ADDIGURU

Features and Benefits of In-Situ Monitoring of Additive Manufacturing Processes

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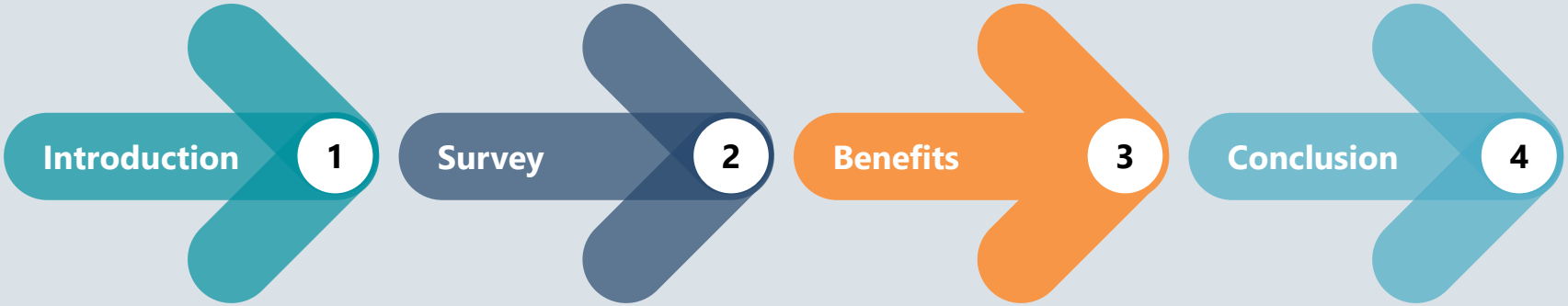
Overview



- Monitoring in AM
- Real-time monitoring

- Current state of solutions
- Value & Challenges

- Reduced waste
- Cost & time savings

- Recap key points

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Introduction

$70B
2030

$70B market share by 2030 with an average compound annual growth of 20.24%

High defect rate

Low adoption of technology due to the stochastic nature of the evolution of defects.

Real-time anomaly detection

Identification of defects is the first step towards making technology more reliable and increase adoption.

