

鎔創科技-KY

2022/09/14

PLAYNITRIDE



Outline

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I. Company Profile

- Company Basic Information
- Milestone
- Group Structure
- Main Shareholder Structure
- Board Members and Key Management Team

Company Basic Information

Company Name

PlayNitride Inc. (銓創科技股份有限公司)

Founded

February 25th, 2014

Chairman/CEO

Dr. Yun-Li Li

Paid-up Capital

NTD 1,071,786,220

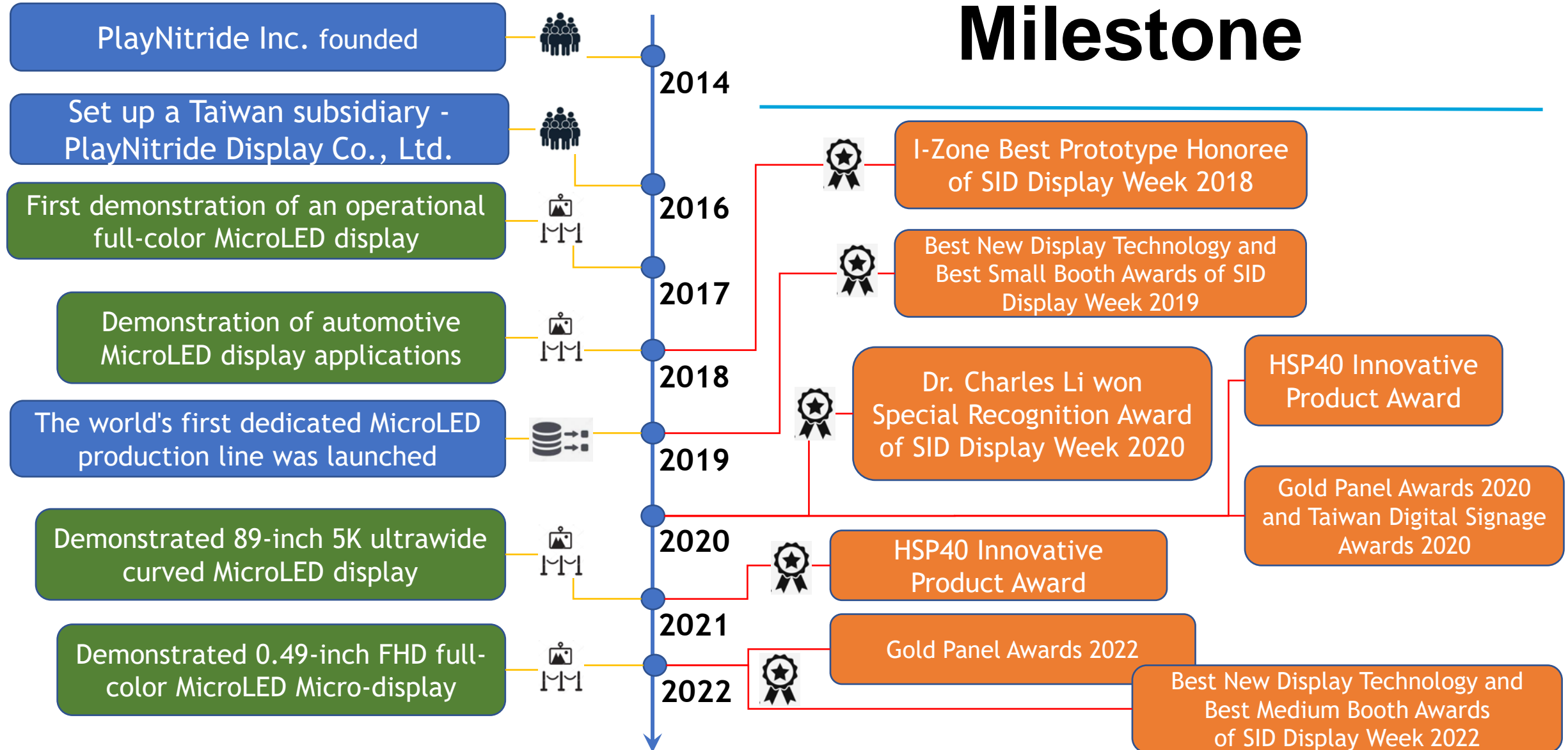
Main Product

MicroLED Chip on Carrier and Technical Service

**Total Number of
Employees**

362 people (R&D : 146 people)

Milestone



Group Structure



Main Shareholder Structure

August 31, 2022

Main Shareholder Name	# of shares	Ratio
SVIC No. 45 New Technology Business Investment L.L.P.	11,993,446	11.19%
SVIC No. 32 New Technology Business Investment L.L.P.	10,867,604	10.14%
JKL Capital Investment Ltd.	9,229,302	8.61%
晶元光電股份有限公司(EPISTAR Corporation)	9,137,338	8.53%
康利投資股份有限公司(Konly Venture Corp.)	7,534,628	7.03%
宋學仁(SUNG, HSUEN-JEN)	5,395,310	5.03%
光寶科技股份有限公司(LITE-ON Technology Corporation)	4,234,736	3.95%
KingTiger Memory Solution Inc.	3,912,338	3.65%
李允立 (Yun-Li Li)	3,844,111	3.59%
Lighting Investment Ltd. 照明投資有限公司	2,757,082	2.57%

Board Members

	Title	Name	Main Experience	Shareholding Ratio
1	Chairman	Yun-Li Li	CEO & CTO of PlayNitride Inc., Chairman of PlayNitride Display Co., Ltd.	3.80%
2	Director	SVIC No. 32 New Technology Business Investment L.L.P. Representative: Jungho Kim	EVP of SVIC	10.77%
3	Director	EPISTAR Corporation Representative: Katherine Hong	VP of Epistar Corporation	9.06%
4	Director	Konly Venture Corp. Representative: Wai Lung Liao	CTO of AUO Corporation	7.47%
5	Director	LITE-ON Technology Corporation Representative: Steven Liao	VP of LITE-ON Technology Corporation	4.20%
6	Independent Director	I-Cheng Liu	Director of Chia Hsin Cement Group	0%
7	Independent Director	Feng-Yuan Gan	President of E Ink Holding Inc.	0%
8	Independent Director	Wei Wang	Chairman & CEO of Crystalvue Medical Corporation	0%

Key Management Team



Dr. Yun-Li Li

- Chairman and CEO, PlayNitride Inc.
- CTO, Genesis Photonics Inc.
- Asst. Professor, Graduate Institute of Photonics and Optoelectronics, NTU
- Ph.D. of Electrical Engineering, Rensselaer Polytechnic Institute, RPI
- B.S. of Physics, NTU



Joe Chen

- COO, PlayNitride Inc.
- AVP, Genesis Photonics Inc.
- M.S. of Department of Materials Science and Engineering, NTUST



JS Wang

- VP of Manufacture, PlayNitride Inc.
- GM, TSLC
- VP of Logistic, VisEra
- VP of Manufacture, Hannspree
- Deputy Director of F&A / Manufacture Committee, TSMC
- B.S. of Industrial Engineering



