AR for the Industry
Summary

Why it makes sense to display information directly where it is needed

Possibilities that exist to accomplish this

Challenges that still have to be overcome
Why

The way we interact today

Screens
Why

The way we interact today

Screens
Keyboards
Why

The way we interact today

Screens
Keyboards
Mouse
Why

The way we interact today

Screens
Keyboards
Mouse
Tablet/Smartphone
Is this the final stage?

Intuitive?

Comfortable?
Is this the final stage?

You need to go to grab activate your Technology.
Is this the final stage?

You need your Technology

Why doesn’t it follow you?
Shortcomings

Information where you need it?

Information when you need it?

Physical world separated from the digital one?
Applications

Warehouse

Maintenance

CAD

Training

Remote support / Collaboration
Technology should be available when and where you need it, and disappear otherwise.
Advantages

- Reduced error rate
- Speed
- Reliability
- Safety
- Flexibility
- Adaptability
- Enthusiasm

Resource: “Augmented reality in warehouse operations: Opportunities and challenges” by Marie-Helene Stoltz, Vaggelis Giannikas, Duncan McFarlane, James Strachan, Jumyung Um, Rengarajan Srinivasan
Ways to achieve this

Wearable

Fixed
Wearable headsets

Microsoft Hololens
Magic Leap
Epson Moverio
Sony SmartEyeglass
etc.
## Analysis

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<th>Applicability</th>
<th>Pros</th>
<th>Challenges</th>
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<td>Jobs on the move</td>
<td>Full immersion</td>
<td>Wearing permanent weight</td>
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<td>Servicing installations</td>
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<td>Natural placement of interfaces</td>
<td>Content creation requires specialized tools</td>
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Fixed devices
## Analysis

### Applicability
- Office desk
- Fixed work place
- Assembly line
- Counter
- Prototyping

### Pros
- No weight on head
- Content creation standardized (HTML5)
- Object recognition simpler

### Challenges
- No 3D
- Limited physical range for 1 device
Common challenges

Create new content
Integrate existing content
Computer vision – recognizing reality
Ways to measure efficiency
Example

Product search – CADENAS database
Example

Process support – producing cables
Example

Process support – cooking

Japanese Green Tea Soy Milk Blancmange

- soy milk: 1 cup
- milk: 1/2 cup
- confectioners' sugar
- green tea power: 1 tsp
- unflavored gelatin powder: 1 tsp
- heavy whipping cream: 1 cup
- 6 tbsp

Prep: 10 m
Cook: 5 m
Total: 1 h 15 m

To start, place all ingredients in their corresponding spaces above.
Example

User interface prototyping
Conclusions

Potential for enhancement of human workplace

Wearable / Fixed

Content

Computer vision
Thank you!

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