE TO DOMINATE RAPIDLY GROWING MARKET



LCD TV MARKET SHARE 2016



RoHS UPDATE

- The European Commission (EC) has completed a lengthy review of the use of cadmium-based quantum dots in displays and LED lighting, following the rejection by the European Parliament in 2015 of their previous proposal to extend their use
- The report from their consultants (Oeko-Institute) recommended a further 3 year extension, but after concern from Member States and environmental NGOs the EC decided to end their use in LED lighting and give the minimum period of 2 years only for use in displays
- Delegated Act passed into law on November 2017
- Cadmium-based quantum dots in displays will be effectively banned from 31st October 2019, since the normal RoHS limit of 100ppm will apply once the exemption ends
- Nanoco expects that regulations in other key markets, including China, will fall in line with RoHS
- Meanwhile, our contacts with display companies indicate that most already accept the need for new display products to be cadmium-free - especially the world leading brands in both television, computer monitor and laptop displays



Market leader Samsung promotes their cadmium-free quantum dots QLED TV range at CES 2017

LEADERSHIP

Dr Christopher Richards

Non-Executive Chairman

- CEO, Non-Executive chairman, Arysta LifeSciences
- 20 years of increasing management roles at Syngenta
- Executive chairman of Plant Health Care
- NED of Origin Enterprises plc

Dr Michael Edelman

CEO

- Led spin-out of Nanoco from University of Manchester
- GE/Bayer JV, founded www.yet2.com Europe, commercial director Colloids Ltd, Brunner Mond, ICI

Dr Nigel Picket

Co-founder & CTO

- Inventor of Nanoco's key patented scale-up technology
- Leading expert on semi-conducting nano-crystals
- Japanese Government, St. Andrews University, Georgia Tech

David Blain

CFO

- Experienced Quoted Company CFO, Renovo, Drew Scientific, Price Waterhouse

Keith Wiggins

COO

- Increasing business & corporate leadership roles over years at Dow and ICI
- Business builder; former CEO of Haltermann, MD Dow Northern Europe, director roles speciality businesses located in USA, Germany, Switzerland, Hong Kong and United Kingdom

Brendan Cummins

Senior Non-Executive

- 40 years of industry experience mostly with Ciba Geigy, last role was CEO of Ciba and led the sale of Ciba to BASF
- Board of US Headquartered, Ashland Inc., Chair of Governance and Nominations Committees and member of Audit Committee
- Board of Perstorp AB, Sweden

Dr Alison Fielding

Non-Executive

- Director of Strategy and IP Impact at IP Group
- NED of Getech Group plc
- Astra Zeneca, followed McKinsey & Co, then co-founded Techtran Group Limited which was acquired by IP Group in 2005 and subsequently held the role of director and COO at IP Group
- Board member and advisor of several early stage and quoted IP Group backed technology companies

STATEMENT OF COMPREHENSIVE INCOME

	2017 £'000	2016 £'000
Revenue	1,326	474
Cost of sales	(257)	(177)
Gross profit	1,069	297
Other operating income	281	284
Operating expenses		
Research and development expenses	(5,508)	(5,995)
Administrative expenses	(6,784)	(7,367)
Operating loss	(10,942)	(12,781)
- before share-based payments and the costs of the move to the Main Market	(10,700)	(12,511)
- share-based payments	(242)	(270)
Finance income	44	193
Finance expense	-	(12)
Loss on ordinary activities before taxation	(10,898)	(12,600)
Taxation	1,788	1,993
Loss on ordinary activities after taxation for the year and total comprehensive loss for the year	(9,110)	(10,607)
Loss per share		
Basic and diluted loss for the year	(3.82)p	(4.47)p

STATEMENT OF FINANCIAL POSITION

	31 July 2017 Group £'000	31 July 2017 Company £'000	31 July 2016 Group £'000	31 July 2016 Company £'000
Assets				
Non-current assets				
Tangible fixed assets	865	-	1,260	—
Intangible assets	2,619	-	2,423	—
Investment in subsidiaries	-	66,564	—	66,322
	3,484	66,564	3,683	66,322
Current assets				
Inventories	188	-	208	—
Trade and other receivables	669	47,957	2,045	42,988
Income tax asset	1,837	-	1,970	—
Short-term investments and cash on deposit	-	-	5,000	5,000
Cash and cash equivalents	5,706	4,670	9,511	4,057
	8,400	52,627	18,734	52,045
Assets held for resale	535	-	-	-
Total assets	12,419	119,191	22,417	118,367
Liabilities				
Current liabilities				
Trade and other payables	1,318	-	2,443	—
Financial liabilities	-	-	32	—
Deferred revenue	102	-	531	—
	1,420	-	3,006	—