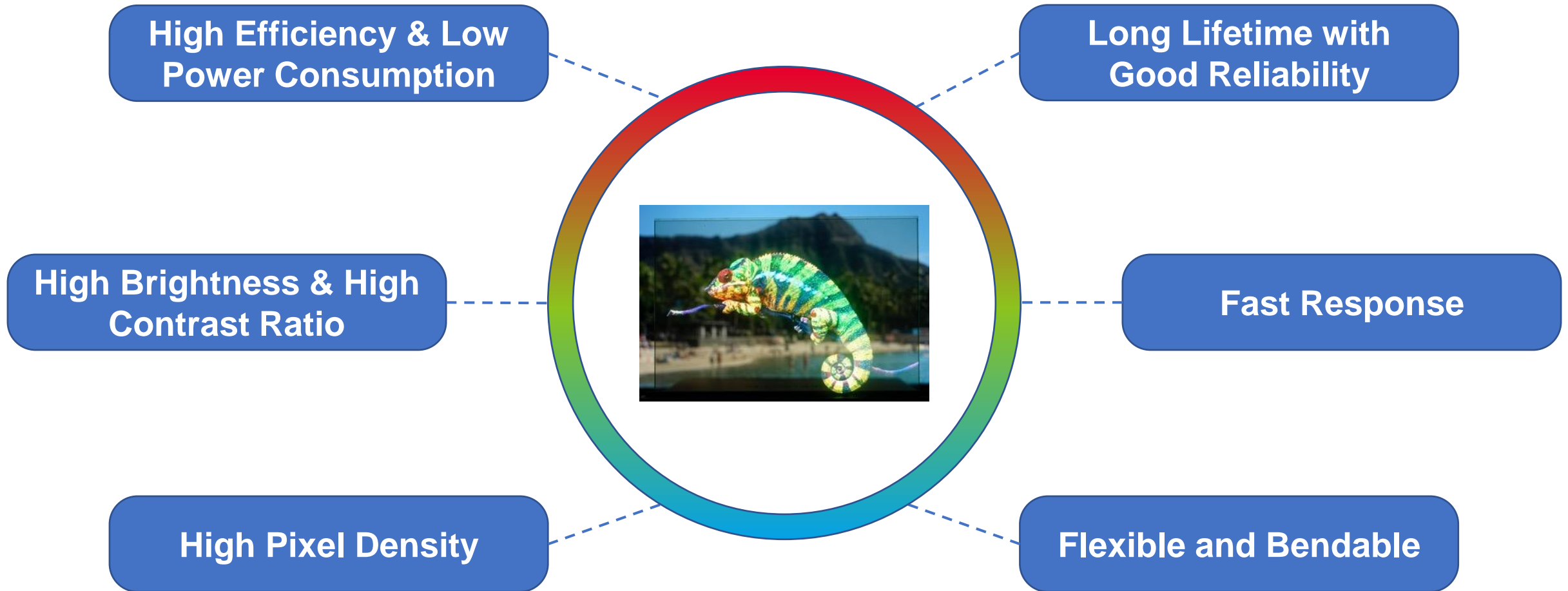
Jonathan Chen

- CSO, PlayNitride Inc.
- CTO, TPK Holding Co., Ltd.
- Senior Manager of Finance, Foxconn
- M.A. of Financial Investment, Bernard M. Baruch College-CUNY

II. Product Applications

- **Advantages of MicroLED display**
- **Displays are everywhere and all can be with MicroLED**
 - MicroLED TV at CES 2022
 - Large-size MicroLED Display (Modular PCB)
 - Transparent display technology is the key to future car display
 - Wearable MicroLED Display
 - MicroLED micro-display is the key for AR glasses

Advantages of MicroLED display



Displays are everywhere and all can be with MicroLED



MicroLED TV at CES 2022



Samsung Electronics unveiled its newest MICRO LED TVs ahead of CES 2022.

As Samsung's state-of-the-art display, MICRO LED offers a best-in-class picture quality thanks to 25 million micrometer-sized LEDs that individually produce light and color, creating an incredibly immersive experience through impressive depth, vibrant colors and a heightened level of clarity and contrast. At CES 2022, Samsung will unveil the MICRO LED in three different sizes - 110", 101" and 89".

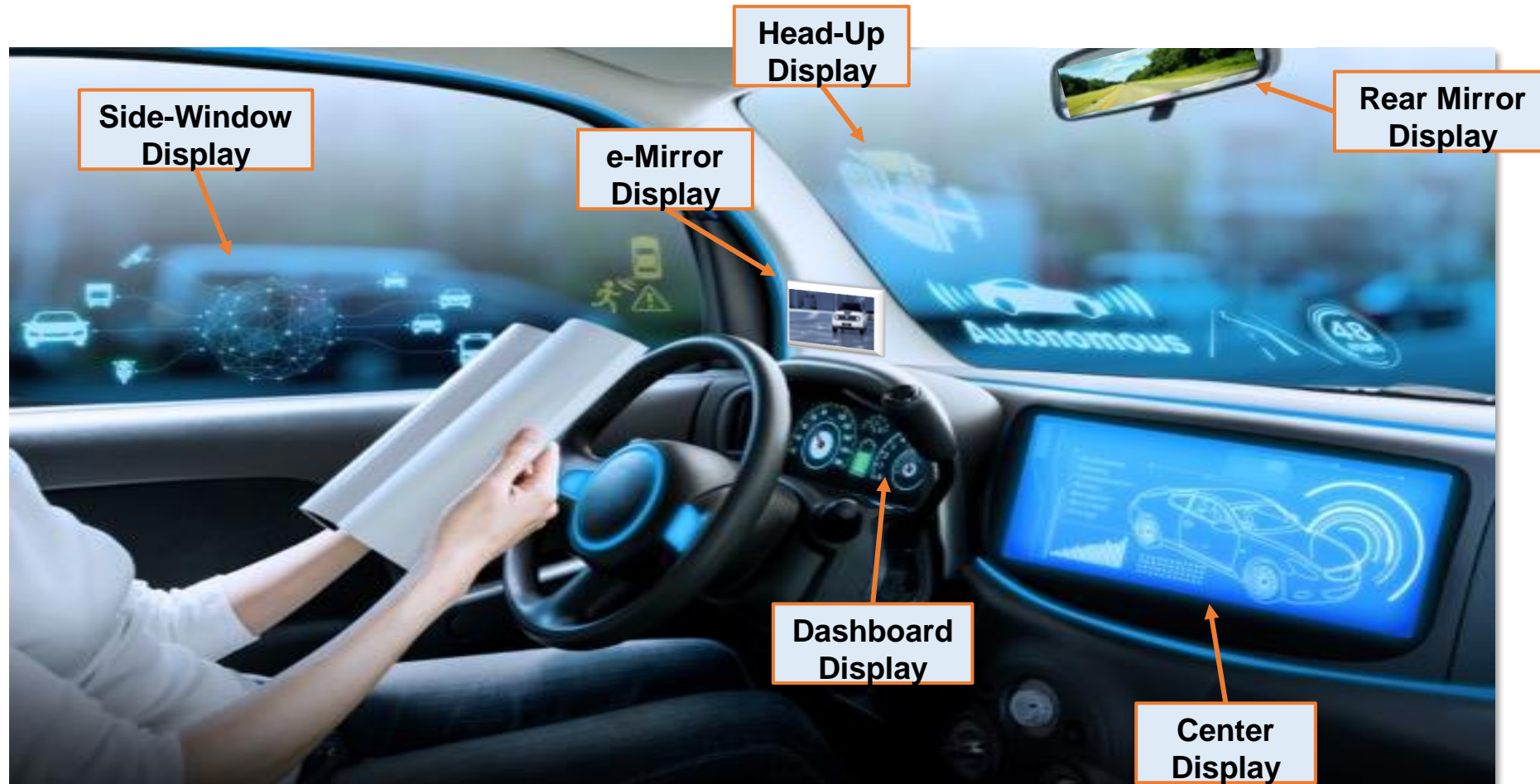
In addition to the hardware innovations, the 2022 MICRO LED supports 20-bit greyscale depth. This means MICRO LED models can express every detail in a scene, offering the finest control with over 1 million steps of brightness and color levels, delivering a true HDR experience. It also expresses 100% of DCI and Adobe RGB color gamut, resulting in stunning, lifelike colors. Together with immersive design made possible by its 99.99% screen-to-body ratio, MICRO LED delivers revolutionary performance.

