



***SMART SOLUTIONS TO DRIVE THE FUTURE***

**Optical Disc and Solar**

**SINGULUS TECHNOLOGIES AG**

**SINGULUS** 

The logo for SINGULUS TECHNOLOGIES AG. The word "SINGULUS" is written in a bold, blue, sans-serif font. To the right of the text is a red square containing a white, stylized, curved shape that resembles a flame or a drop.

- 2010
  - Start of expanded Solar Strategy
  - Major order for new Thin Film Solar Production System
  - First FAT for Front End System
  - Market share > 90 % in prerecorded Blu-ray Production Systems (excl. Sony)
- 2009
  - First shipment of SINGULAR
- 2008
  - Acquisition of Blu-ray business from Oerlikon
- 2007
  - Acquisition of STANGL
  - Start in the Solar equipment market
  - First revenues in Blu-ray replication lines
- 2006
  - Takeover of majority share in largest competitor HamaTech
- 2004
  - 2<sup>nd</sup> Mastering acquisition
- 2001/2002
  - Acquisition of injection molding and 1<sup>st</sup> Mastering company
- 1997
  - Introduction of DVD Inline Systems
- 1996
  - Introduction of CD Inline Systems
- 1995
  - Start of SINGULUS TECHNOLOGIES

## Overview 2010

- Orders in Solar Segment delayed
- Forecast for 2010 adjusted to € 118 – 125 million (previous € 130 – 135 million)
- Executive Board reevaluates balance sheet assets – depreciation and expenses of 67.8 Mio. €
- Optical disc activities to be centralized in Kahl
- Cost base improves
- Strong growth for Blu-ray achieved
- Order intake and order backlog higher compared to 2009
- Outlook 2011 for Blu-ray favorable
- Pick-up of Solar expected for 2011

# One Time Write-Offs

## No material cash impact

One-offs and expenses of € 67.8 million split up as follows

- Depreciation of tangible and intangible assets € 40.7 million
- Depreciation of capitalized R&D € 7.5 million
- Depreciation of accounts receivables & inventories € 17.3 million
- Other restructuring charges € 2.3 million

# Key Figures – 9 Months

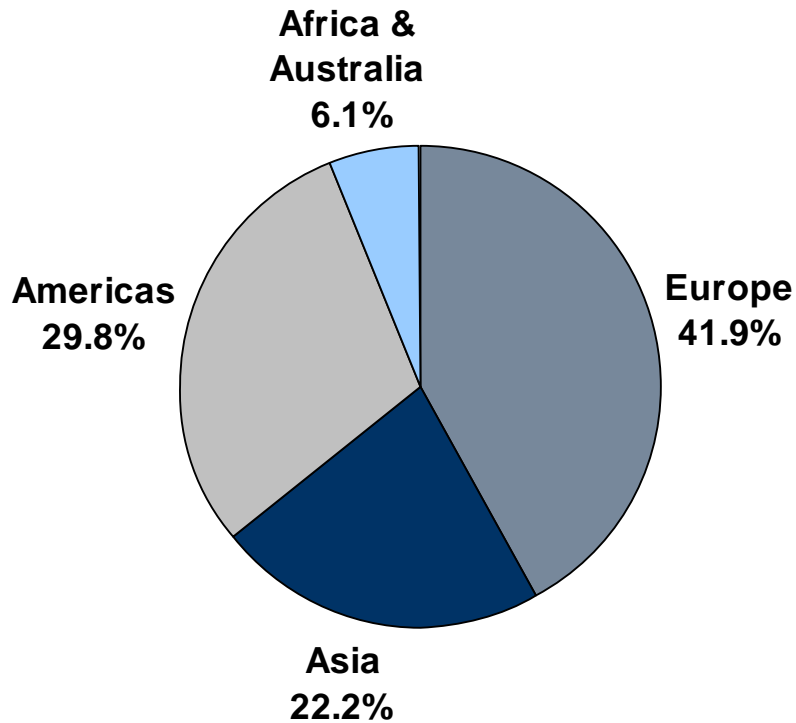
in million €	2008	2009	2010
<b>Gross Revenue</b>	149.9	95.9	81.0
<b>Order Intake</b>	197.5	56.0	97.3
<b>Order Backlog (30.09.)</b>	103.4	30.3	43.7
<b>EBIT</b>	-40.7	-53.3	-80.9
<b>EBIT (operating)</b>	-11.7	-13.9	-13.1
<b>EBITDA</b>	10.9	-28.6	-20.0
<b>EBITDA (operating)</b>	5.0	1.4	0.3
<b>Profit Before Tax</b>	-44.2	-57.8	-84.2
<b>Net Income</b>	-39.5	-55.4	-76.2
<b>Operating-Cashflow</b>	0.2	-1.7	-9.7
<b>Shareholders' Equity</b>	253.8	188.7	105.7
<b>Balance Sheet Total</b>	453.3	335.9	184.5
<b>R&amp;D Expenditures</b>	15.6	8.0	5.2
<b>Employees (30.09.)</b>	764	633	454
<b>Weighted Average Shares Basic</b>	36,946,407	37,232,752	40,092,241
<b>EPS, Basic (in €)</b>	-1.11	-1.49	-1.90

# Solid Balance Sheet

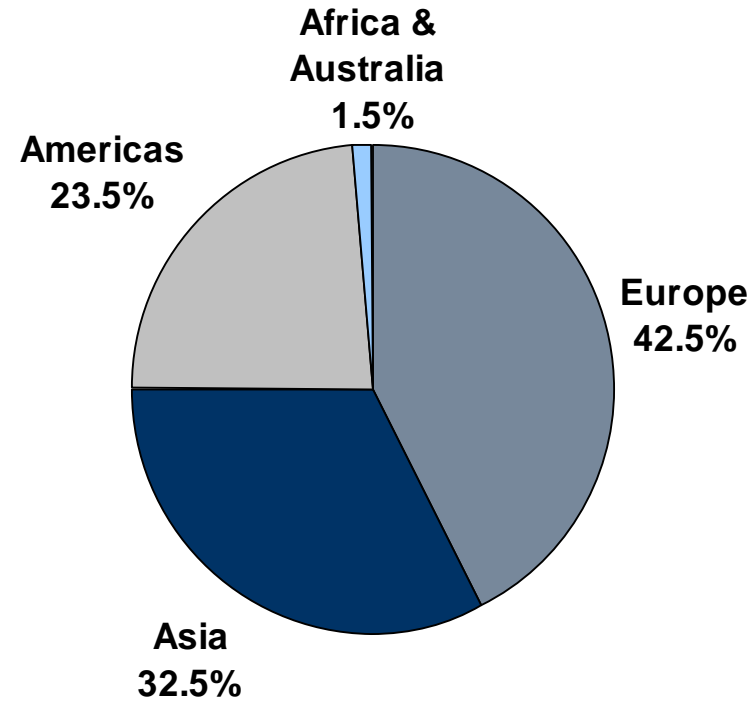
in million €	YE 2008	09/30/2009	09/30/2010
<b>Cash and Cash Equivalents</b>	40.1	31.3	13.2
<b>Total Receivables</b>	85.7	50.7	38.3
<b>Total Inventories</b>	93.4	71.3	47.8
<b>Non Current Assets</b>	200.9	174.8	73.9
<b>Others</b>	4.5	8.0	11.3
<b>Total Assets</b>	424.6	335.9	184.5
<b>Total Current Liabilities</b>	79.1	99.1	53.3
<b>Total Non-current Liabilities</b>	99.0	47.3	25.6
<b>Total Shareholders' Equity</b>	245.5	188.7	105.7
<b>Others</b>	1.0	0.9	0.0
<b>Equity and Liabilities</b>	424.6	335.9	184.5

