



Japan Display Inc.

# **Innolux, CarUX, & JDI eLEAP Strategic Alliance**

December 3, 2024

**Innolux (Taiwan), CarUX (Singapore), and JDI (Japan) Signed Today an eLEAP Strategic Alliance Agreement to Deliver eLEAP's Outstanding Performance to Customers Globally & Build Out a Global eLEAP Ecosystem**

**INNOLUX**



**CarUX**

**JDI**

***“Innolux and CarUX are committed to delivering the world’s best display products and solutions to our global customers. We believe eLEAP is a truly revolutionary display technology, and look forward to cooperating with JDI to present its outstanding performance to the world.”***

**Jim Hung**  
Chairman and CEO, Innolux



***“JDI has the deepest respect for Innolux and CarUX and their outstanding technology capabilities and extraordinary integrity. JDI is honored to work together with Innolux and CarUX to develop a global eLEAP ecosystem to serve their customers.”***



**Scott Callon**  
Chairman & CEO, JDI

# Combining Powerful Strengths & Capabilities to Drive Growth



- One of World's Leading Display Manufacturers
- Total Solution Provider with Comprehensive Product Range & Most Complete & Flexible Production Lines

**INNOLUX**

**eLEAP  
Strategic  
Alliance**

**JDI**

- Japan's Leading Display Technology Company
- Particular Strengths in Advanced Display Technology Development & Manufacturing

- Global Leading Tier 1 Automotive Display Solution Supplier
- Seamless Integration Capability & Innovative Technology



## CarUX and JDI Will Bring to Market a Revolutionary, Gamechanging Automotive-Grade Display Combining Two World's Firsts

**eLEAP**  
×  
**HMO**

- World's First Lithographic Maskless Deposition OLED
- World's First HMO (High Mobility Oxide) Backplane



## New eLEAP+HMO Technology Cuts Power Consumption by 76%, While Increasing Display Resolution by 12%, Brightness by 15%, & Contrast by 690X

	JDI Automotive-Grade LCD	JDI Automotive-Grade eLEAP
<b>Spec Outline</b>	LCD 32 inches	eLEAP 32 inches
<b>Resolution</b>	5760 x 1080 pixels 183 ppi	<b>6460 x 880 pixels</b> <b>205 ppi</b>
<b>Backplane Technology</b>	LTPS	<b>HMO</b>
<b>Brightness</b>	870 cd/m <sup>2</sup>	<b>1,000 cd/m<sup>2</sup></b>
<b>Power Consumption</b>	58 W *1	<b>14 W *2</b>
<b>Contrast Ratio</b>	1,450:1	<b>1,000,000:1</b>

**Underlying Technologies**

**eLEAP**  
Lithographic  
Maskless Deposition

&

**HMO**  
High Mobility  
Oxide



Japan Display Inc.

# Appendix: eLEAP Primer

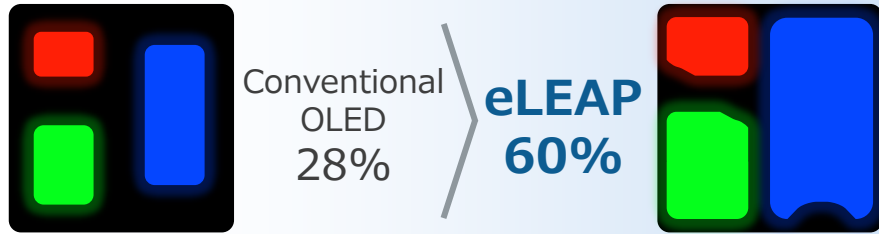


## eLEAP

- environment positive
- Lithography with maskless deposition
- Extr<sup>e</sup>me long life, low power, & high luminance
- Any shape Patterning



## High Brightness (2X)



Brightness, vividness & free shapes unimaginable with existing technology



## Long Lifetime (3X)

Lifetime Comparison	New 0h	After 1yr 1000h	After 3yrs 3000h	After 5yrs 5000h
Conventional OLED				
eLEAP				

※ Image assuming luminance deterioration due to 3h / day lighting with brightness equivalent to 600nit

**Using eLEAP's lithography with maskless deposition process instead of conventional OLED's FMM (fine metal masks) will reduce OLED production costs by c. 30%**



## eLEAP Panel Cost Reduction

- **No FMM purchasing costs or cleaning costs (chemical & water usage)**
- **No FMM-related production downtime for replacing & maintaining FMMs = higher eLEAP fab utilization**
- **No FMM-related yield reduction or replacement costs**