Large-size MicroLED Display (Modular PCB)



89" 5K 32:9 P0.43 Curved MicroLED Display

Transparent display technology is the key to future car display



MicroLED Displays for Automotive



PIXELED
Display

Micro LED Display

Transparent and HDR MicroLED Displays



MicroLED Displays for Automotive



PIXELED
Display



PIXELED
Display

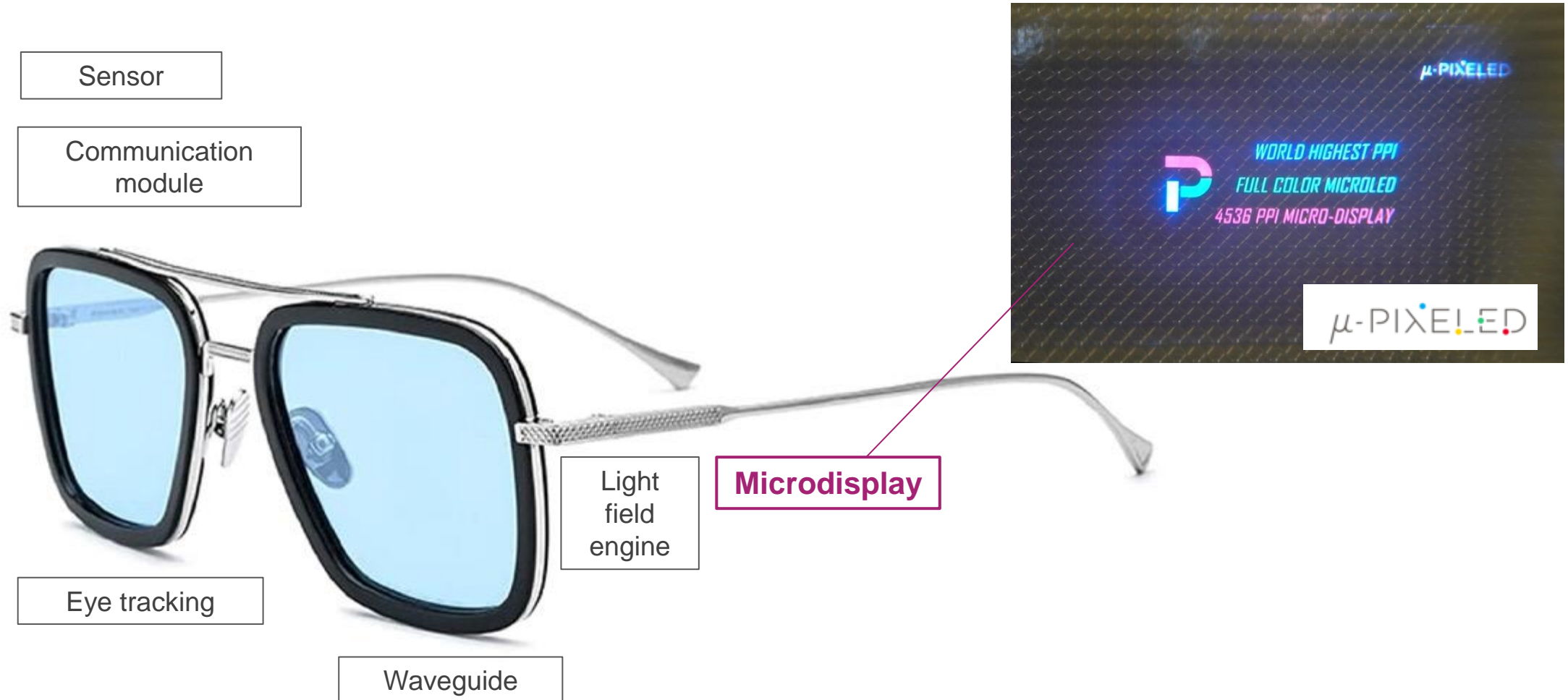
Wearable MicroLED Display



PIXELED
Display

1.39" 338ppi MicroLED Circular Display

MicroLED micro-display is the key for AR glasses

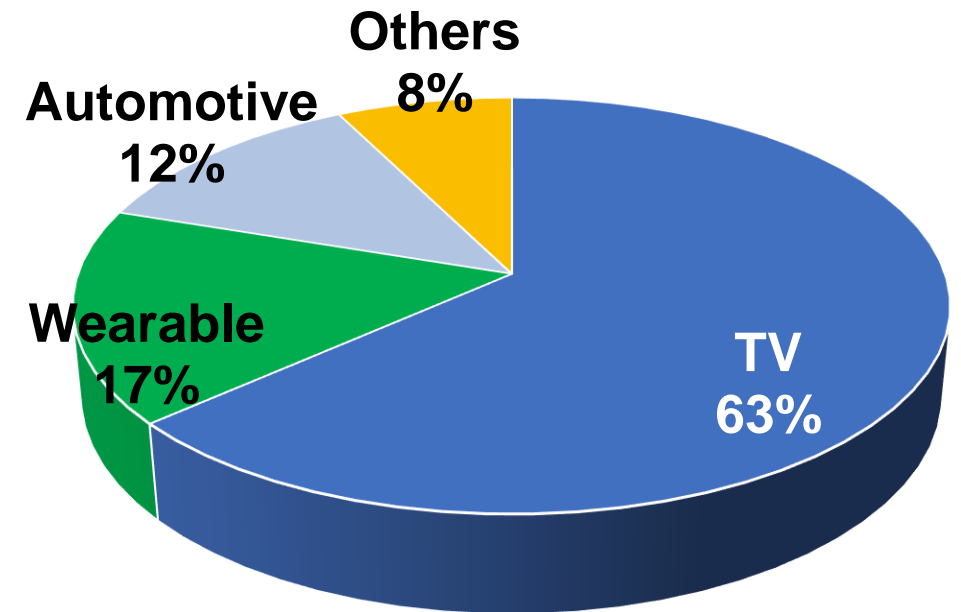
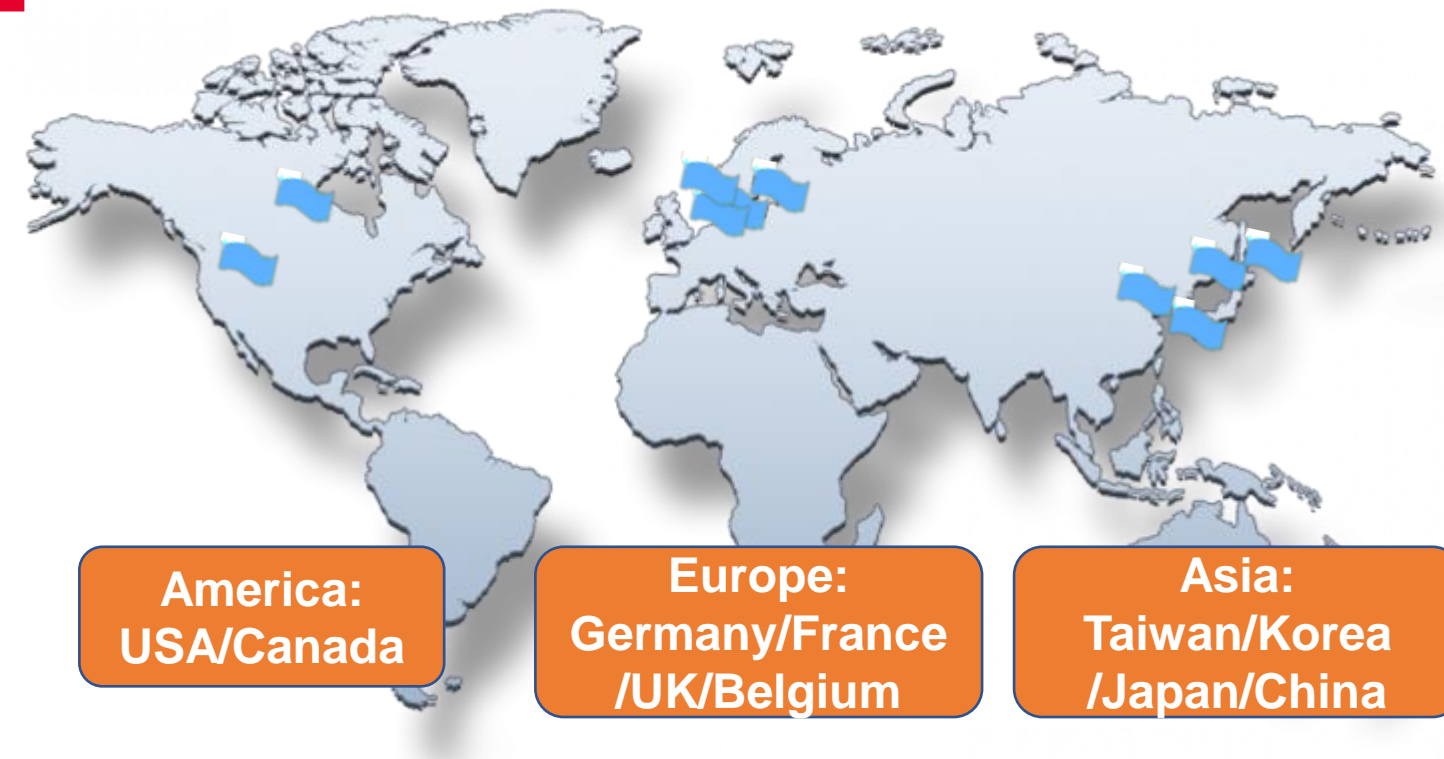