# Sales Split by Region – 9 Months

## Sales split by region 2010

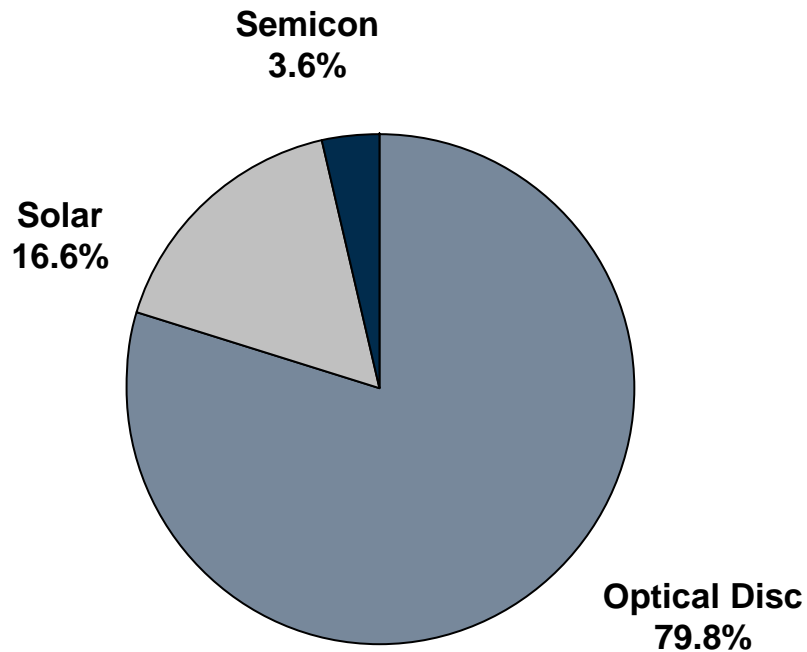


## Sales split by region 2009

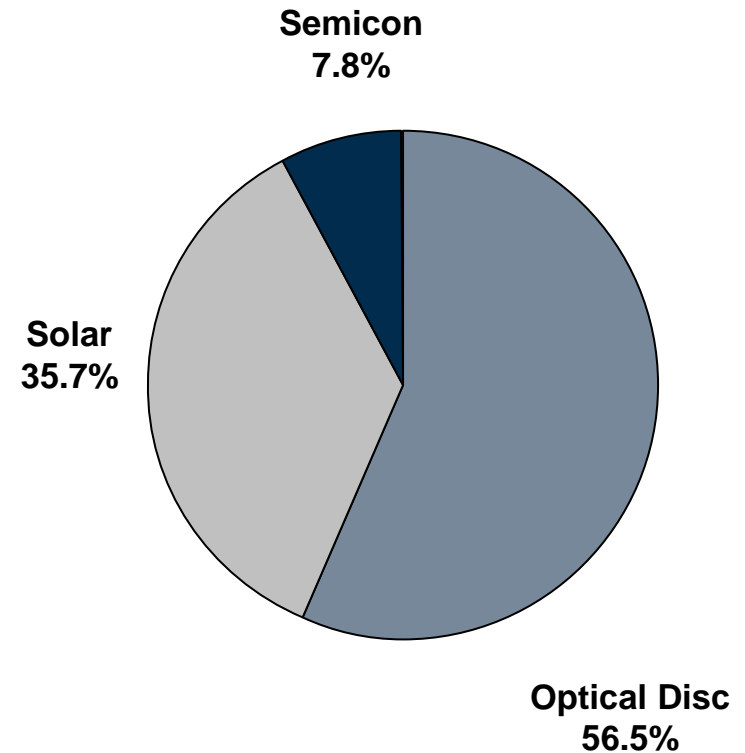


# Sales Split by Products 9 Months

## Sales split by products 2010



## Sales split by products 2009



	Q3/2008	Q3/2009	Q3/2010
<b>SINGULUS</b>	500	381	324
<b>STANGL</b>	159	175	130
<b>HamaTech</b>	105	77	0

<b>SINGULUS Group</b>	764	633	454
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<b>Domestic</b>	497	461	333
<b>Abroad</b>	267	172	121

# SINGULUS – Highlights 2010

## SINGULUS Group well positioned for the future

- Integration of STANGL Semiconductor Equipment AG finalized, now SINGULUS STANGL SOLAR
- Hamatech APE sold 02-2010
- Cleaned balance
- Lean business model
- Successful market introduction of SINGULAR
- Large Order for Thin Film Solar 02-2010
- Growth for Blu-ray machines in 2010 achieved
- CRYSTALLINE accepted for dual layer Blu-ray