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Survey

01 People

- Demography
- Technology

02 Platform

- Sensors
- Solutions

03 Value

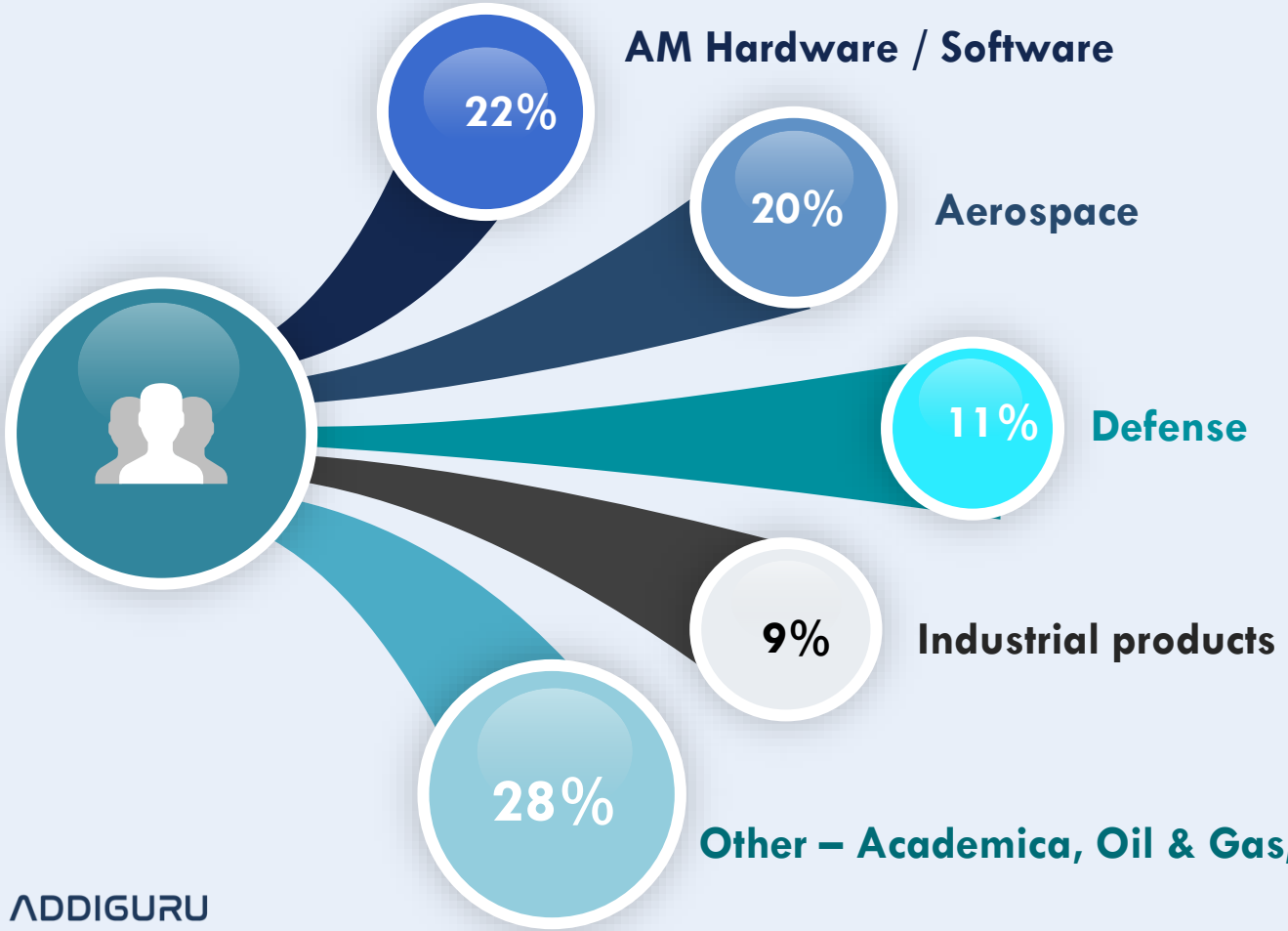
- Issue detection
- Time savings

04 Conclusion

- Challenges
- Features

Addiguru conducted an **independent survey** in partnership with TBGA to understand current state of real-time monitoring.