STATEMENT OF FINANCIAL POSITION

	31 July 2017 Group £'000	31 July 2017 Company £'000	31 July 2016 Group £'000	31 July 2016 Company £'000
Non-current liabilities				
Other payables	-	450	—	450
Deferred revenue	552	-	648	—
	552	450	648	450
Total liabilities	1,972	450	3,654	450
Net assets	10,447	118,741	18,763	117,917
 Capital and reserves				
Issued equity capital	58,609	136,477	58,057	135,925
Share-based payment reserve	2,957	2,957	2,715	2,715
Merger reserve	(1,242)	-	(1,242)	—
Capital redemption reserve	-	4,402	—	4,402
Retained earnings	(49,877)	(25,095)	(40,767)	(25,125)
Total equity	10,447	118,741	18,763	117,917

STATEMENT OF CASH FLOW

	31 July 2017 Group £'000	31 July 2017 Company £'000	31 July 2016 Group £'000	31 July 2016 Company £'000
(Loss)/profit before tax	(10,898)	30	(12,600)	167
Adjustments for:				
Net finance income	(44)	(30)	(181)	(167)
Depreciation of tangible fixed assets	741	-	991	—
Amortisation of intangible assets	482	-	298	—
Share-based payments	242	-	270	—
Changes in working capital:				
Decrease in inventories	20	-	—	—
Decrease/(increase) in trade and other receivables	1,365	-	(1,143)	—
(Decrease)/increase in trade and other payables	(1,125)	-	503	—
(Decrease)/increase in deferred revenue	(525)	-	1,179	—
Cash outflow from operating activities	(9,742)	-	(10,683)	—
Research and development tax credit received	2,000	-	1,830	—
Overseas corporation tax paid	(79)	-	(7)	—
Net cash outflow from operating activities	(7,821)	-	(8,860)	—

STATEMENT OF CASH FLOW

	31 July 2017 Group £'000	31 July 2017 Company £'000	31 July 2016 Group £'000	31 July 2016 Company £'000
Cash flow from investing activities				
Purchases of tangible fixed assets	(374)	-	(189)	—
Purchases of intangible fixed assets	(1,185)	-	(900)	—
Cash advance to subsidiary	-	(4,980)	—	(11,153)
Decrease in cash placed on deposit	5,000	5,000	15,000	15,000
Interest received	55	41	224	198
Net cash inflow from investing activities	3,496	61	14,135	4,045
Cash flow from financing activities				
Proceeds from issues of ordinary share capital	552	552	—	—
Interest paid	-	-	(12)	—
Loan repayment	(32)	-	(63)	—
Net cash inflow/(outflow) from financing activities	520	552	(75)	—
(Decrease)/increase in cash and cash equivalents	(3,805)	613	5,200	4,045
Cash and cash equivalents at the start of the year	9,511	4,057	4,311	12
Cash and cash equivalents at the end of the year	5,706	4,670	9,511	4,057
Monies placed on deposit at the end of the year	-	-	5,000	5,000
Cash, cash equivalents and deposits at the end of the year	5,706	4,670	14,511	9,057

SHAREHOLDER ANALYSIS (AS AT 16 NOVEMBER 2017)

Name	Shareholding	Percentage
Lombard Odier	57,191,058	20.00
Hargreaves Lansdown Asset Management	24,973,401	8.73
Cogefi Gestion	21,859,271	7.64
Baillie Gifford & Co	18,051,750	6.31
Miton Asset Management	13,870,639	4.85
Dr Nigel Pickett (CTO)	11,112,347	3.89
Killik Asset Management	10,145,590	3.55
Dr Michael Edelman (CEO)	4,931,615	2.07

Notes: The total number of voting rights in the Company is 285,934,927



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