## Segment Optical Disc

- Mastering
- Molding
- Replication



## Segment Solar

- Wet Processing
- Coating
- Systems Business



For all disc formats CD – DVD – Blu-ray

Mastering

Molding

Metallizing

Bonding  
Laquering

Finishing



## Disc Production: 2009 &amp; 2010

**Sony DADC**

266.1 million discs

- USA, Australia, Austria, China, Japan

**technicolor**

42.7 million discs

- Mexico, Poland, Australia

**Cinram**

30.6 million discs

- USA, Germany

**arvato digital services**

7.6 million discs

- USA, Germany

**Panasonic**

4.5 million discs

- USA, Japan

**Sony DADC**

379.3 million discs

- USA, Australia, Austria, China, Japan

**technicolor**

73.6 million discs

- Mexico, Poland, Australia

**Cinram**

44.0 million discs

- USA, Germany

**arvato digital services**

17.6 million discs

- USA, Germany

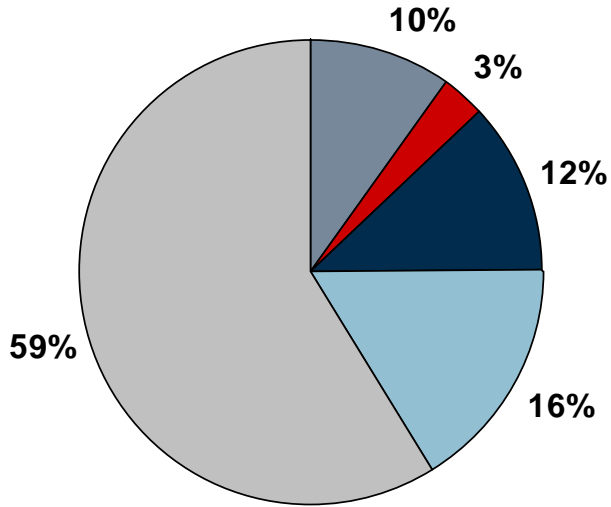
**QOL**

7.5 million discs

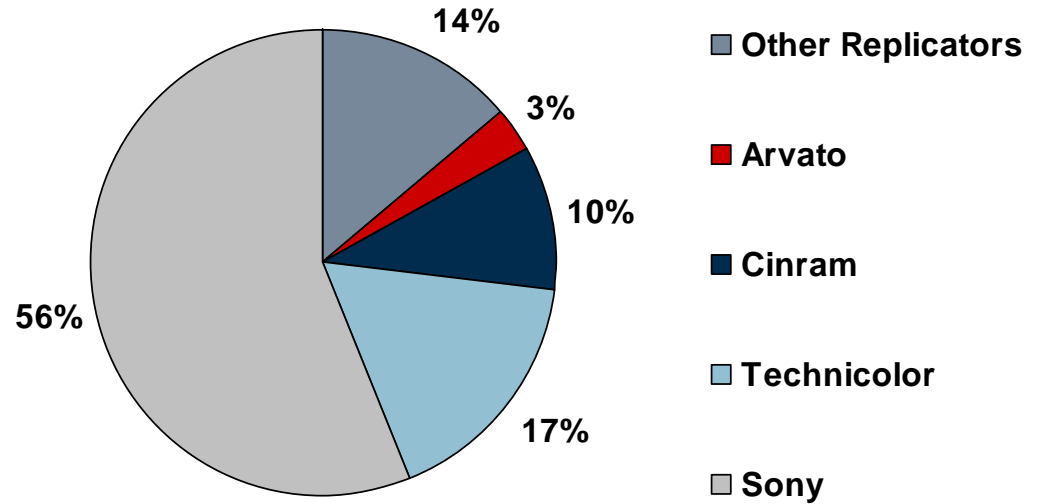
- France

## Worldwide Blu-ray Video Production

2009: 259 million discs



2010: Projection 438 million discs



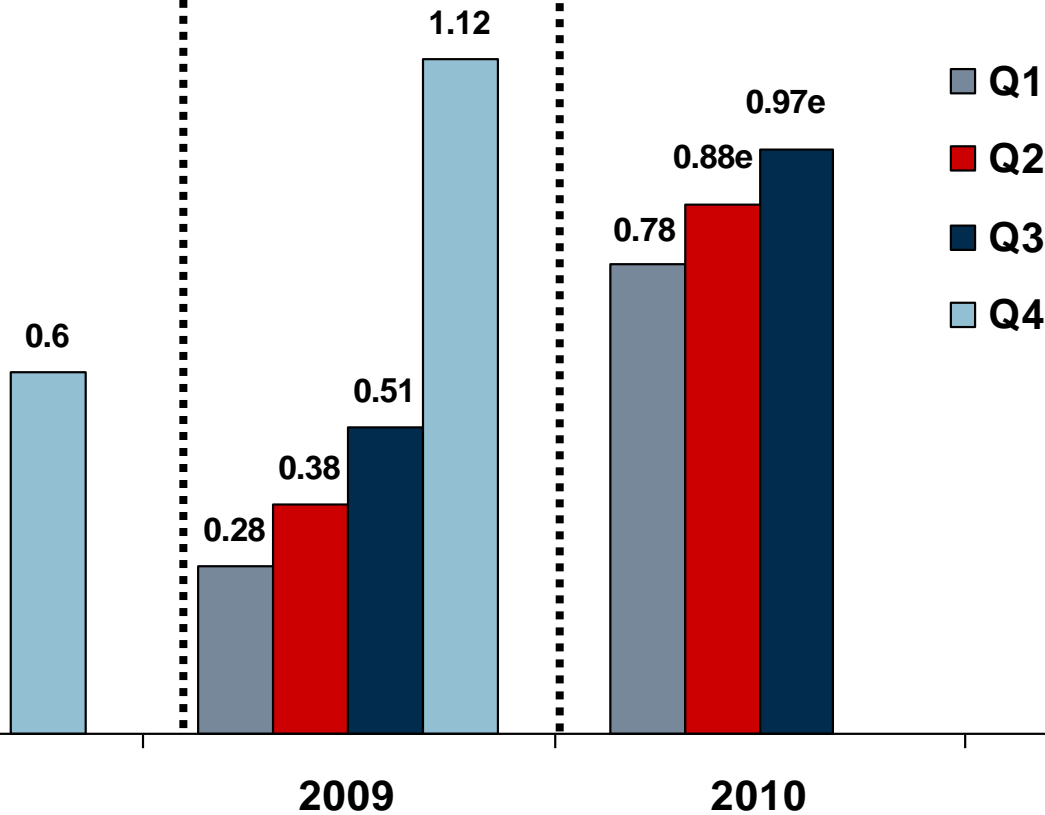
# European Blu-ray Player Sales Building Up

Annual sales\* (million)

Annual sales  
0.8 million

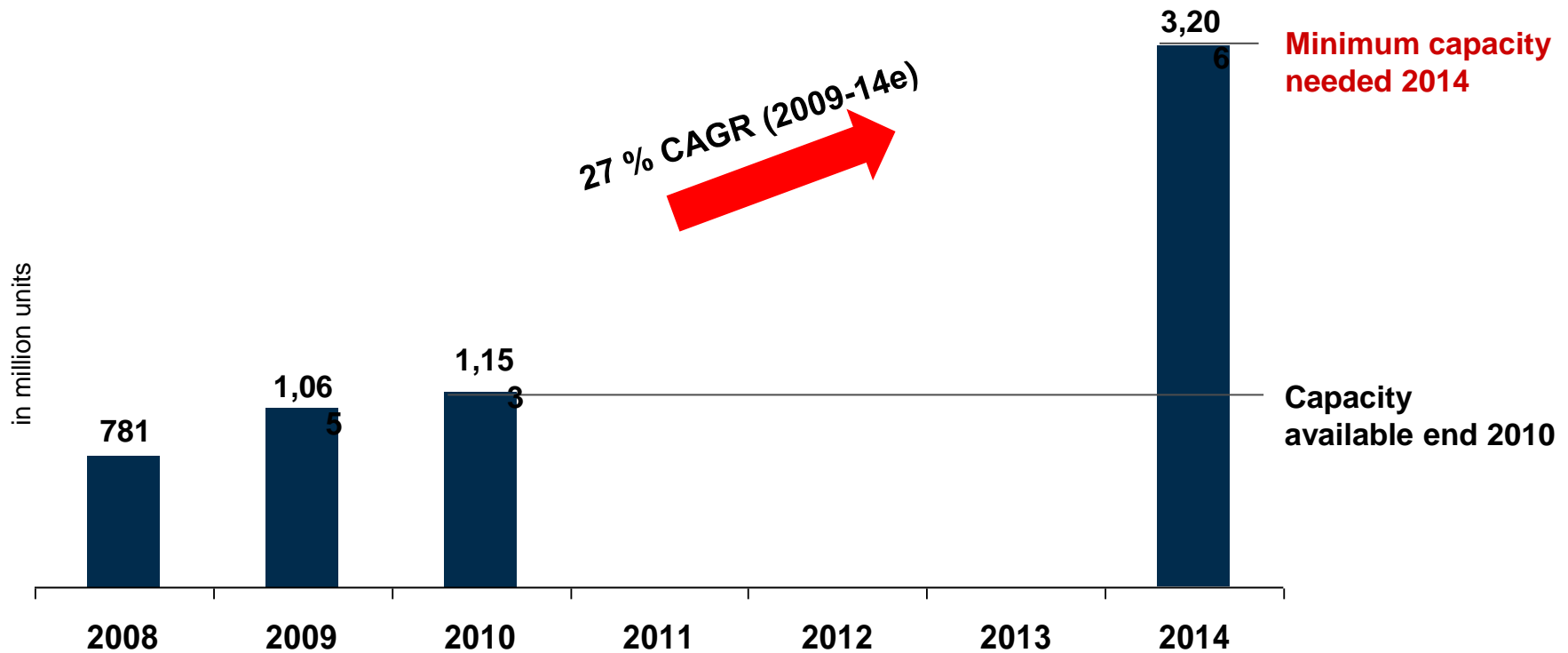
Annual sales  
2.3 million

Annual sales forecast  
5.5 million



\* Data relates to top 16 European markets.