**Maskless OLED deposition is a breakthrough, environment positive production process that eliminates mask cleaning chemicals  
150k tons p.a. of CO2 emission reduction via deployment at JDI Mobarra**



**150k tons of yearly CO2 emissions =**

**CO2  
Absorption  
Volume  
of 17M  
cedar trees**



**Cedar forest  
the size of  
3.7k Tokyo  
Domes**

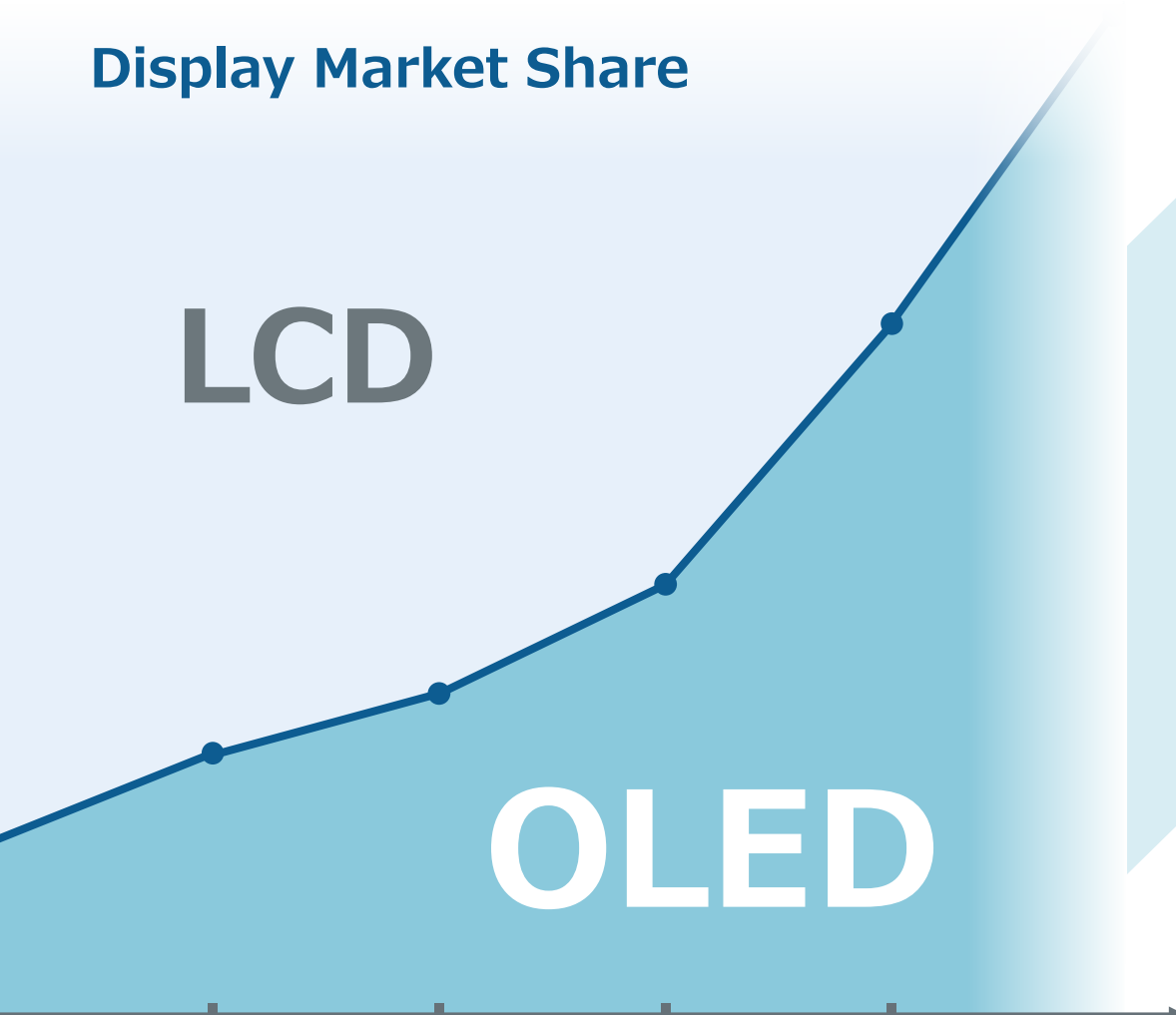


CO2 emissions are JDI's calculations based on G6 Mobarra plant at 30 k sheets/month