III. Operational Results and Overview

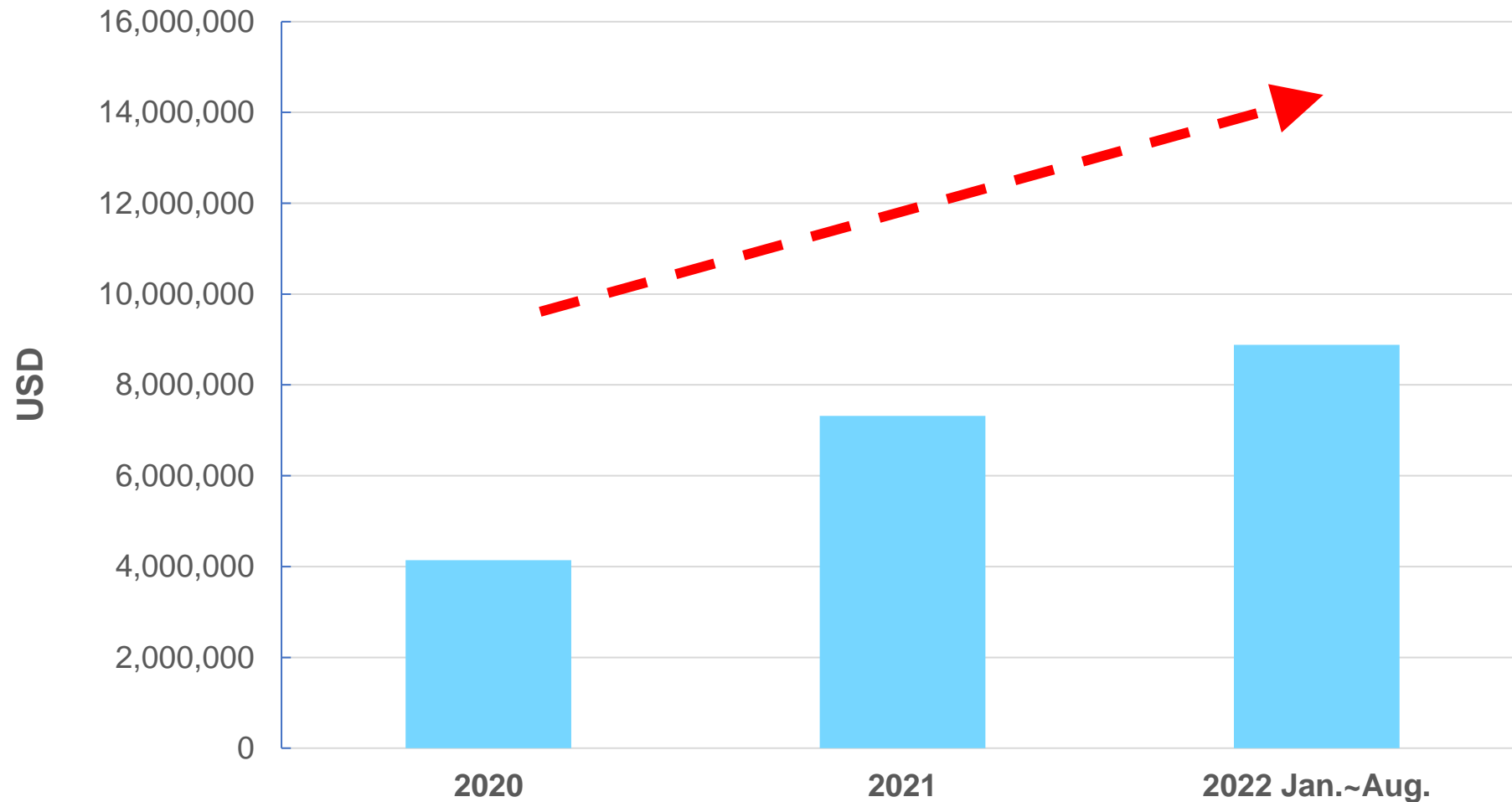
- Categories of Customers and Applications
- 2020~2022 Revenue