**Significant Growth potential is forecasted for the foreseeable future**



# About 1600 Blu-ray Releases in 2010

2006

2007

2008

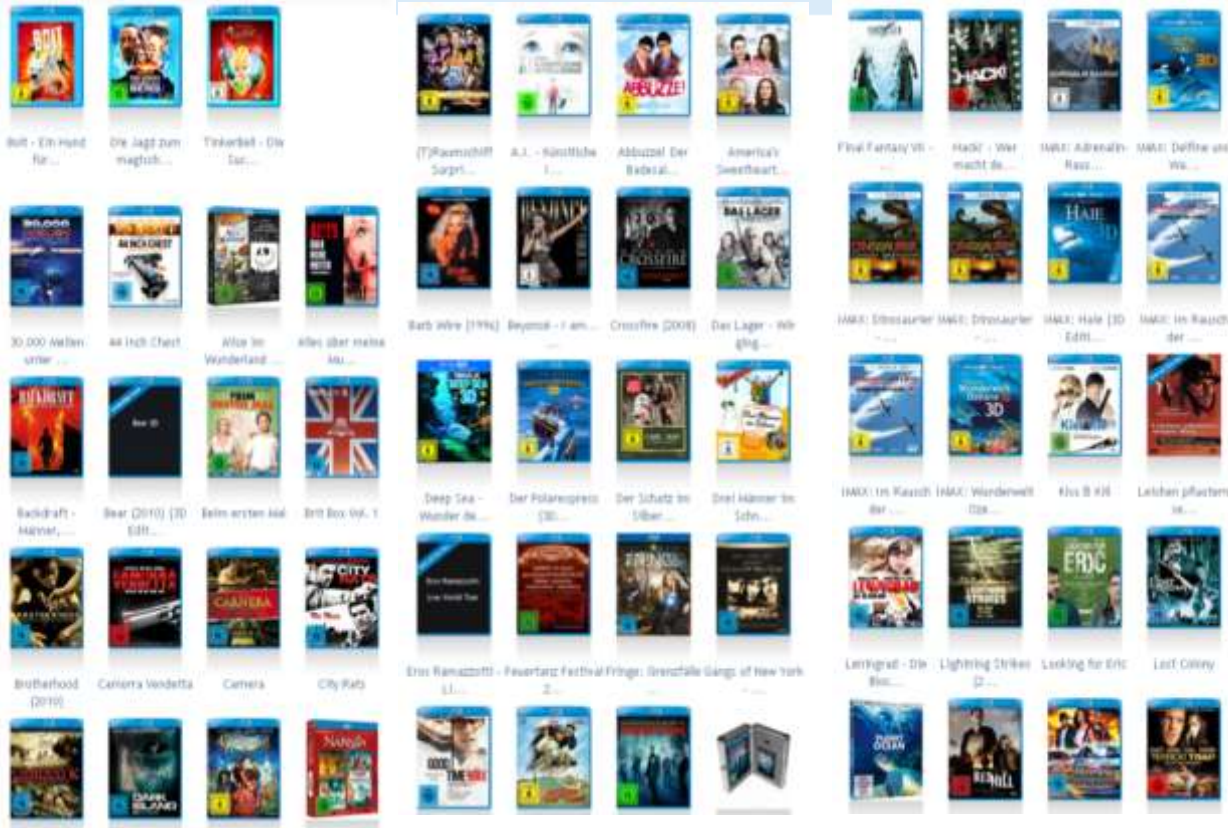
2009

**2010**

2011

Monat  
Anzahl Blu-rays

JAN	FEB	MÄR	APR	MAI	JUN	JUL	AUG	SEP	OKT	NOV	DEZ
87	105	92	99	127	91	80	164	155	196	255	149



# Catalogue Production will Further Increase Blu-ray Demand

Warner Bros. Blu-ray - Mozilla Firefox

atei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

http://www.warnerbros.com/warnerblu/

Meistbesuchte Seiten Erste Schritte Aktuelle Nachrichten SINGULUS TECHNOL... Solar Power Internati... www.photovoltaic-co... Sparkasse Hanau (50... Posteingang - Outloo... Währungsrec

Warner Bros. Blu-ray

HOME MOVIES TV ON DEMAND VIDEOGAMES BROWSE ALL SHOP SEARCH SIGN UP FOR EMAIL UPDATES facebook

WarnerBlu

**FOR THE FIRST TIME  
REMASTERED ON BLU-RAY**

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Members get 25% off Potter Ultimate Editions!

DVD2BLU  
SWAP ANY DVD FOR A NEW BLU-RAY DISC  
LIMITED TIME OFFER  
Break all the rules with this truly amazing deal!

TITLES UNDER \$20  
Blu-ray Library Builders!! Find Titles Under \$20!

PAGES 1 2

WHAT IS BLU-RAY  
DISCOVER THE ANSWER

The Goonies: 25th Anniversary Edition  
Buy Now

BD LIVE™  
Learn More!  
Register Now | Login

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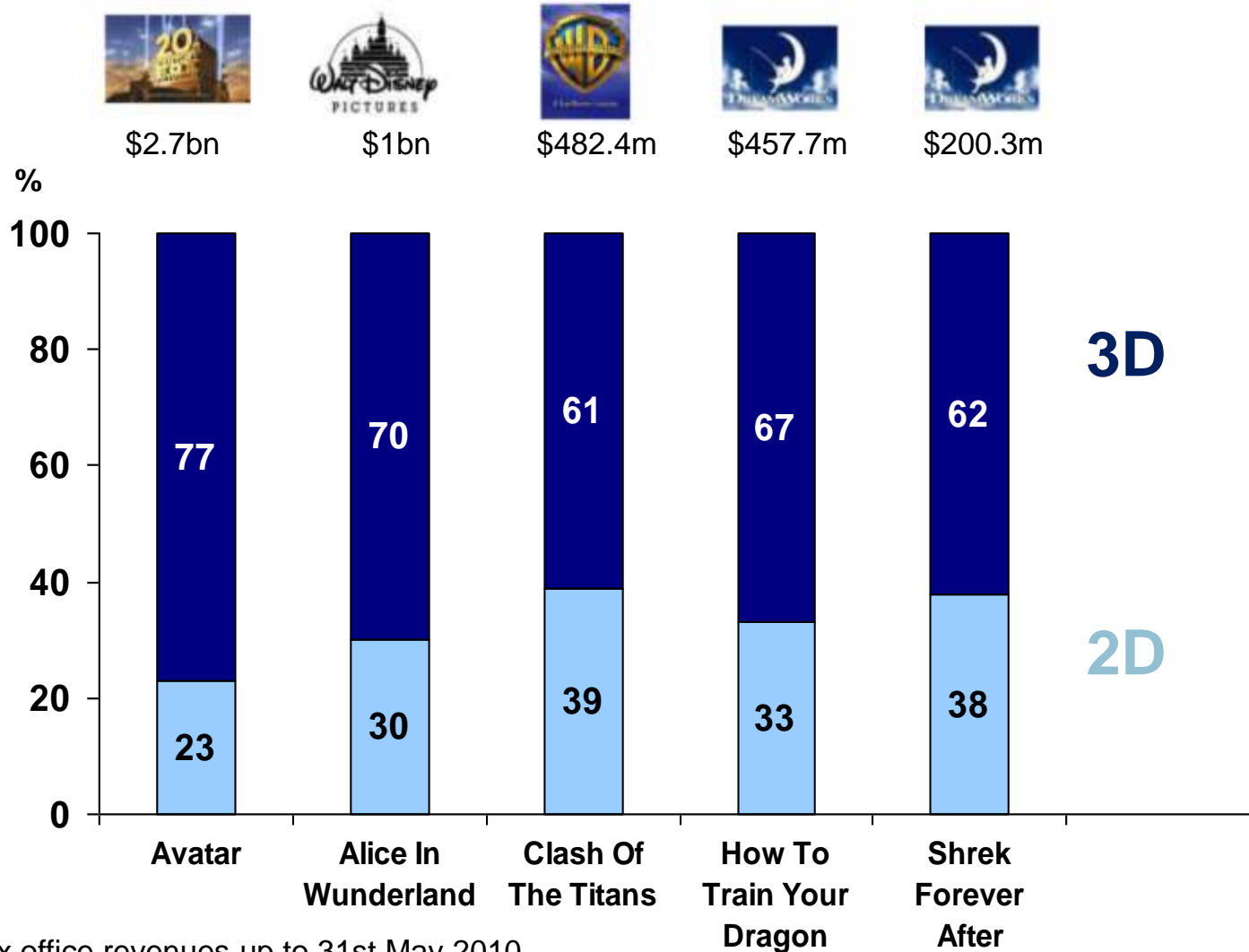
TM & © 2010 Warner Bros. Entertainment Inc. All rights reserved.

