



CDI-Team 4: Andreas Bachmeier,  
Matthias Clad, Etienne Hatton,  
Adrien Tannhof, Karen Wintersperger



# Air Liquide Welding 4.0



The background of the image is a close-up of a welding process, showing a bright, intense light at the point of contact between the welding torch and the metal, with a dense spray of orange and yellow sparks radiating outwards. Two white circles with dark blue borders are superimposed on the image. The left circle contains the text '- 30%' and the right circle contains the text '500M€'. Below each circle is a label in white text.

**- 30%**

**Welding Cost Savings**

**500M€**

**Revenue Potential for Ger/ Fra**

# Summary



## IDEA: Optimize welding using AI

Welding customers of AL are enabled to optimize the process: **Save costs and improve quality**

### SITUATION

- 86% of total welding costs are labor costs
- **Huge potential of digitalization:** Use welding data to optimize processes: Save up to **30% of costs**

### COMPLICATION

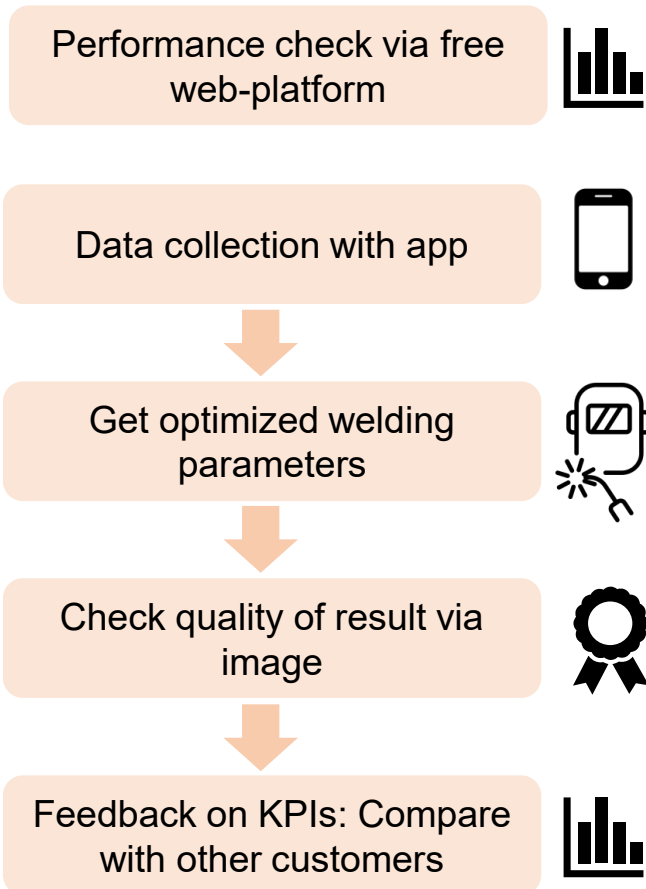
- How to access welding data?
- How to digitalize welding knowledge?
- Many customers **are not able to make full use of the data**