Categories of Customers and Applications

Applications

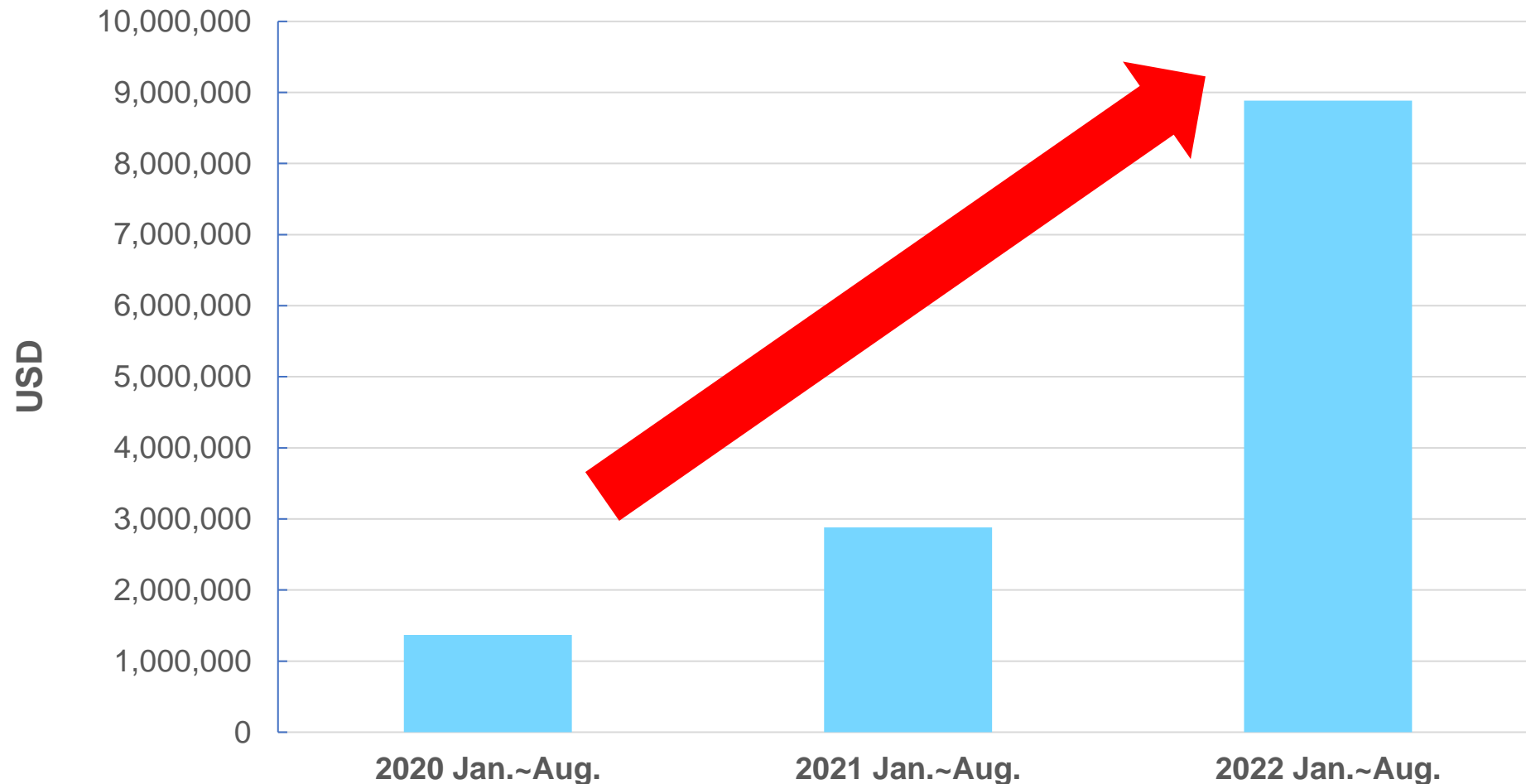


2020~2022 Revenue



Note: July/Aug 2022 is the company's self-assessment

2020~2022 (Jan. to Aug.) YoY Revenue Comparison



Note: July/Aug 2022 is the company's self-assessment

IV. Market Overview

- **Market Trend**
 - source: TrendForce
 - source: Omdia
- **Role of PlayNitride at MicroLED ecosystem**

Market Trend (TrendForce)

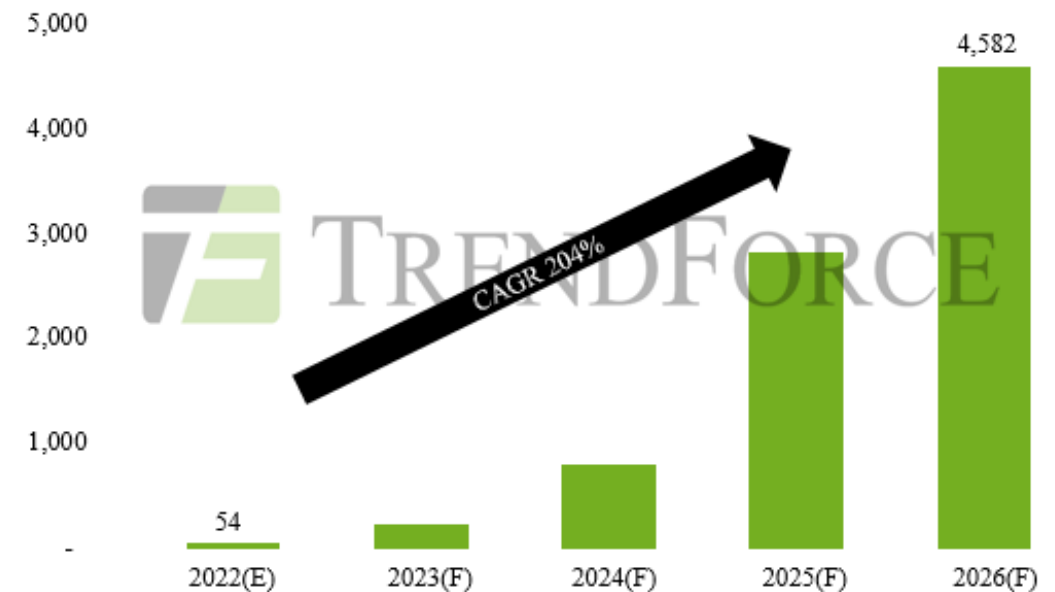
TrendForce : Locked in the home theater and high-end commercial display market, the output value of Micro LED large-scale display chips will reach 4.5 billion US dollars in 2026

19 January 2022

According to the latest research by TrendForce, Micro LED large-scale displays will enter the home theater level and high-end commercial display market. It is estimated that the output value of Micro LED large-scale display chips will reach **USD 54 million in 2022**; it is expected to rise to **USD 4.5 billion by 2026**, with a **CAGR 204%**.

With the advancement of time, technical obstacles will be overcome one by one. The development of Micro LED large-scale displays will enter a **peak period from 2026 to 2030**, and the output value of Micro LED chips in a single year has the opportunity to reach **tens of billions of dollars**.

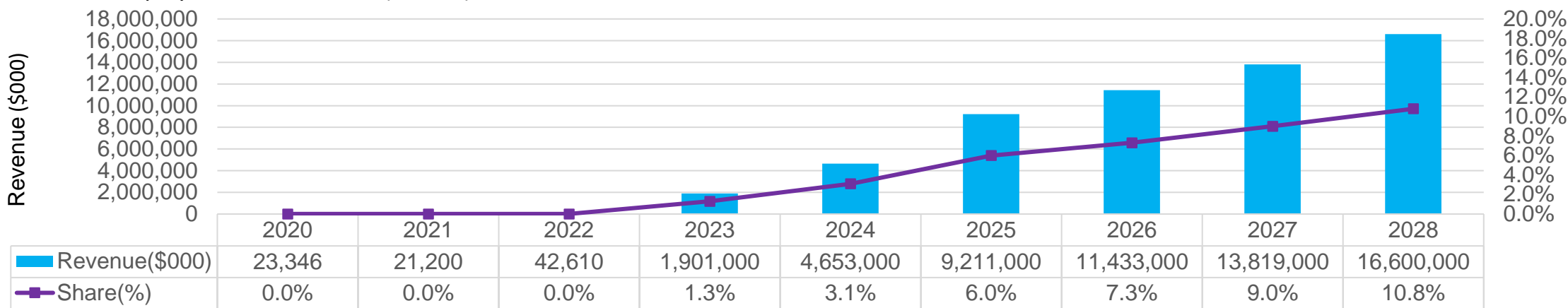
圖、2022~2026年全球Micro LED大型顯示器晶片產值預估（單位：百萬美元）



Source: TrendForce, Jan., 2022

Market Trend (Omdia)

Micro LED display revenue forecast (annual)