Home Produkte Flachbildfernseher 3D Welt 3D - Aufbruch in die dritte Dimension

## 3D Aufbruch in die dritte Dimension



# Global Box Office Revenue Breakdown



Box office revenues up to 31st May 2010

**USB-Recording**  
zur direkten Aufnahme von Filmen  
auf USB Speichermedien

**3D-Technologie**  
für ein völlig neues, atemberaubendes Filmerlebnis

**200 Hz Technologie**  
für brillante Bilder

**102 cm**  
40" LCD-TV

**Sehr gut**  
**CHIP**  
10/2010

**8 cm**  
flach

**799,-**

**MEDIA MARKT PREIS**

**SAMSUNG LE 40 C 750**  
**102 cm Full-HD 3D LCD-TV**

3D Full-HD Auflösung 1.920 x 1.080 Pixel, 24p kompatibel, Multituner mit CI+ für Kabel-HD Empfang, DLNA Netzwerkfähig, Anschlüsse: 4x HDMI, 2x Scart, YUV, VGA-Eingang, Abmessungen mit Standfuß (HxBxT) 98,6 x 66,5 x 27,0 cm, Stromverbrauch (in Betrieb / Standby) 190 W / 0,1 W (lt. Herstellerangaben), Art. Nr. 1296309

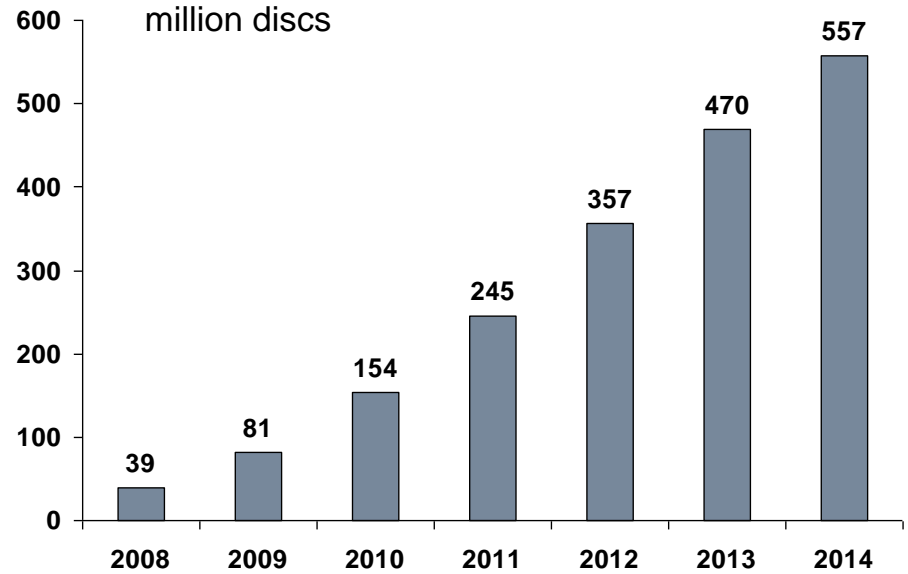
Deutschlands erster 3D-Eventsender.  
Neu und exklusiv auf Sky.

**SKY 3D**

HD 3D 24p USB DVB-C  
DVB-T 4x-HDMI



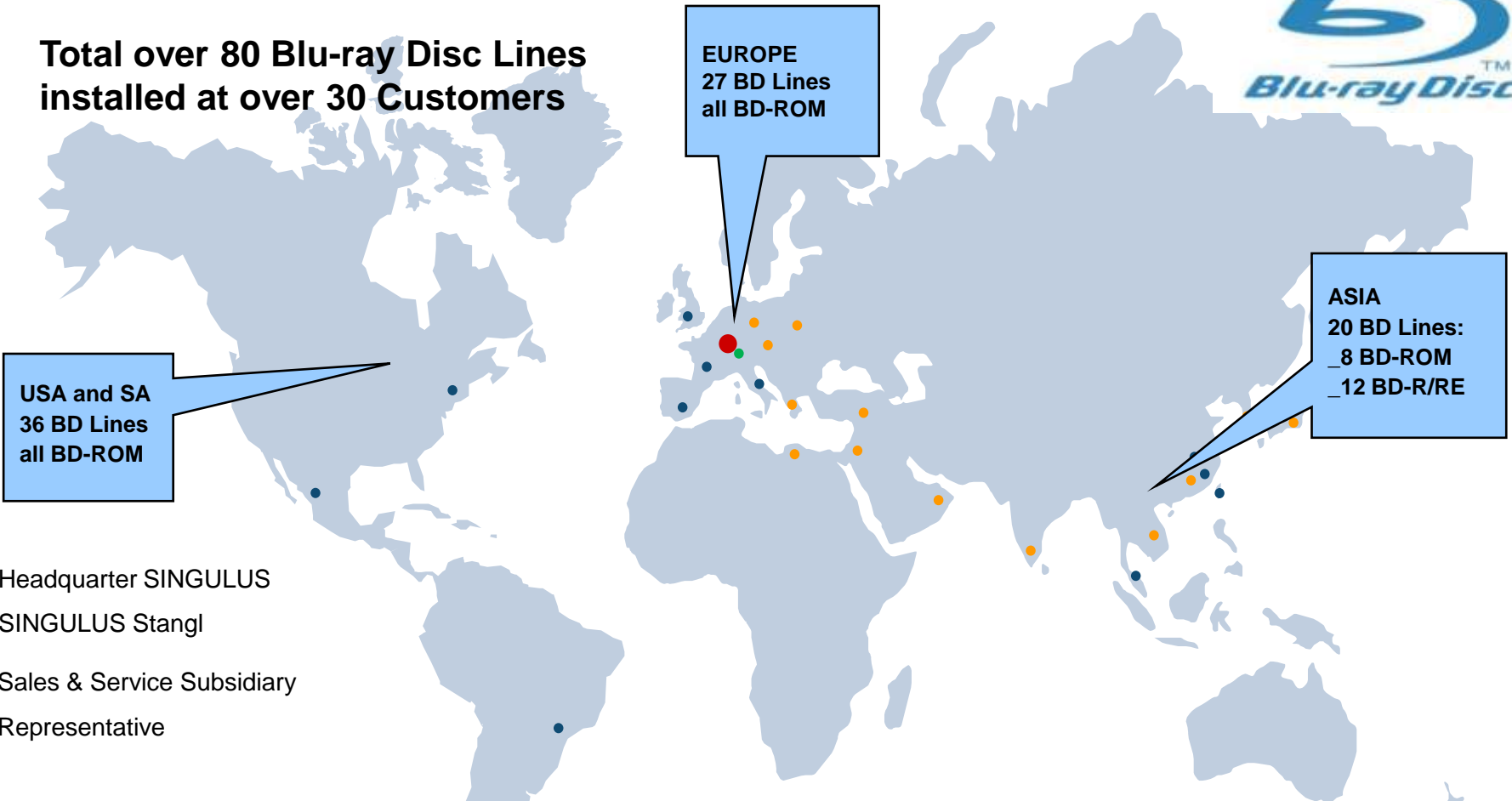
### Projected Global BD-R/RE Disc Production



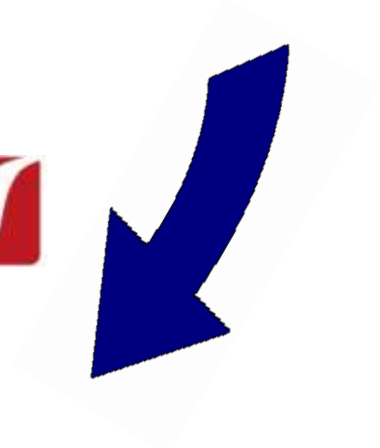
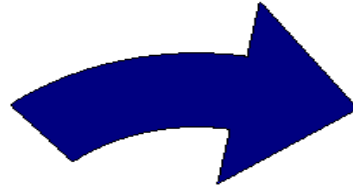
# SINGULUS Blu-ray Disc Lines Installed Base Worldwide



**Total over 80 Blu-ray Disc Lines  
installed at over 30 Customers**



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
SKYLINE for CD	122	234	405	221	134	310	202	82	113	80	19	12
SPACELINE for DVD	17	26	99	79	182	183	255	149	123	113	72	17



## Unstoppable Momentum

- + 80 % in Blu-ray disc sales in USA  
*9 months 2010, (DEG)*
- + 104 % BD players sales in USA  
*9 months 2010, (DEG)*
- 62 million 3D TVs expected in 2011  
*ABI Research, USA*
- + 67 % in Blu-ray disc sales in Europe  
*3. Quarter GFK International*
- Packaged Media remain the major revenue generator for Studios  
*Futuresource Consulting 2010*

## Innovation via Blu-ray

- 3D Movies will boost the Blu-ray market
- Packaged media DVD & Blu-ray generate revenues for Hollywood studios of more than 50 % of total revenues

