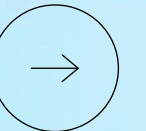




# The Missing Link

## *Micro-optics implementation in AR Development*

**Olga Resnik** | Co-founder at JOYA Team



# technologies



JOY TEAM



ideas



# With 100 Years of accumulated experience

*We make optics work for you*



- ✓ R&D team of physicists and optical engineers
- ✓ Over 50 startup and large tech company customers
- ✓ Customers and partners from Israel, EU, US and Asia

# Some of our AR projects

SIGHTFUL



MindsView



Brilliant Labs



Elbit Systems™ SkyLens



Augmedics



TARGO



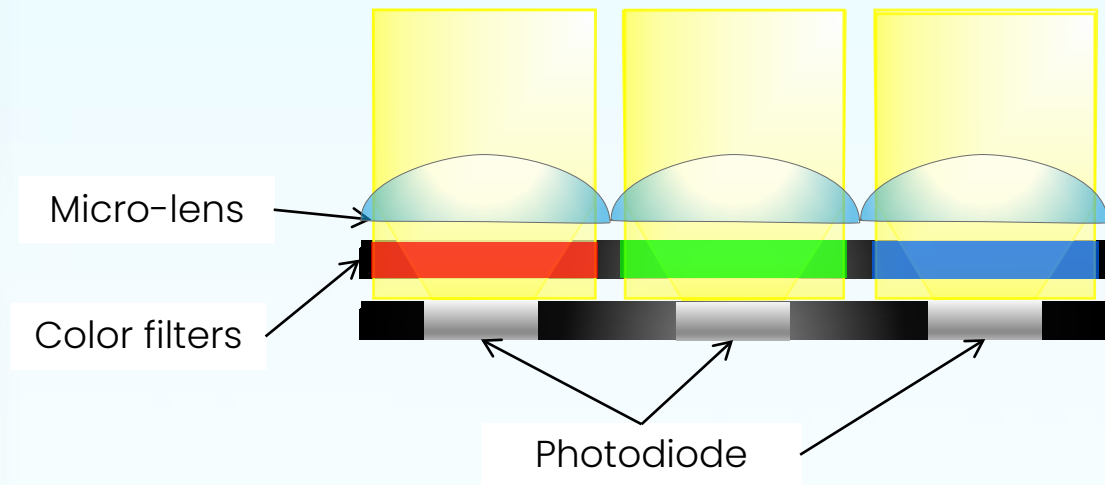
# Micro-optics in AR – Applications

## *Matching Between Optics & Light Collection*

- **Camera Sensors**
- **Eye Tracker**
- **Ambient Light Tracker**
- **Various Sensing Applications**

### **Control & Shape Sensing NA**

- Improves Efficiency
- Increases Effective Fill Factor
- Improves SNR



# Micro-optics in AR – Applications

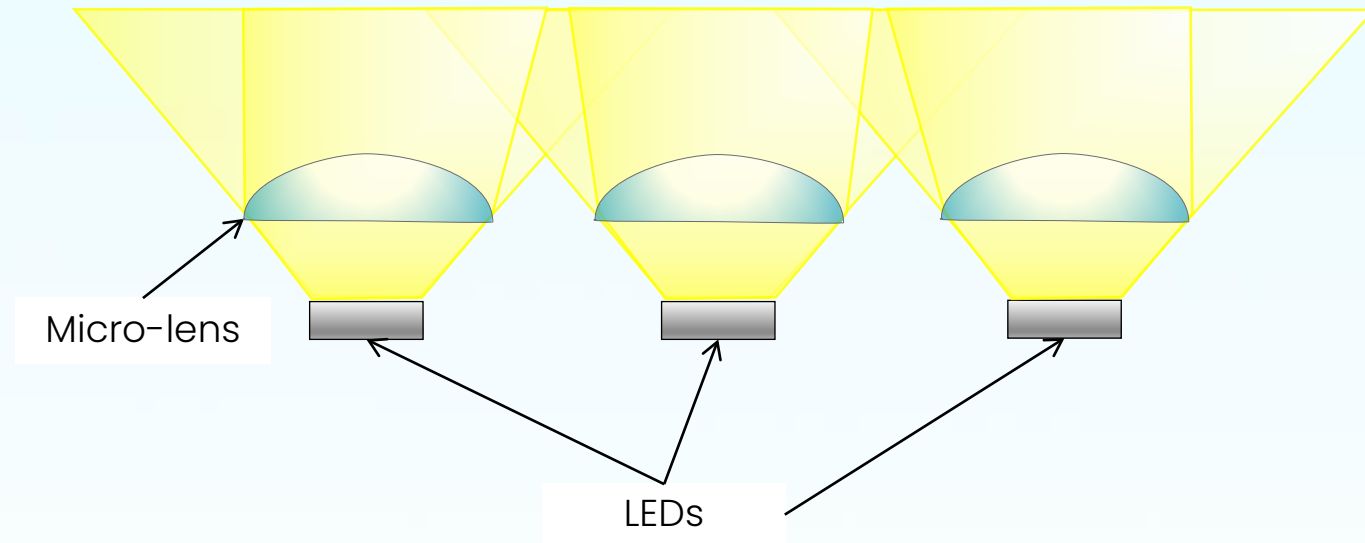
## *Matching Between Optics & Illumination*