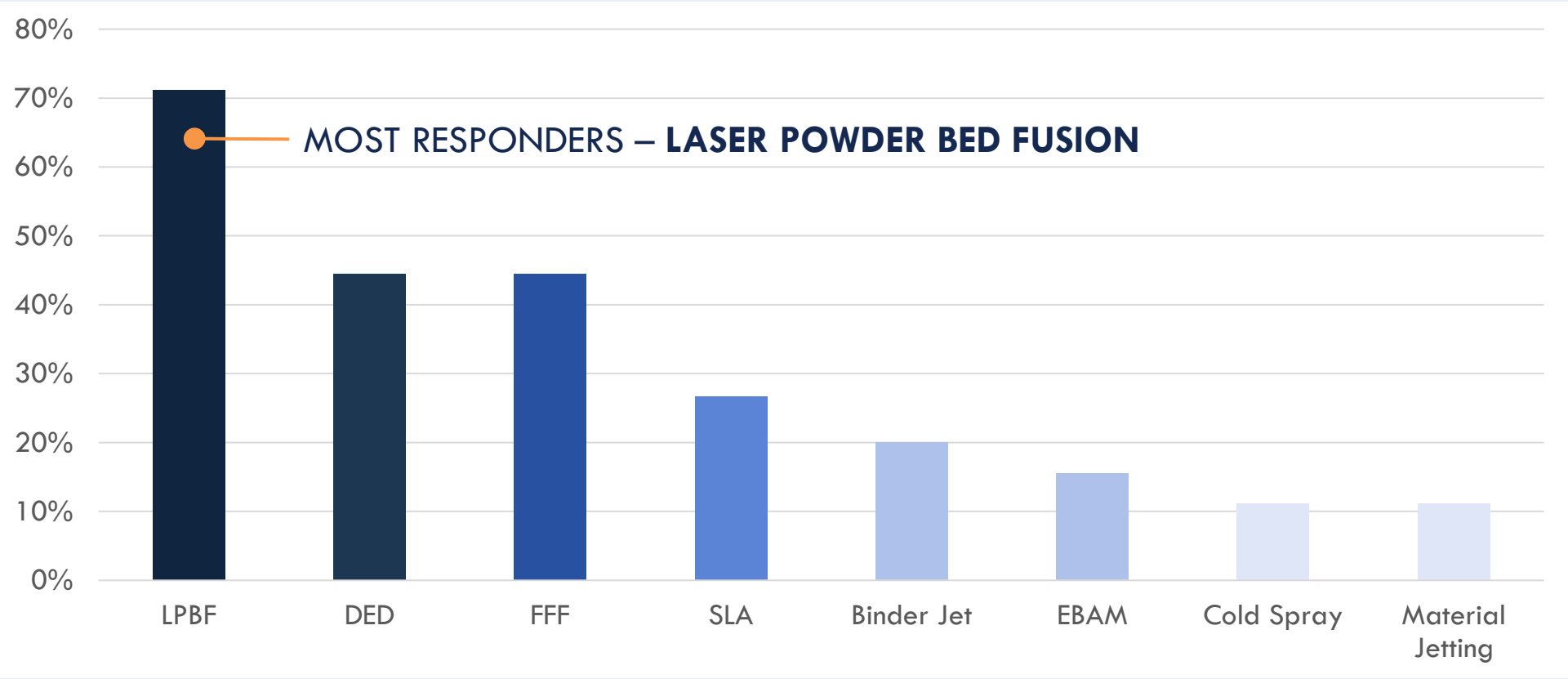
Demography



Over 80% of the survey takers had an **experience of 5+ years.**

40% of responders had **10+ years of AM experience!**

Survey Responders - AM Technology



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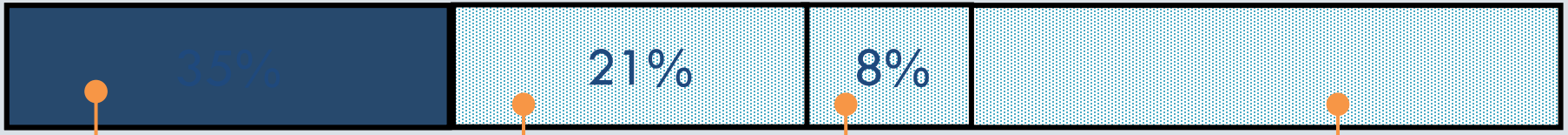
Solutions

65% responders used some sort of monitoring



NEVER USED REAL-TIME MONITORING

MANUAL INTERMITTENT INSPECTION BY OPERATOR

BUILT CUSTOM IN-HOUSE SOLUTION

EOS STATE ADDIGURU SIGMA LABS OTHERS

Significant need for real-time and automatic monitoring solution

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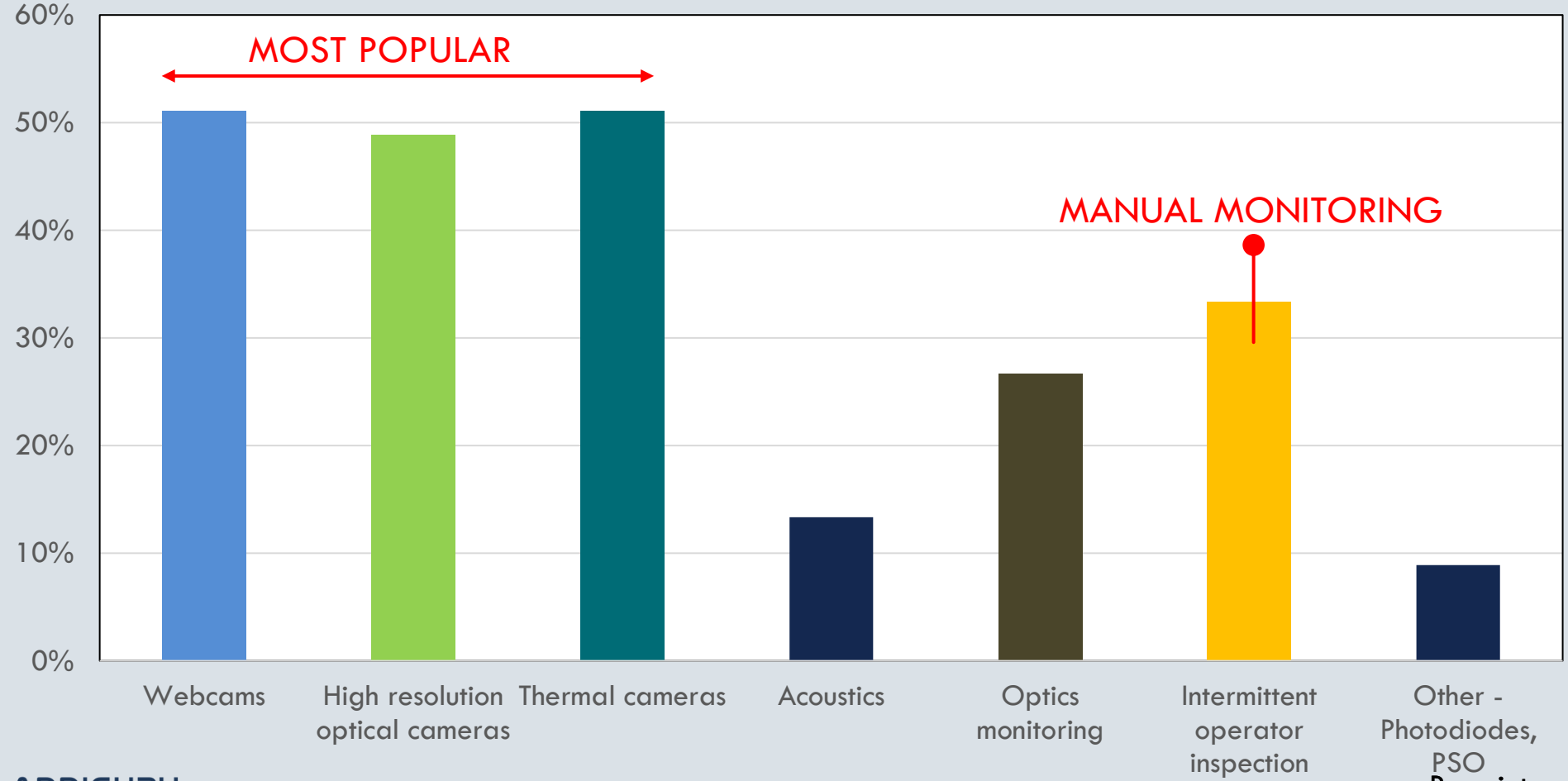
Sensors