### SOLUTION

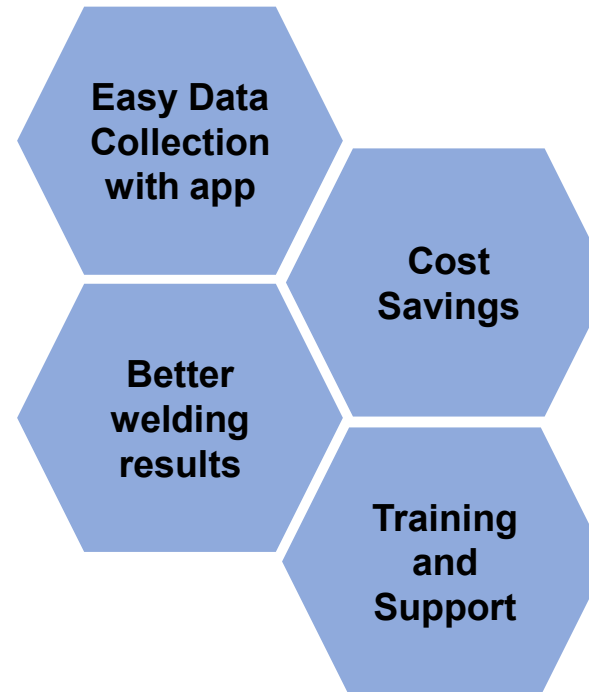
 **Air Liquide**  
**Welding 4.0**

# Value Proposition

## Welding Customer



## Welding 4.0



Customers subscribe for service

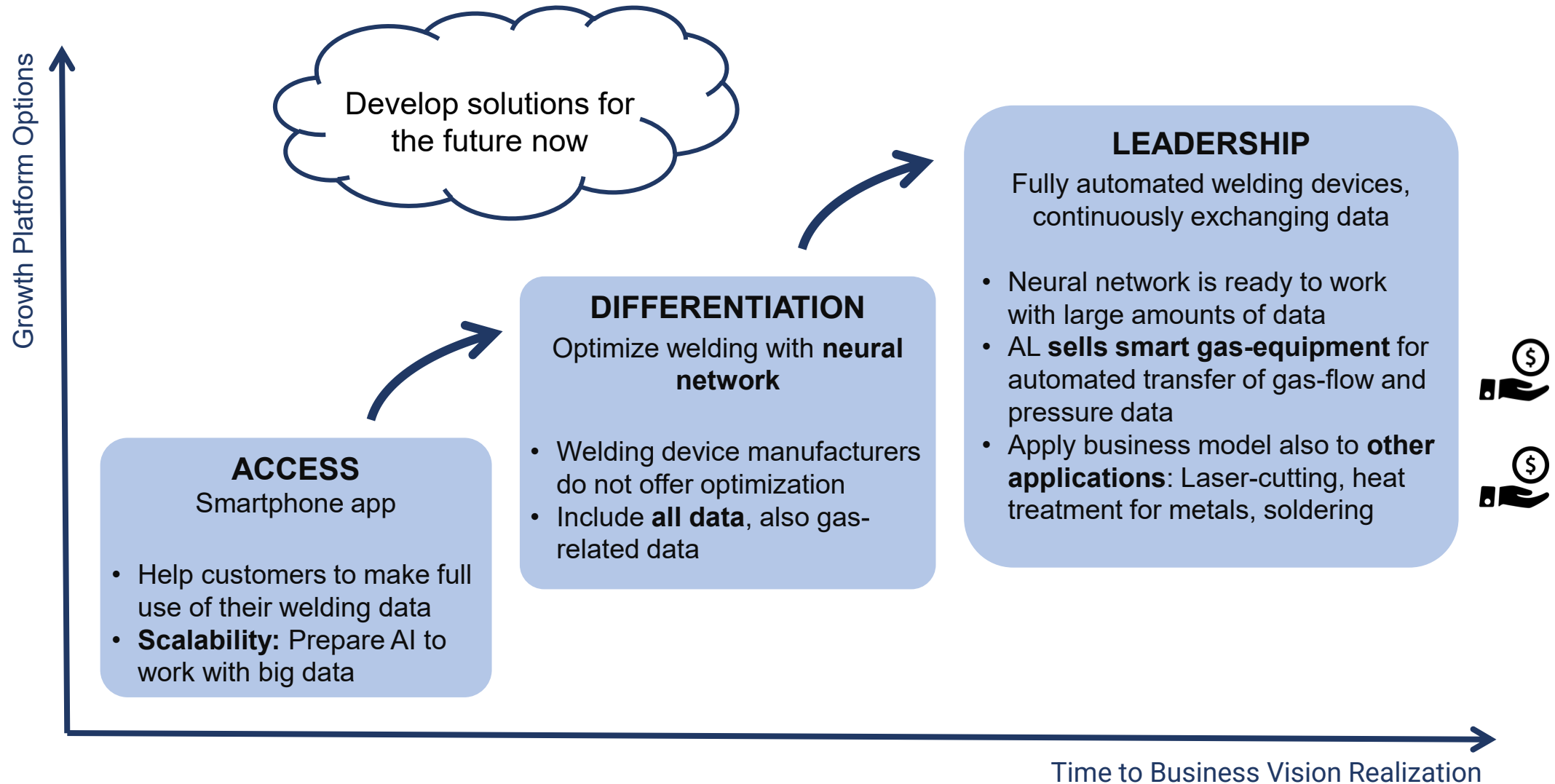
Optional: Sell/rent hardware

AL cloud: Neural network

- **Optimize welding result** for quality and efficiency
- **Digitalize welding knowledge**

Customers give feedback on app

# Vision for Future Development





# Partnerships

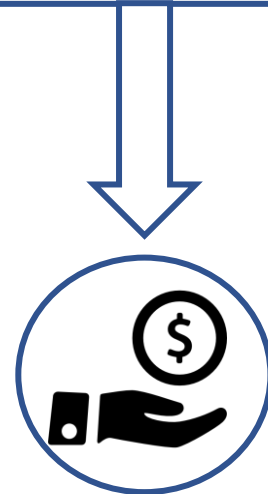


## Benefits for AL

- Development of **smart welding machines** working with AL solution
- **Influence and adapt to standards** in data transmission and processing

