The worldwide transition from plasma to LCD/LED technology in the digital signage market that creates immense opportunities for the companies willing to capitalize on this trend.

In this context, OptIntegral project addresses the need for sustainable industrial manufacturing processes of LED displays, specifically responding to the market technological demand for simpler device integration by efficient and low-cost manufacturing methodologies.
Benefits of the novel in-mould hybrid integration for new displays solutions.

OptIntegral will provide evidence of the advantages of the novel in-mould hybrid integration for displays manufacturing, by:

**Flexibility**
To show the flexibility of the OptIntegral embedding technology to manufacture a diversity of display concepts by developing three groups of different demonstrators (retail, transportation & hospitality).

**Cost reduction**
To proof a cost reduction for OptIntegral displays of at least 40% per sqm due to the use of un-packaged LEDs (10% savings), replacement of manual assembly by in-mold integration (15% savings) and the use of low cost flexible electronics substrates (15% savings).

**Environmental efficiency**
To demonstrate the environmental efficiency of the OptIntegral manufacturing model for advertisement displays by a 50% of Green House Emissions reduction, due to the energy efficiency brought by the optimal optical design for LEDs usage and to the transport of lighter goods.

**Time-to-market reduction of 40%**
To demonstrate a time-to-market reduction of 40% in the industrialisation stage of LED displays, since optics and the modules are manufactured in the same integration stage.

**Explotaible results**
OptIntegral delivered 3 exploitable products:

**Black-light display**
High resolution 2D display wall for larger viewing area (up to 160 degree), with lower thickness and weight, and efficient light and lower power consumption. 
**Market Applications:** advertising, information displays, large venue events, TV studios.

**3D-display**
A new high-density, glasses-free 3D LED wall display applying novel lens design and manufacturing technology, achieving an innovative visual tool for large-scale digital signage and with a lower power consumption. 
**Market Applications:** digital signage, advertising, architecture, large venue events.

**Light pipe display and flexible RGB display**
Improved Light Guide display and Flexible RGB lighting, for large areas, with lower production costs and higher flexibility due to the reduced thickness enabled by over-moulding and in roll-to-roll technology. 
**Market Applications:** transportation vehicles, architecture, general lightning.
Technological objectives

- Test and validate reproducibility and yield
- Design protocols
- Develop advertisement displays demonstrators
- Test and validate large area displays demonstrators

Partners

OptIntegral consortium comprises 9 European partners from 5 European countries and it balances the active participation of small & medium enterprises together with technological centres.

The consortium brings together a wealth of expertise and resources within the areas of advanced manufacturing, moulding process, flexible electronic, display manufacturing, sustainable industrial production technologies, human-product interaction, advertisement and standardization all joint under the vision care industry.
EU PROJECT
The research leading to these results has received funding from the European Union’s Programme Horizon 2020 under grant agreement No 643956 – OptIntegral