## Segment Optical Disc

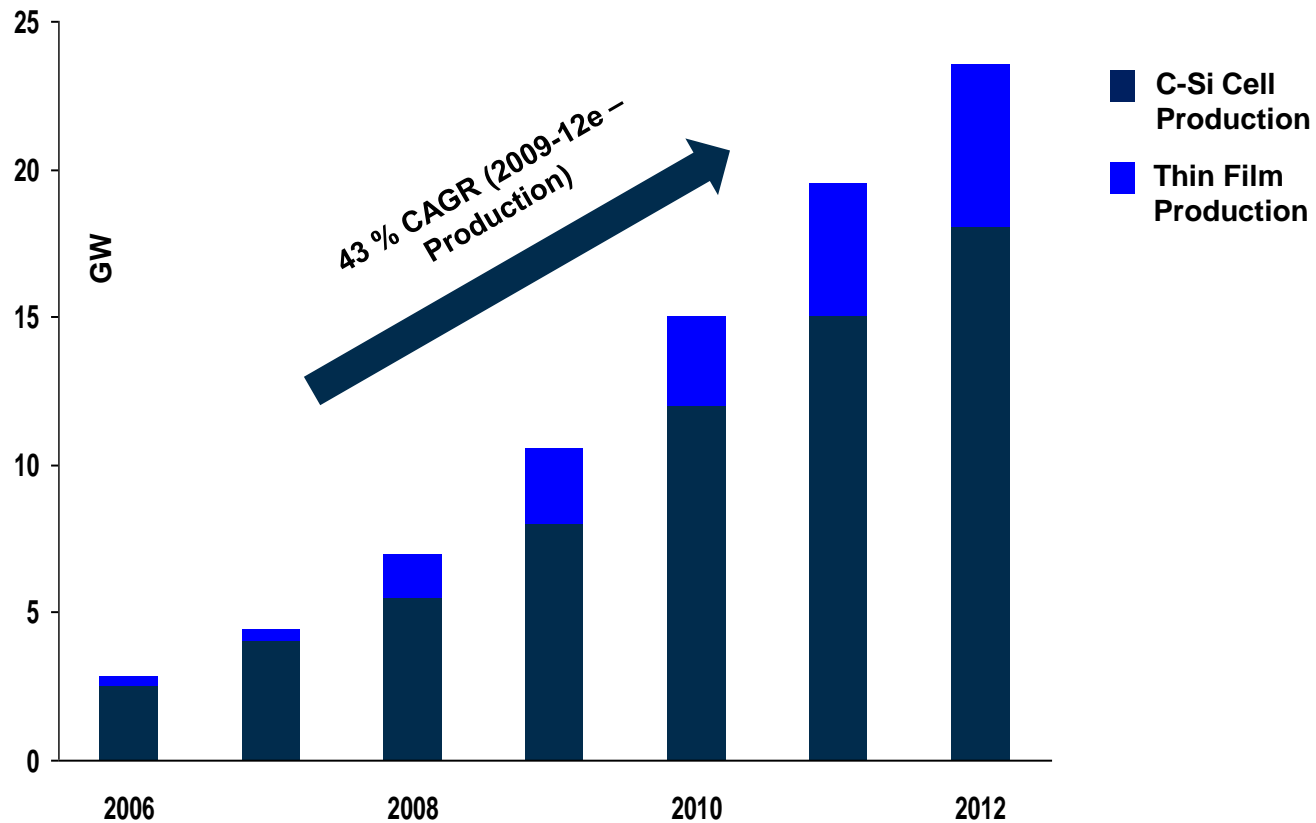
- Mastering
- Molding
- Replication



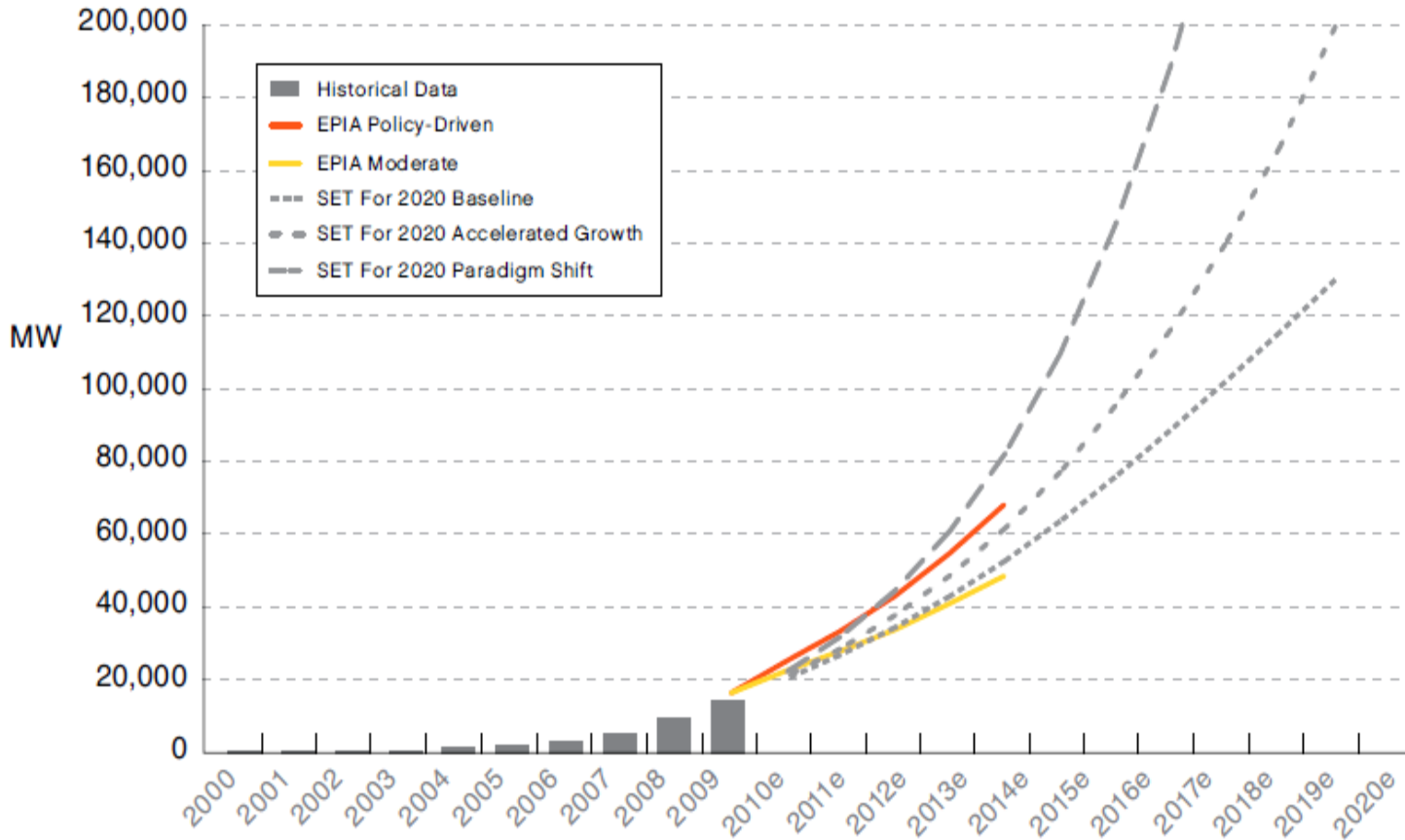
## Segment Solar

- Wet Processing
- Coating
- Systems Business





## Paradigm Shift: Targets up to 12% of the EU electricity consumption from PV by 2020



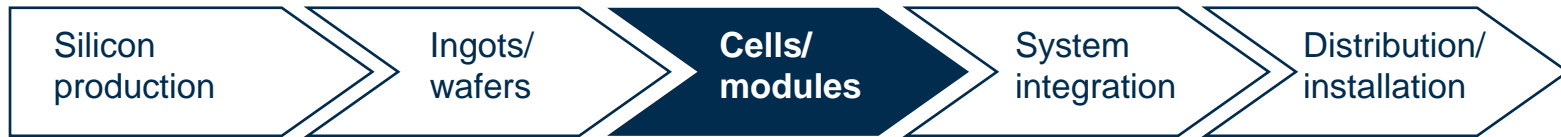


## Today

- Machine in production
  - Standard processes developed
  - High-efficiency processes in development
  - Co operations with several interested institutes and lead customers for new cell concepts in progress
  - New orders acquired and further expected
  - Sales activities in Asia enhanced
- Systems in production in front-end line integrated
- Integrated c-Si production systems and corresponding standard processes defined
  - Marketing of systems has started