# OLED Is The Winning Display Technology ①

Due to its superior performance & continuing cost reductions, OLED is positioned to become the overwhelming display market leader

Display Market Share



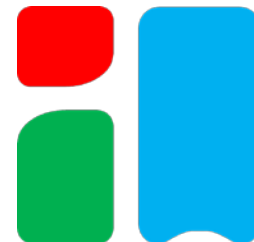
LCD

OLED

OLED Is The Winning Display Technology

And

eLEAP Is The Winning OLED Technology



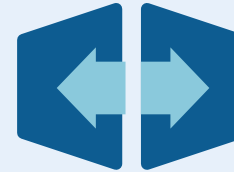


**Unlike LCDs that require backlighting, OLED displays have self-illuminating, organic pixels, offering unparalleled viewing experience**

**Beautiful, Fully Natural Organic Color Palette**



**Ultra-Wide Viewing Angles**



**Superb Video Performance (Extraordinarily Fast Refresh Rates)**



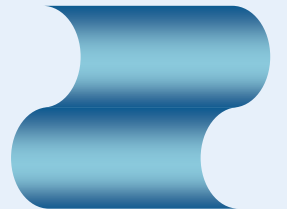
**Perfect Blacks (No Greying from Backlight)**



**Ultra-Thin, Lightweight, Low Power (No Backlight)**



**Fully Flexible & Customizable (LCD = Rigid)**



## Across Smartphones, Automotive, and Notebook PCs (and also other market segments), the market leaders have all begun the shift from LCD to OLED in order to deliver best-in-class display performance for their customers

The major global smartphone brands have all shifted their high-end models to OLED a number of years ago. They are continuing this OLED shift across-the-board and being joined by competitors in order to stay relevant in the highly competitive smartphone market.



**Smartphones**

Leading European and US brands are beginning their shift to OLED displays, especially for high-end models, while indicating that OLED is central to their future display technology roadmaps across-the-board.



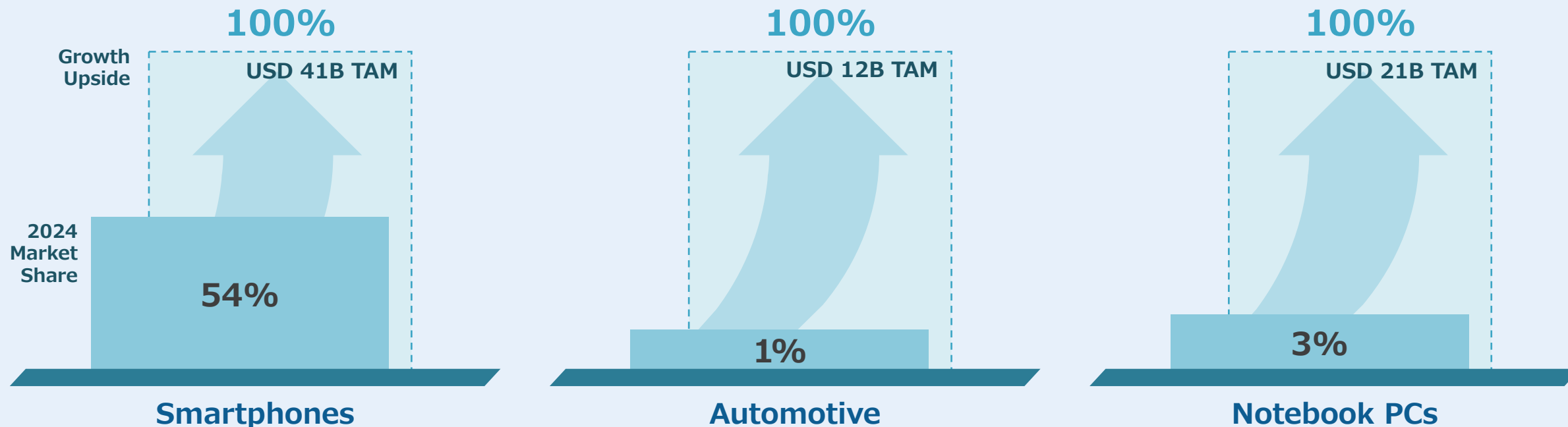
**Automotive**

Nearly all major global top brands for notebook PCs have started including OLED as a high-end option. While OLED was originally reserved for gaming & professionals, OLED is now also being rolled out in mid-range products.