### Illumination for micro-displays:

- LCD
- LCoS
- DLP
- More...

### Control & Shape Illumination NA

- Improves Efficiency
- Improves Contrast
- Reduces Stray Light



# Micro-optics in AR – Applications

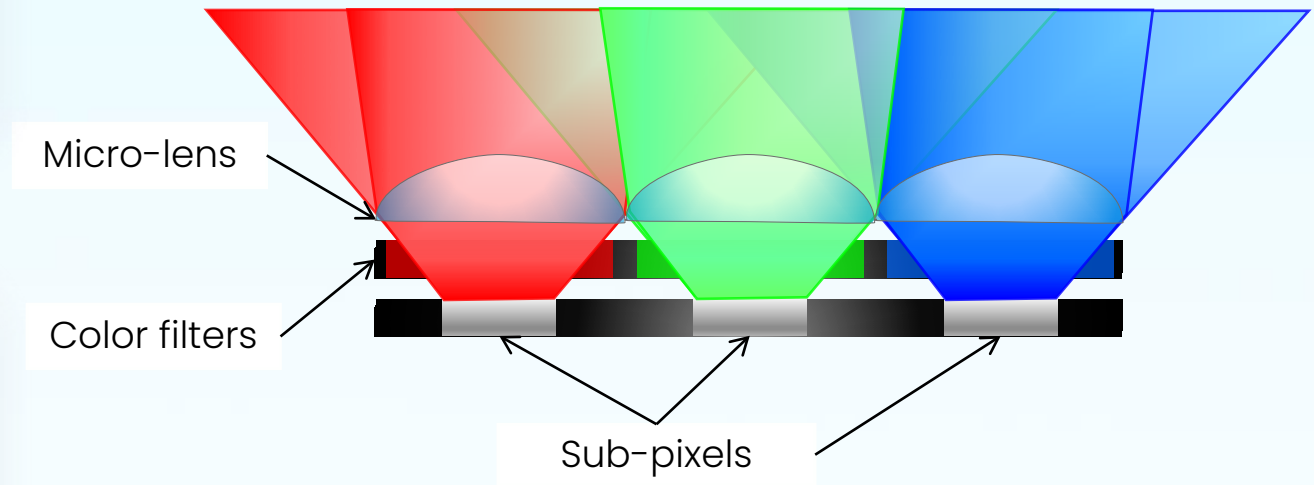
## *Matching Between Optics & Image Source*