Source: Omdia

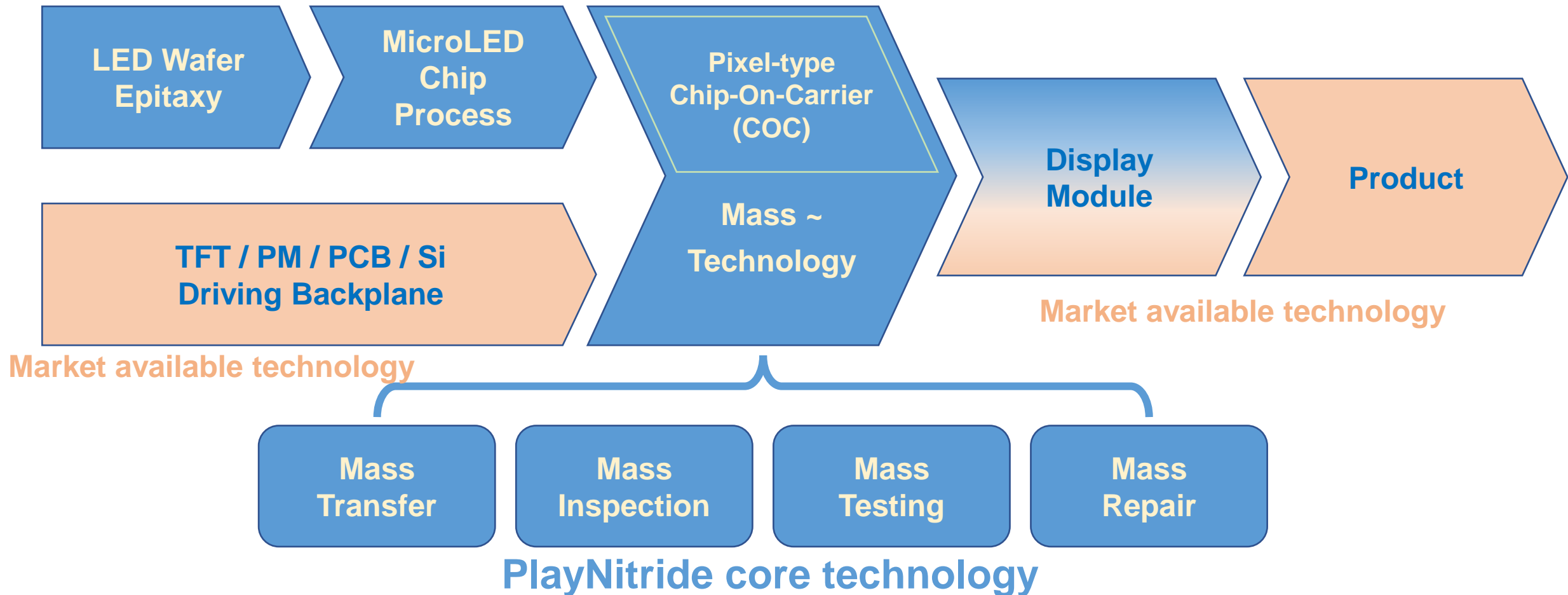
© 2022 Omdia

Annual revenue for micro LED displays was about \$21.2 million in 2021 and is expected to reach \$42.6 million in 2022. Revenue from micro LED displays will increase to \$16.6 billion in 2028 to account for 10.8% of the total FPD revenue, with a **159.1% CAGR** during 2021–28.

Annual shipments of micro LED displays were about 0.12 thousand units in 2021 and are expected to reach 40.4 thousand units in 2022. Shipments of micro LED displays will increase to 15.5 million units in 2028 to account for 0.4% of total FPD shipments, with a **439.9% CAGR** during 2021–28.

Role of PlayNitride at MicroLED ecosystem

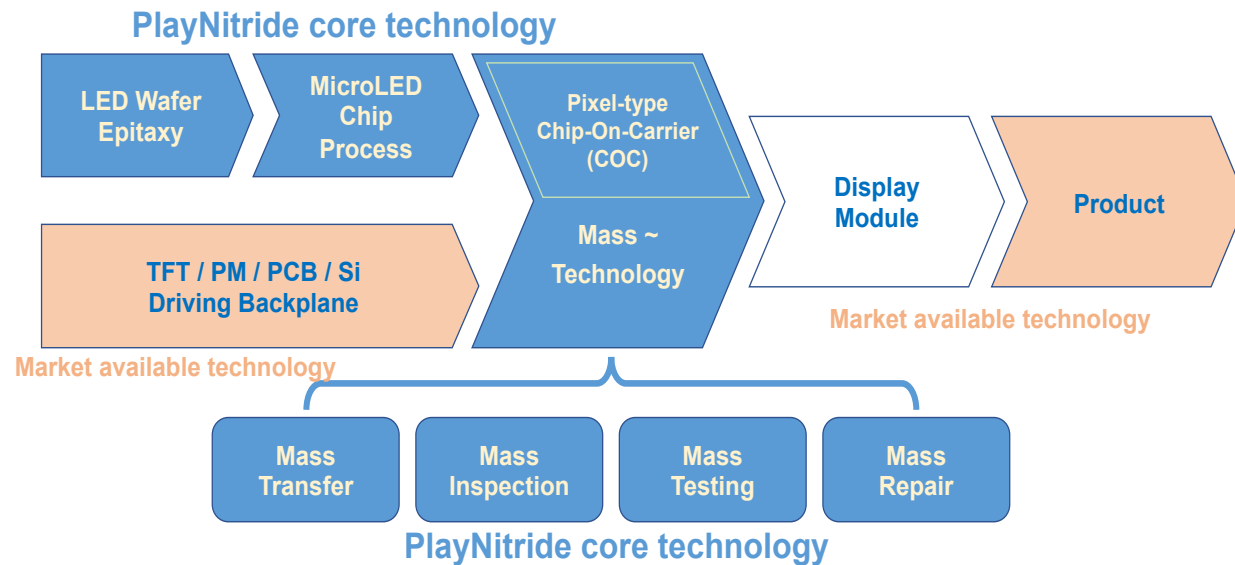
PlayNitride core technology



V. Competitive Advantage

- Long-term competitive advantage and differentiation
- Technical advantages

Long-term competitive advantage and differentiation



- PlayNitride is one of the few companies in the market that owns and integrates the key technologies of MicroLED displays → The company has complete technical know-how to quickly optimize production and solve new technical challenges
- In each technical link, PlayNitride has a strong team to innovate and develop
- PlayNitride is in a leading position in the market, and widely deploys patents and establishes know-how

Technical advantages

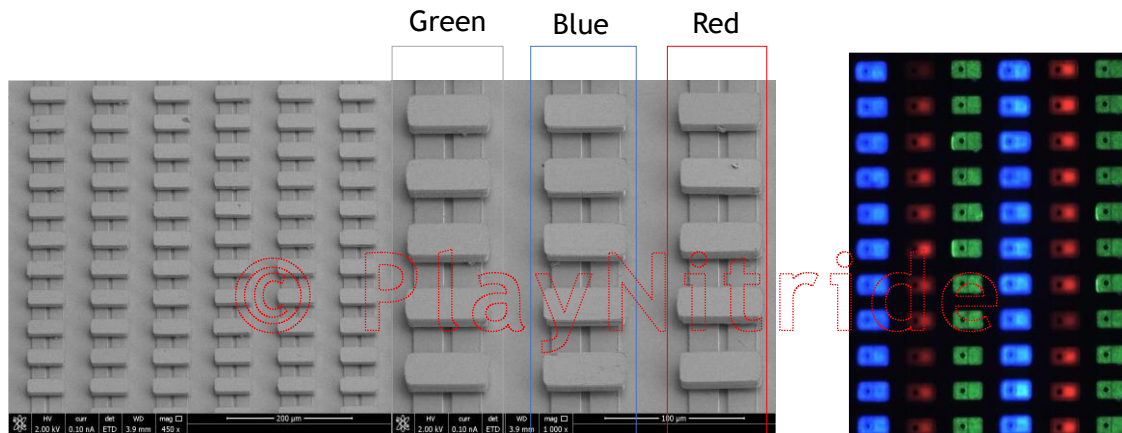
- High uniformity 6-inch R/G/B LED wafer
 - Uniform brightness across wavelengths, no need for binning
- High yield R/G/B MicroLED chips
 - Wafer yield > 99.5%
 - LED wafer utilization > 80%
- Industry-leading inspection and testing technology
- Industry-leading mass transfer technology
 - Self-made automatic mass transfer equipment
 - Massive addressing repair technology