Development of **smart gas equipment** working with AL data solution

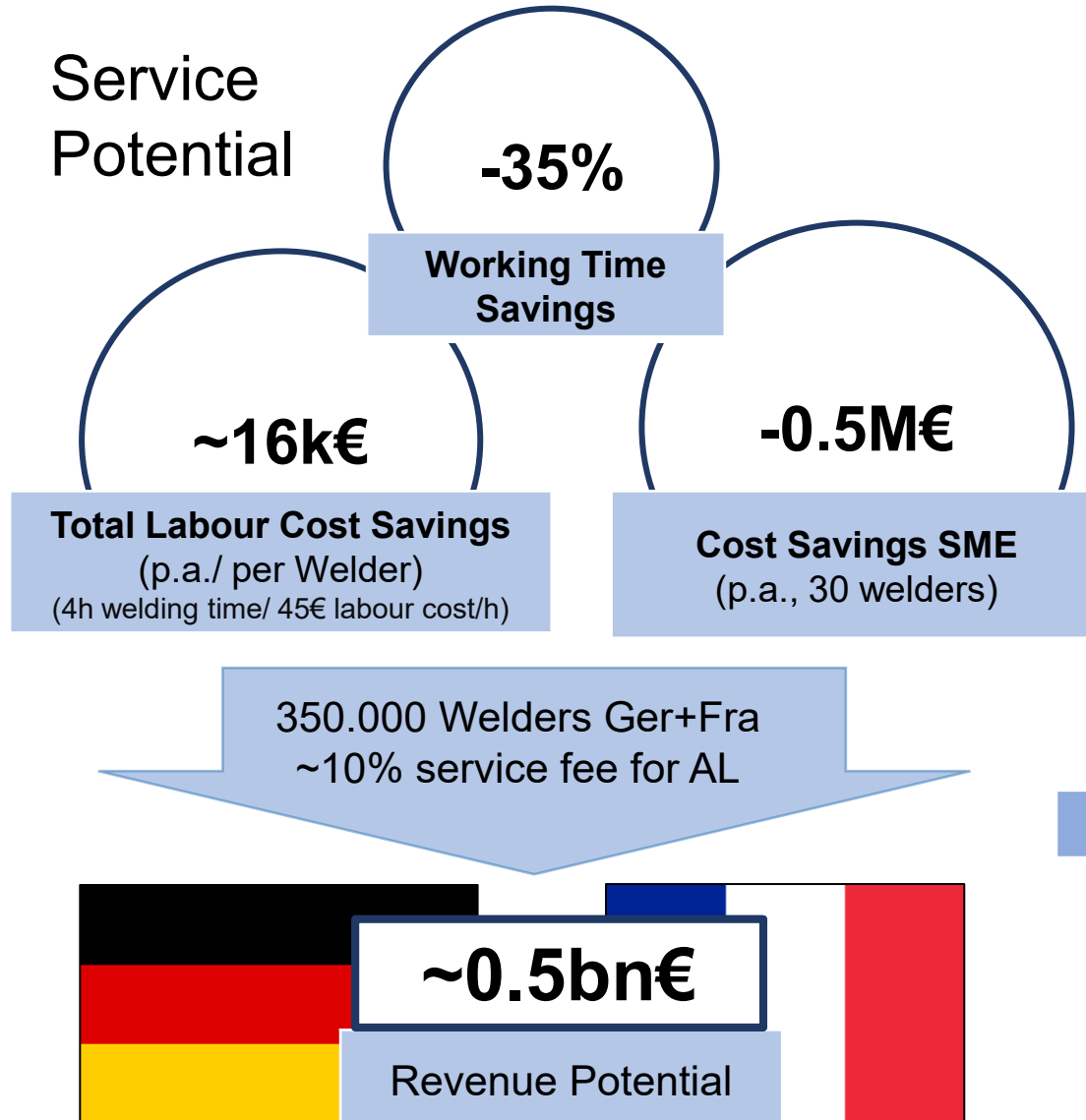
## Long-term Partnership



## Benefits for partners (gas and welding equipment)

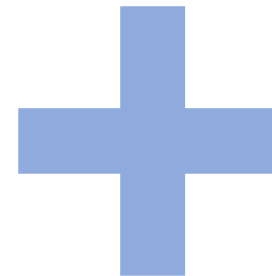
- Get **access to welding data**: Improve welding machines / equipment
- Use for **simulations** and to develop IoT devices
- Sell equipment to AL customers  
→ **get access to larger customer pool**