## Tomorrow

- Application of high efficiency cell processes on existing equipment
- Introduction of new equipment for advanced cell concepts
- Integration of high efficiency processes into system business

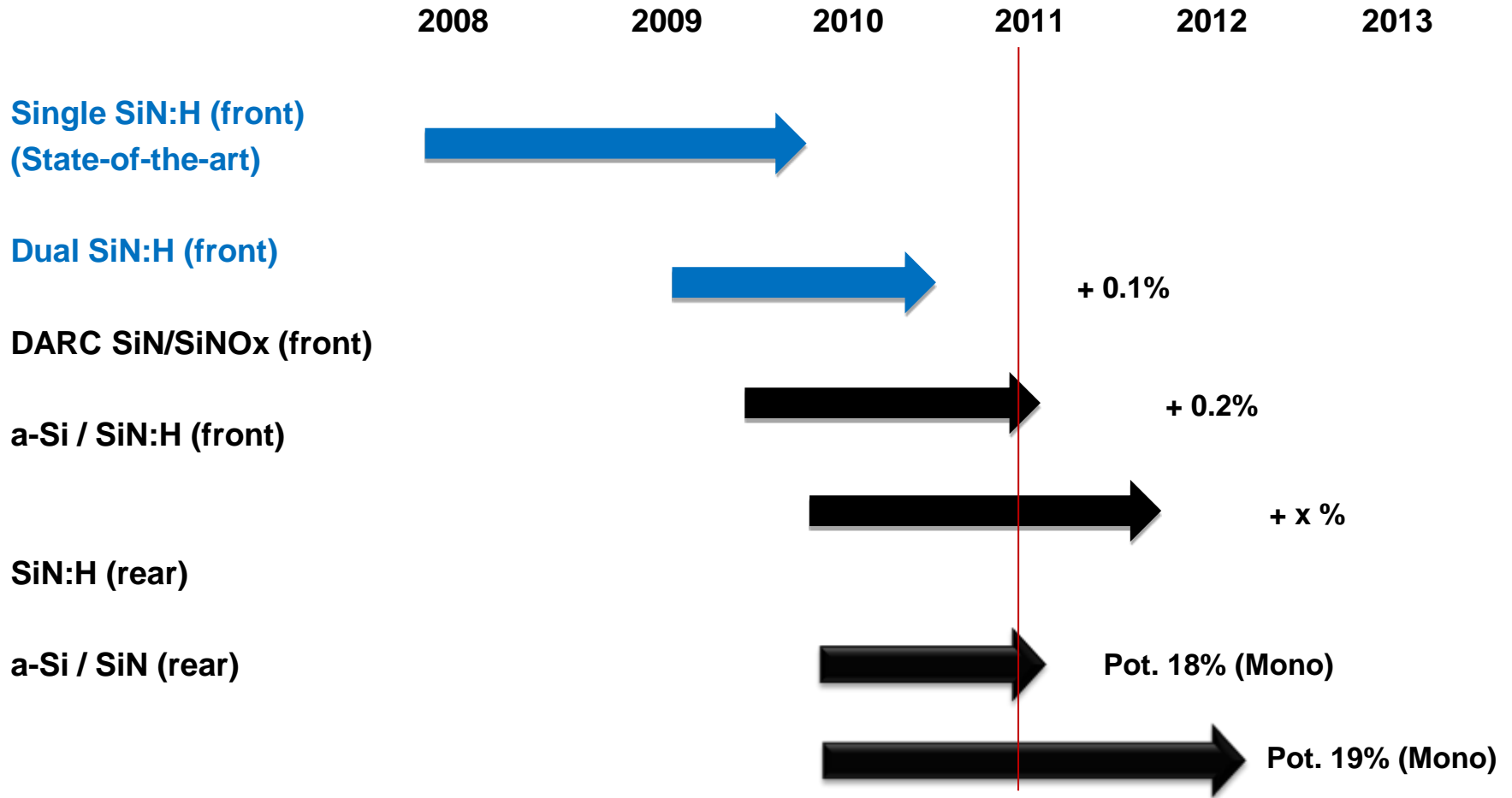


SOLARE System for Inline Production of Si Solar Cells with LINEA  
and two SINGULAR & a back-end with double capacity offering approx. 60 MW



# 2 x LINEA / 1 SINGULAR / 5 x Handling – c-Si Front-End System





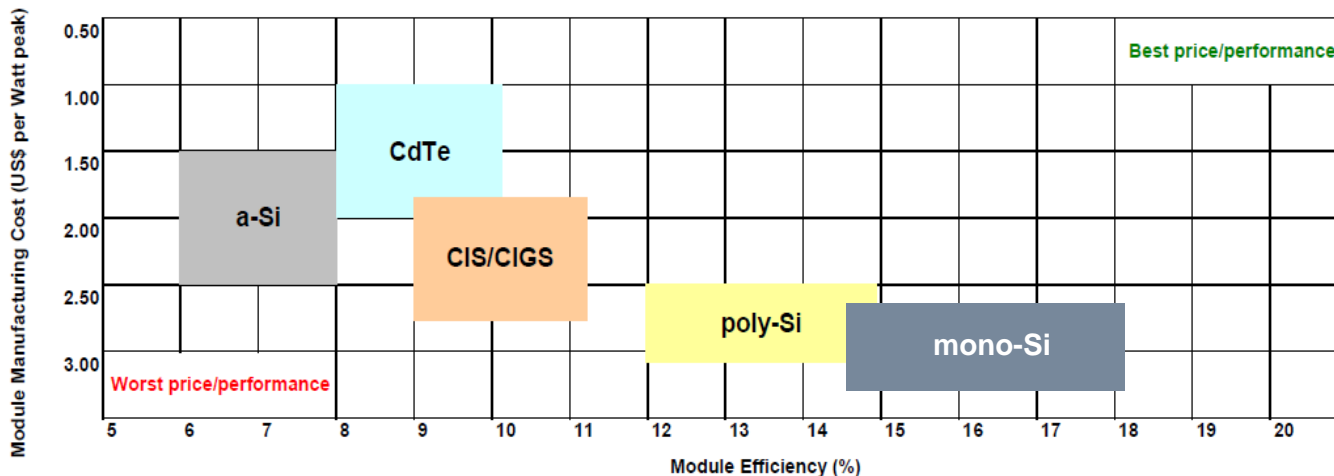
**All processes in SINGULAR realized  
no additional process step**

## Intensified marketing & further product development

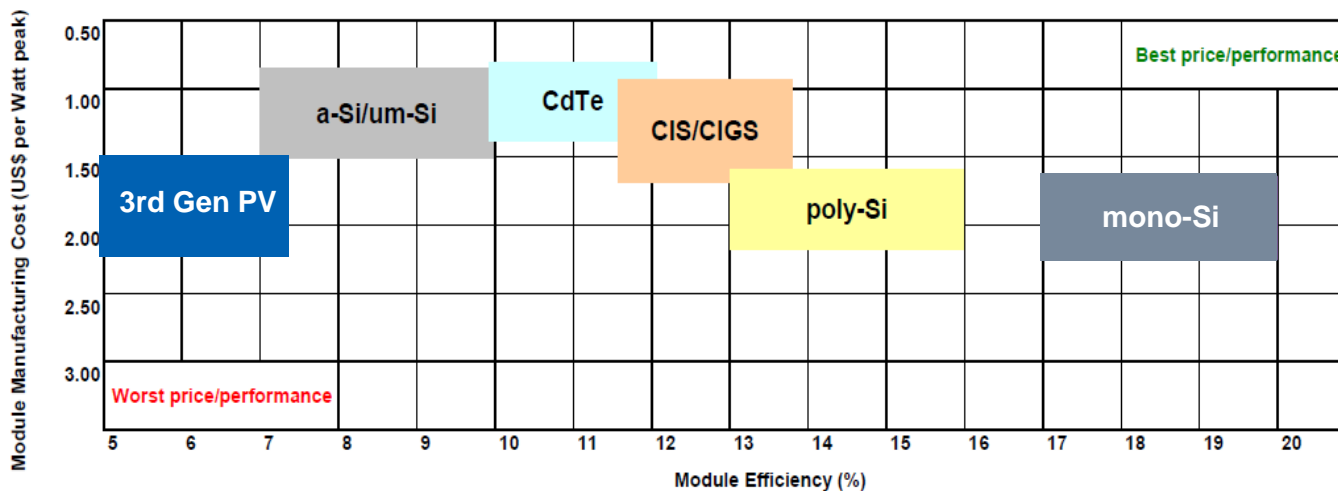
- Transfer of „Optical Disc“ inline concept to PV production
- Get more orders for front end and complete production systems
- Stepped up marketing and sales activities for the SINGULAR
- Set up of manufacturing site in China for wet processing systems
- Active participation in new cell design
- Integrator of PV production technology