VI.R&D Overview

- Core of R&D
- Patent advantages and portfolio

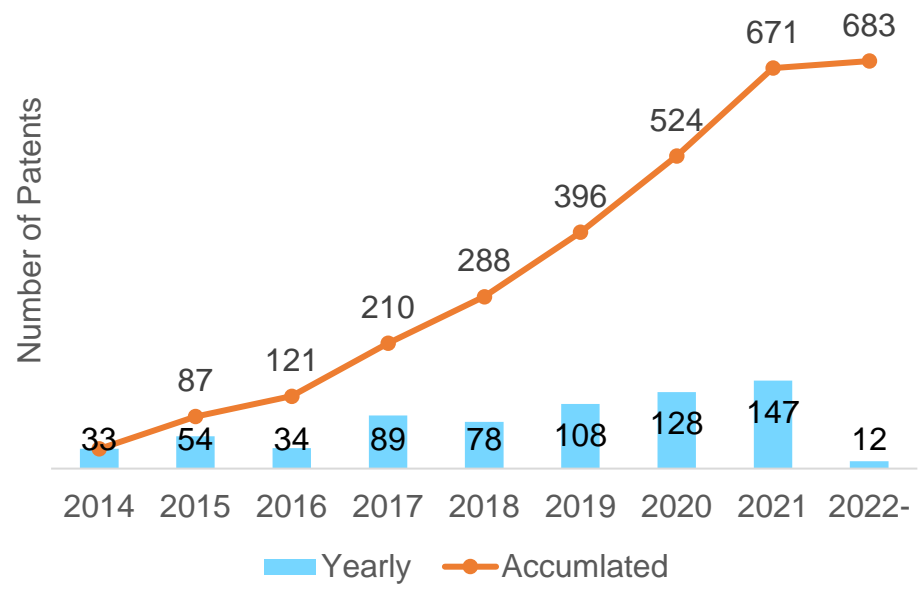
Core of R&D

- The research and development mainly focus on high-uniformity LED wafers, high-yield R/G/B MicroLED chips, high-precision MicroLED inspection technology, and high-yield mass transfer technology.
- Provide customers with self-developed MicroLED one-stop solutions. Currently, the company has cooperated with a number of industry-leading panel manufacturers and can provide various MicroLED chips (including ultra-micro, tiling, highly transparent, or flexible) to other customers with different applications to meet the design needs.