### Micro-displays:

- OLED
- $\mu$ LED
- Other high NA displays

### Control & Shape Image Source NA

- Improves Efficiency
- Improves Contrast
- Reduces Stray Light





# Optical System Level – Smart Illumination Design

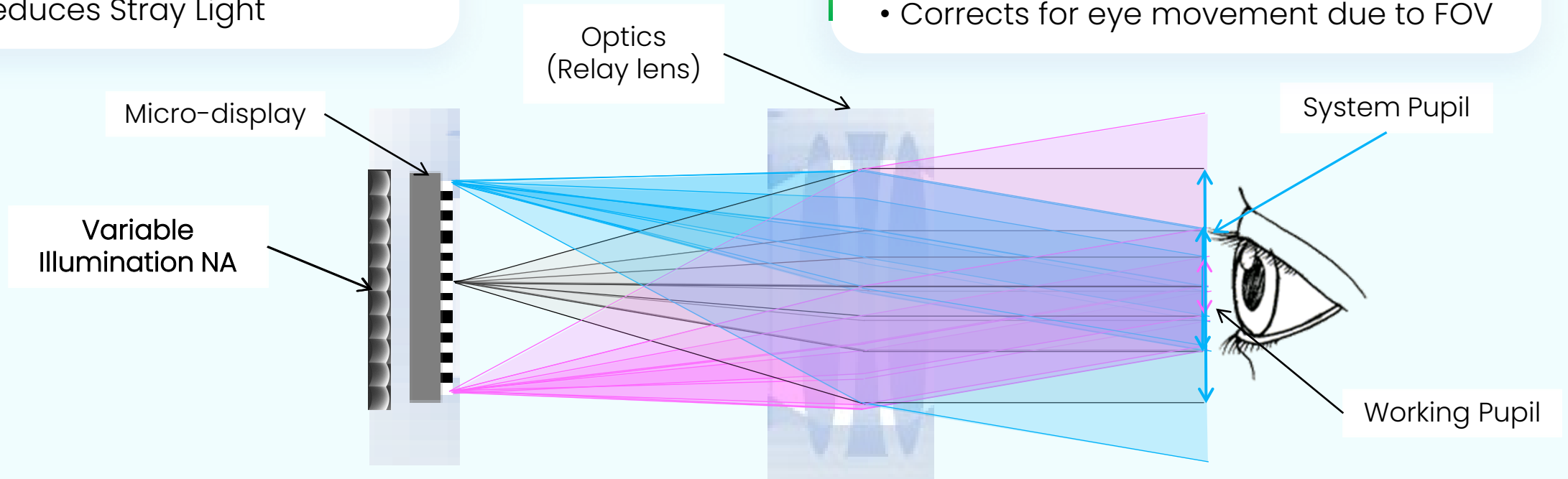
## *Matching Between Optics & Illumination & System Pupil*

### Exit Pupil Aiming

- Improves Efficiency
- Improves System Contrast
- Reduces Stray Light

### Working Pupil Aiming & Tracking

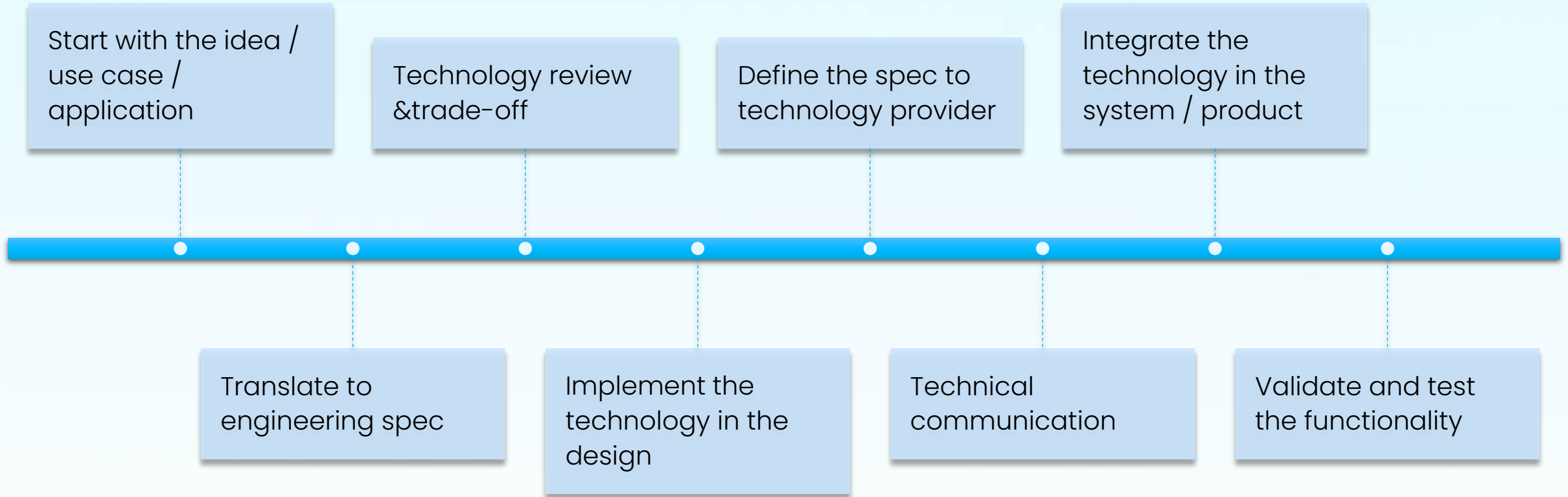
- Reduces “Eye glow”
- Solves the personal fitting problem
- Corrects for eye movement due to FOV