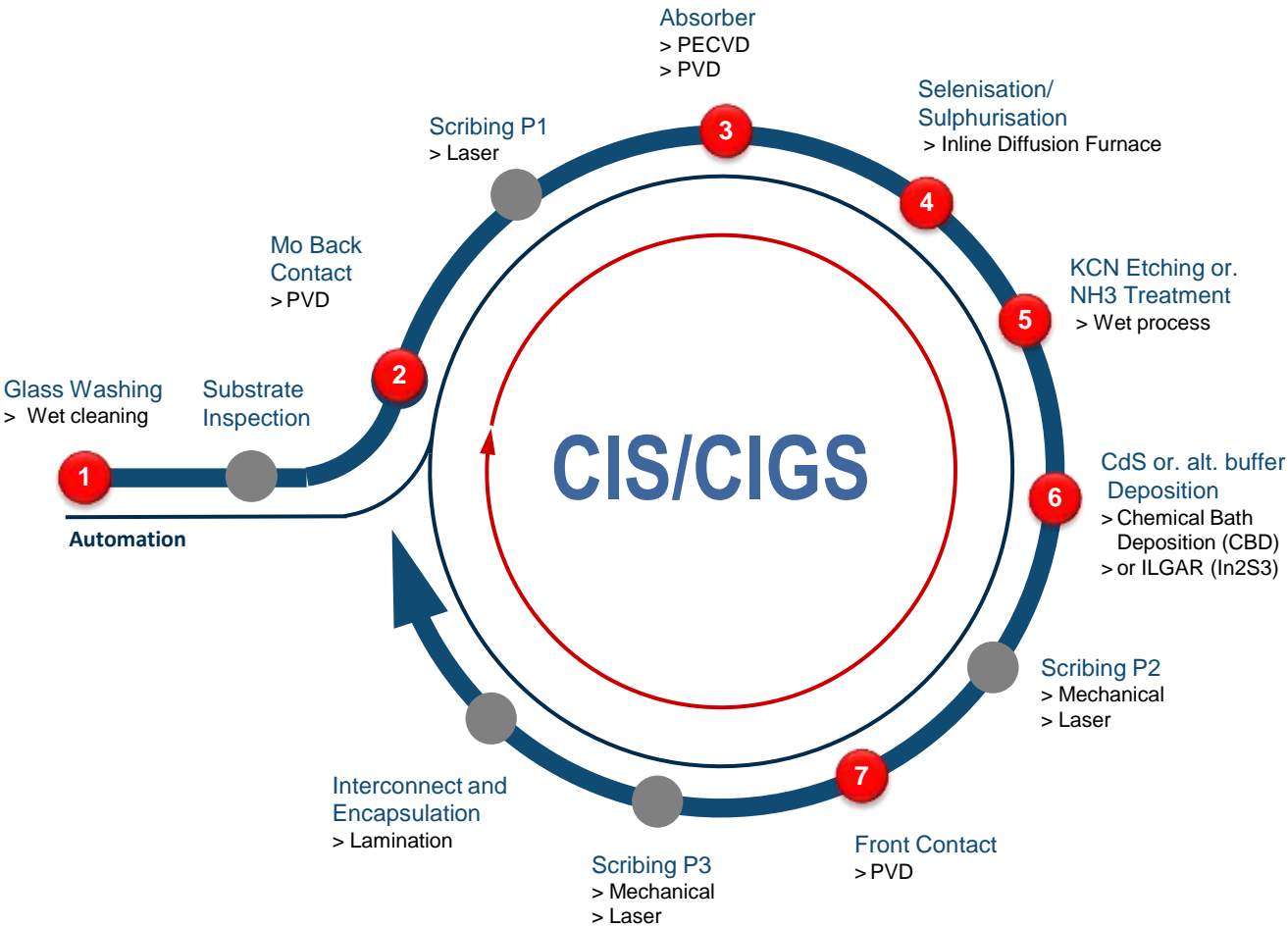


PV Products in 2008






PV Products in 2013





### Singulus Product Portfolio

1	VITRUM Clean
2	PVD Back Contact
3	PVD Absorber
4	INSE
5	VITRUM KCN
6	TENUIS altn. ILGAR or IMPEDIO
7	PVD TCO

-  SINGULUS
-  Cooperation Partner
-  Singulus Automation
-  Process Support/ Integration

### Wet Process Applications / Cleaning / Washing / Etching Coating



**CIS/CIGS/CIGSse**

**TENUIS**

Single Side

CdS/ZnS Buffer Layer

Glass Substrates

up to 1600x1200 mm

Inline



**CIS/CIGS/CIGSse**

**IMPEDIO**

Single Side

CdS/ZnS Buffer Layer

Flexible Substrates

up to 1000 mm width

Inline



**CIS/CIGS/CdTe/a-Si**

**VITRUM**

Cleaning/Etching  
(e.g. TCO/KCN/NH3)

Glass Substrates

up to 2600x2200 mm

Inline

## 2<sup>nd</sup> Generation for Inline Diffusion Furnace Optimized Cycle Time



2008                      2009                      2010                      2011                      2012                      2013

**TENUIS**  
- CBD - CdS



**TENUIS**  
- CBD Cd-free  
- increased productivity



**ILGAR**  
- 30 x 30 cm<sup>2</sup> substrates



13%

**ILGAR**  
- production size substrates



**ILGAR**  
- mass production



## Innovative products

- Become standard equipment supplier for thin film solar module production
- Business expansion with inline diffusion furnaces
- Focus on highest cell efficiency in CIS/CIGS production
- Cadmium and zinc sulfid buffer layer with TENUIS
- Introduction alternative Cd-free buffer layer – ILGAR



- Orders for SINGULAR machines
- Integrated PV production systems
- More orders for inline diffusion furnace
- Stronger thin film market
- Active R & D for new cell design
- Stronger development of the asian sales network

- 1<sup>st</sup> Order for inline diffusion furnaces
- FAT for 1<sup>st</sup> front end system
- Complete solutions with partners

- Cooperation with HZB for ILGAR
- Large Order for flexible CIGS solar cells
- Shipment of 1<sup>st</sup> SINGULAR

- Takeover of Stangl
- Start of SINGULAR development
- Inline Wet Processing for SI cells

2007

2010

2011

# Back to Profitable Business in 2011

## Optical Disc

- Only global one-stop supplier and No. 1 for Blu-ray equipment
- Strong growth for Blu-ray in the next years
- Profitable products with good margins
- Strong growth for Blu-ray machines in 2010 achieved
- Production know how for the coming market of rewritable/recordable Blu-ray (BD-RE/BD-R)

## Solar

- Projects for complete systems in negotiations
- Well positioned in attractive, sharply growing solar market
- SINGULUS AR coating technology establishing itself
- Setup of improved sales network in Asia
- Solar segment expected to break-even in 2011

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## Forward-Looking Statements

This presentation contains forward-looking statements based on current expectations, assumptions and forecasts of the executive board and on currently available information. Various known and unknown risks, unpredictable developments, changes in the economic and political environment and other presently not yet identifiable effects could result in the fact that the actual future results, financial situation or the outlook for the company differ from the estimates given here. We are not obligated to update the forward-looking statements made in this presentation unless there is a legal obligation.