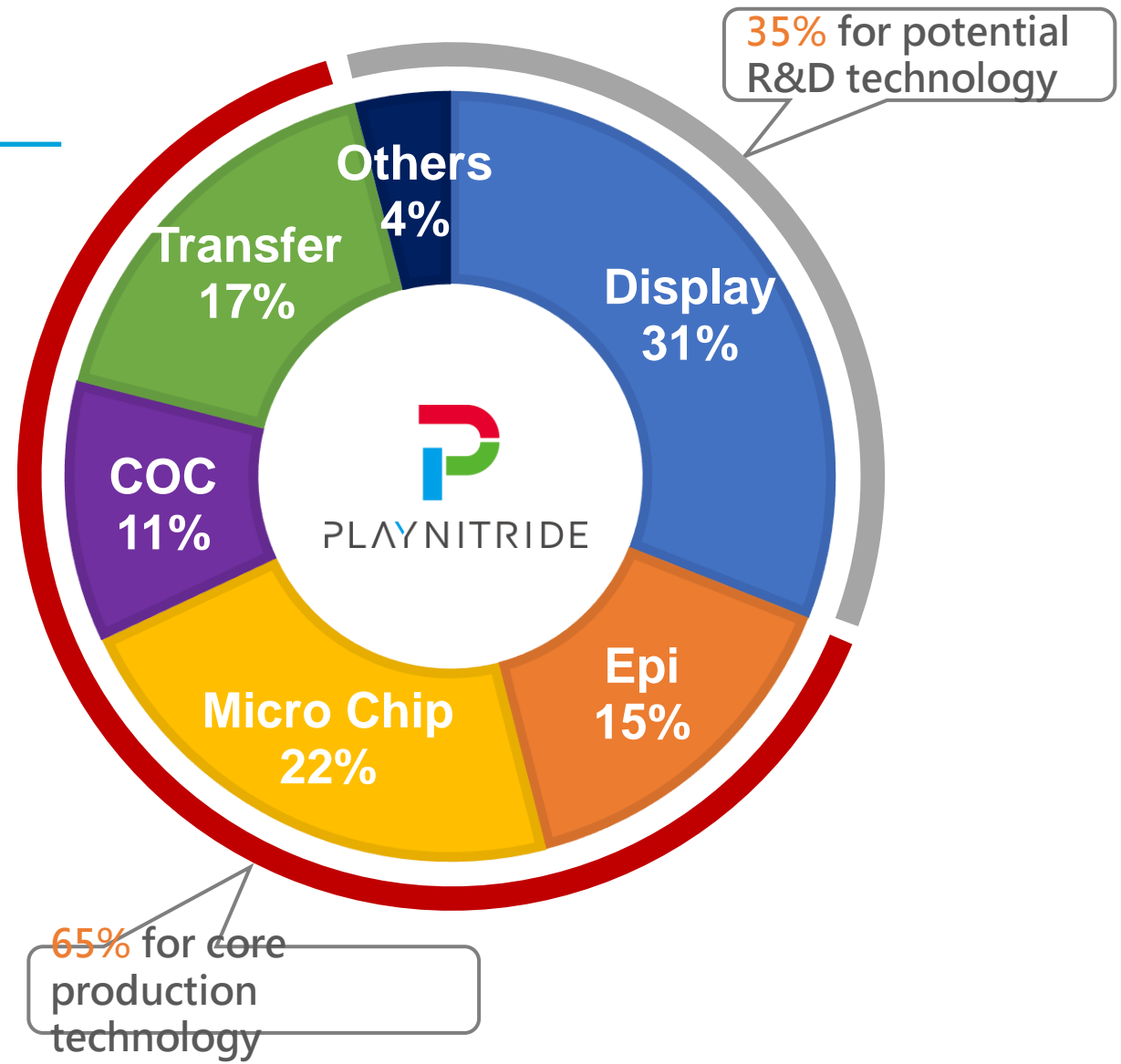


Patent Portfolio

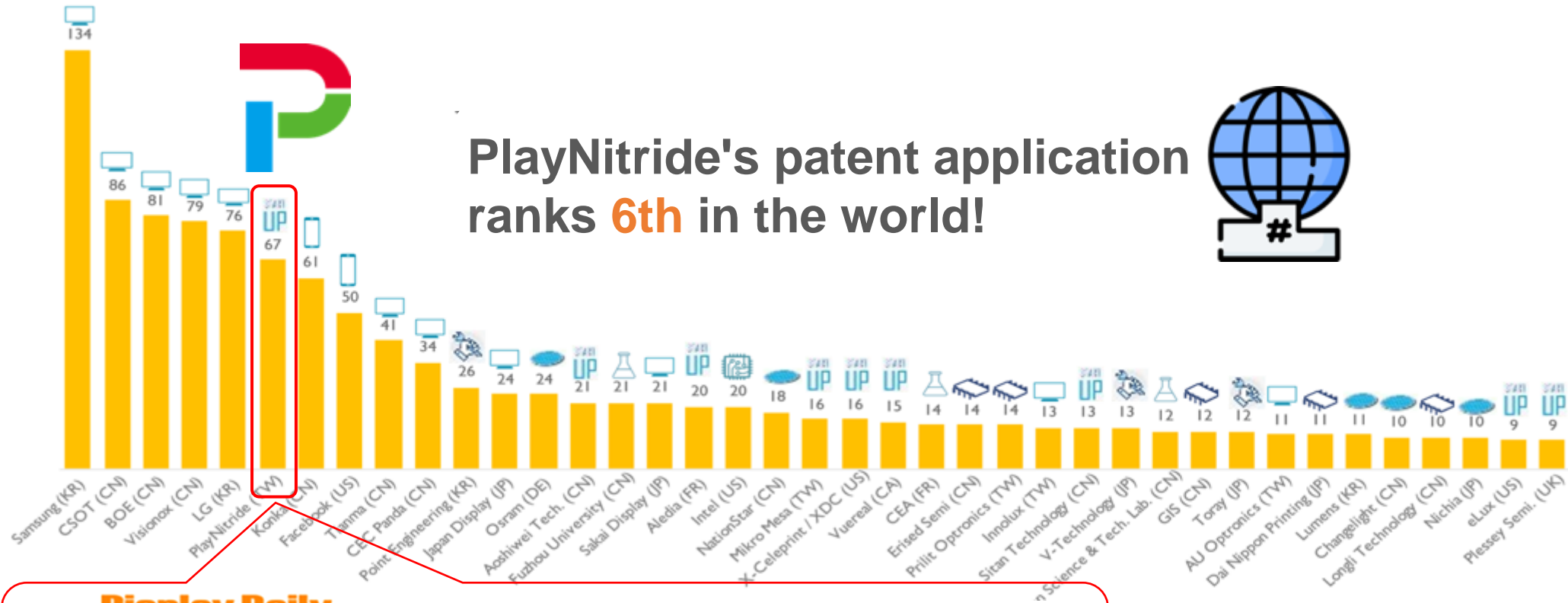
PlayNitride total patent applications reached **683** !
Covering the entire MicroLED ecosystem!



* Statistics as of January 2022



Global Patent Ranking



Display Daily

"PlayNitride is very active,
challenging leading panel makers or OEMs like
Facebook"

VII.Future Development

- Future Product Portfolio

Future Product Portfolio



Pixel type Chip-on-Carrier of large displays

•MP expected in 2022



Pixel type Chip-on-Carrier of commercial displays

•Pilot Run expected in 2022



Pixel type Chip-on-Carrier of automotive displays

•Sample expected in 2022



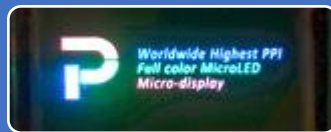
Flexible mid-size display for automotive

•Sample expected in 2022



Wearable display

•Sample expected in 2022



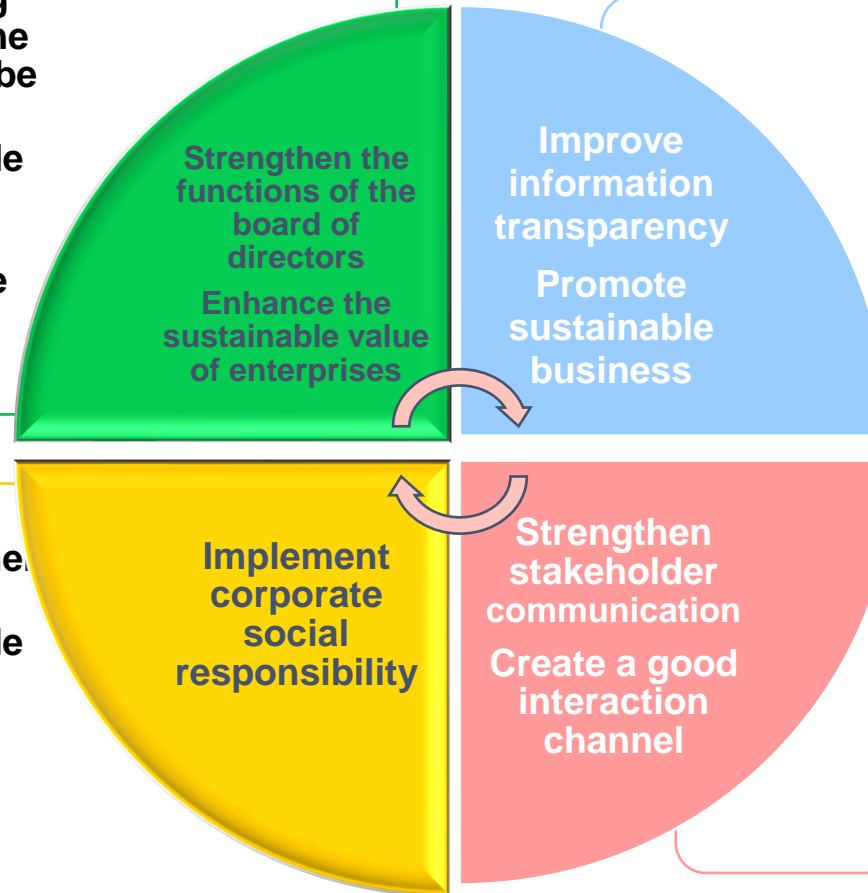
Micro-display for AR/VR

•Sample expected in 2022

Corporate Governance Operation & Public Welfare Participation

Corporate Governance Operation

- There are eight directors (including three independent directors and one female director), and there should be at least five directors.
- Formulate and implement the "Code of Practice on Corporate Governance"
- Take out director liability insurance
- Financial statements approved by the Audit Committee



- Set up a "Sustainable Development Committee" to plan and implement sustainable development strategies
- Compilation of Corporate Social Responsibility Report (SASB Report) in July this year

- Established a Greenhouse Gas Inventory and Reduction Management Team
- Formulate and implement the "Code of Practice for Corporate Sustainability"
- Disclose the identities of identified stakeholders, issues of concern, communication channels and response methods

- Set up a spokesperson system and establish a communication method for stakeholders on the company's website

Public Welfare Participation

Sponsor the San Franciscan United Way Garden Party



PlayNitride Cleansing Powerful & Hsinchu City Salutes the Sea – Autumn Beach Cleaning Activities

2020 PlayNitride responds to the "Earth Hour 60+ / Earth Hour" event



Certificate of thanks from Medecins Sans Frontieres & World Vision



茲感謝

鐮創科技股份有限公司 暨全體員工

支持無國界醫生全球人道醫療救援工作。

您的慷慨捐助讓我們能夠持續在救援最前線，為世界各地最需要醫療服務的傷病者，提供緊急醫療支援。

謹此致上最誠摯的敬意

財團法人無國界醫生基金會執行長 鄭荻芳



2022年6月15日

World
Vision
Taiwan

World Vision
台灣世界展望會

感謝狀

感謝 鐮創科技股份有限公司暨全體員工

響應台灣世界展望會「飢餓三十人道救援行動」，舉辦〈鐮創人超有愛—烏克蘭難民援助計畫〉。支持展望會在烏克蘭及鄰近國家的難民救援行動，幫助受烏克蘭危機影響的脆弱兒童獲得安全與保護。

特申謝忱



台灣世界展望會
北區辦事處處長 陳信吉



中華民國 111 年 06 月 20 日



THANK YOU

PLAYNITRIDE