**Notebook PCs**

**As OLED continues to replace LCD and take market share, the growth upside is massive**





## Despite Its Superb Performance, OLED Has Inherent Issues

These issues make OLED dysfunctional for a wide variety of display applications



**Short Lifetime**

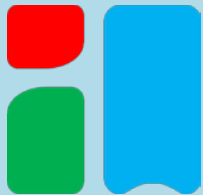


**High Production Cost**



## eLEAP Powerfully Moves OLED Forward

eLEAP keeps all of OLED's advantages while solving its shortcomings



**eLEAP**

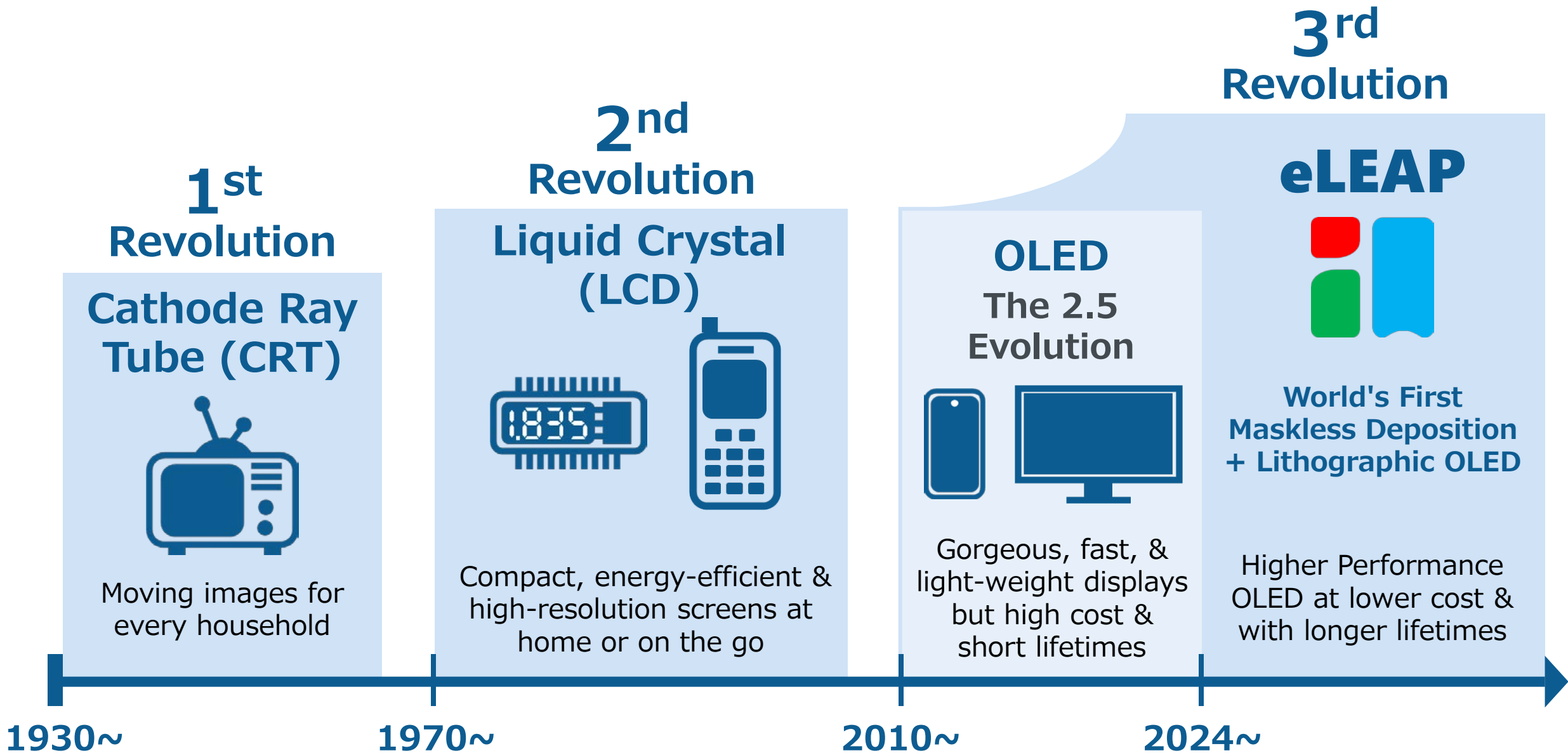


**Long Lifetime**



**Low Cost**








# **PersonalTech For A Better World**



# Thank You!

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