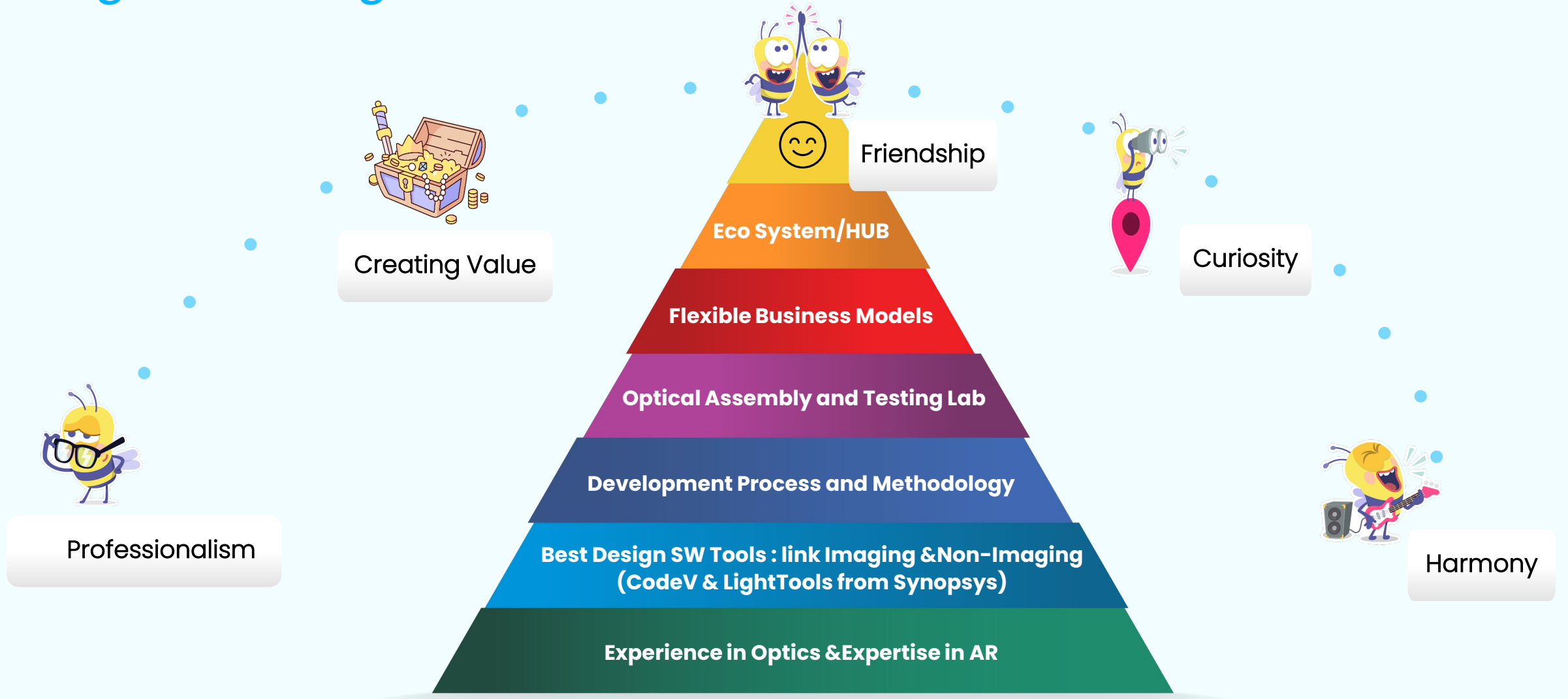
# How we link between Ideas and Technologies?

## *Step-by-step process*



# Our Tools and Infrastructure

## *Doing and Being*



*"Coming together is a beginning;  
keeping together is progress;  
working together is success."*

Henry Ford