# Market Opportunity



Market Size 2027	CAGR
~\$27 bn*	5%*

\*fortunebusinessinsights.com/industry-reports/welding-market



**Gas Sales and Equipment Sales**  
(Smart and IoT Devices),  
Revenue from **other applications**



# Uncertainties

Potential lost value for Air Liquide



## Convincing the welding companies?

- Display cost savings & quality improvement
- Monitoring individual welder performance
- Offer help for transformation to I4.0



## Convincing the welders?

- Show how we improved other companies
- They can be even more efficient by using our app
- They can contribute to improve the app and help other welders



## Avoiding conflict with existing data recording solutions?

- Combine data recording & analysis
- First mover advantage
- Partner with manufacturers



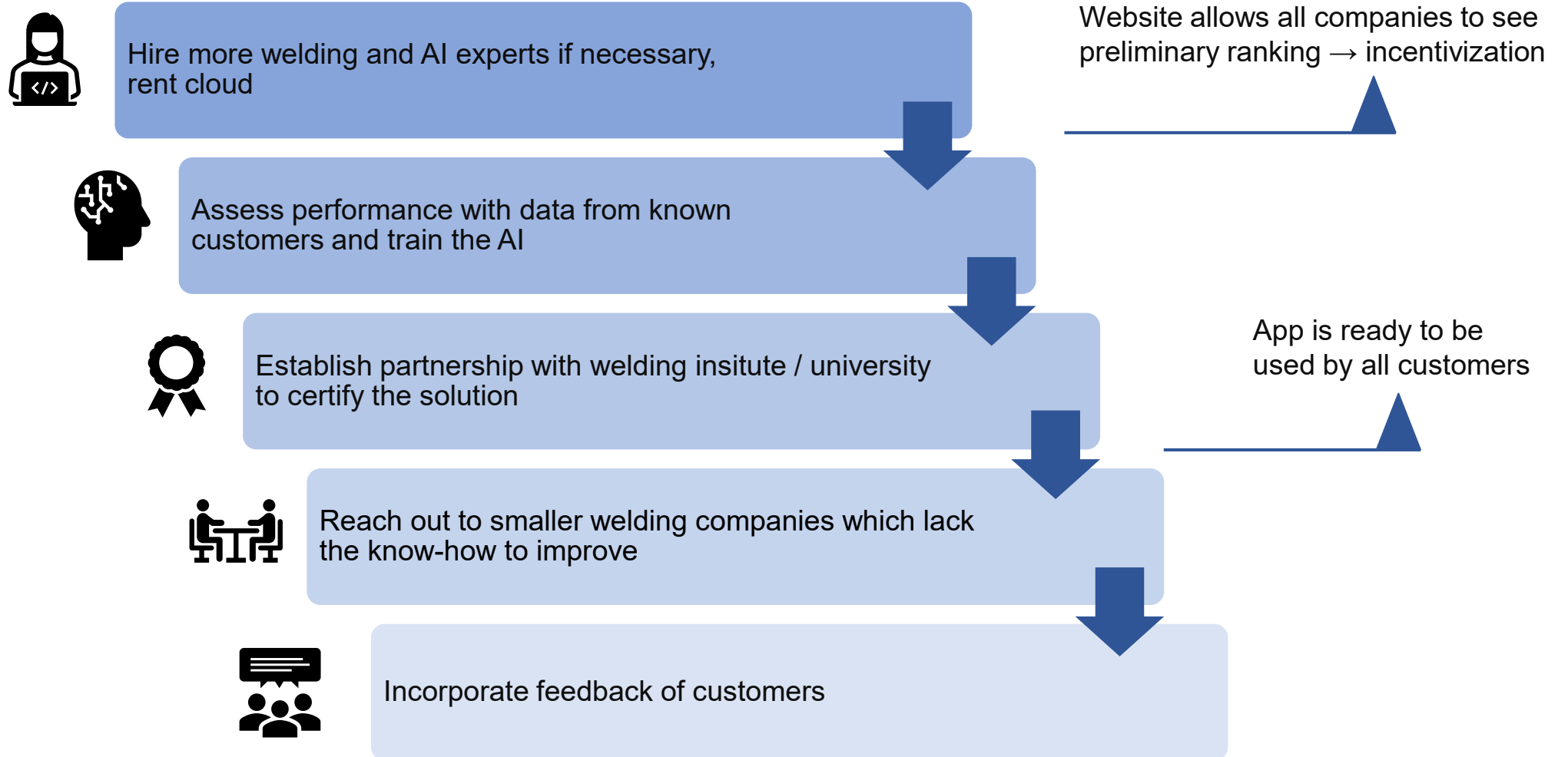
## Scalability?

- Apply the business model to other sectors (eg. Laser cutting)
- Fully connected IoT tools and equipment for I4.0





# Next steps





Thank you