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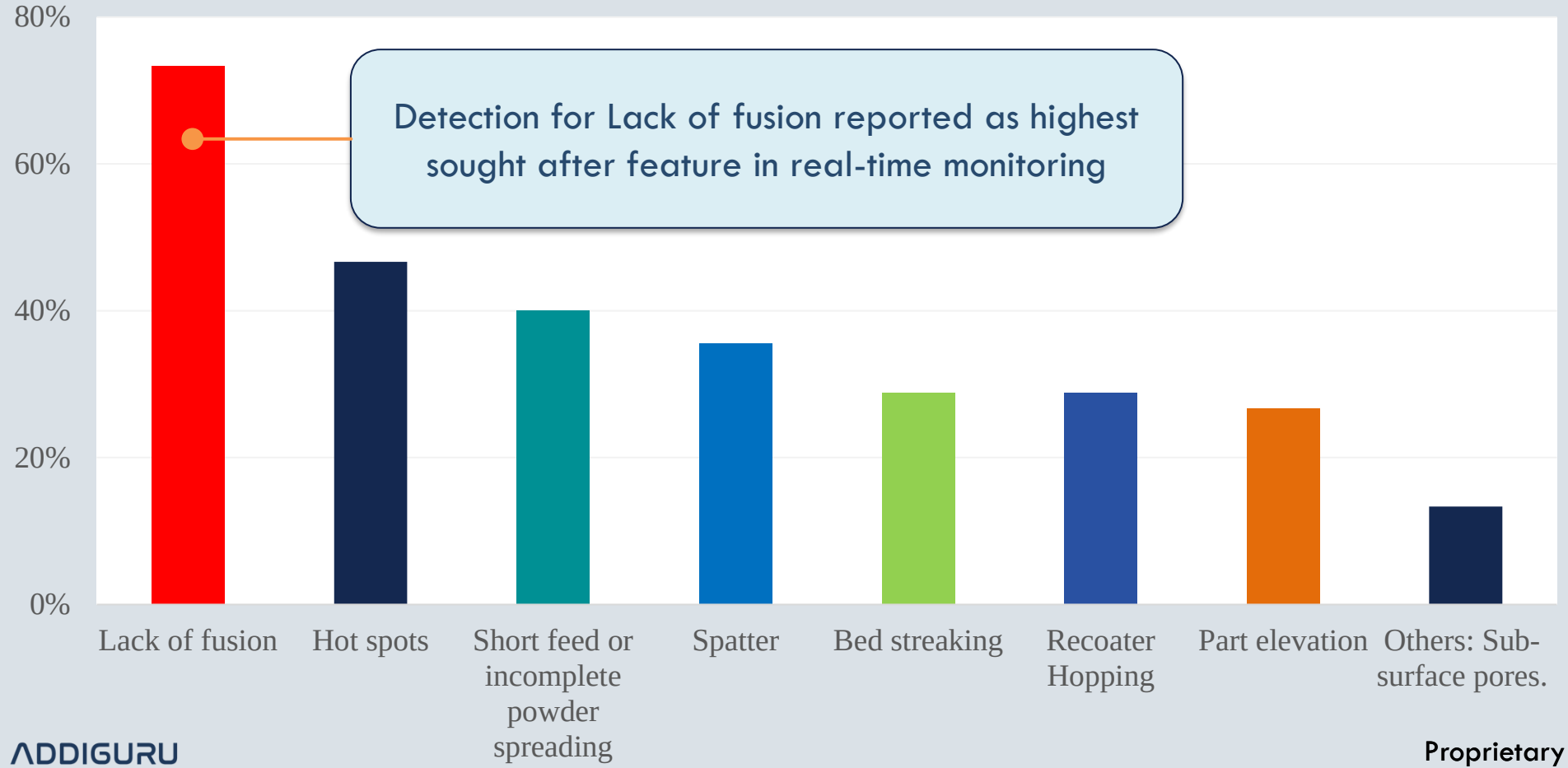
Issue detection for LPBF



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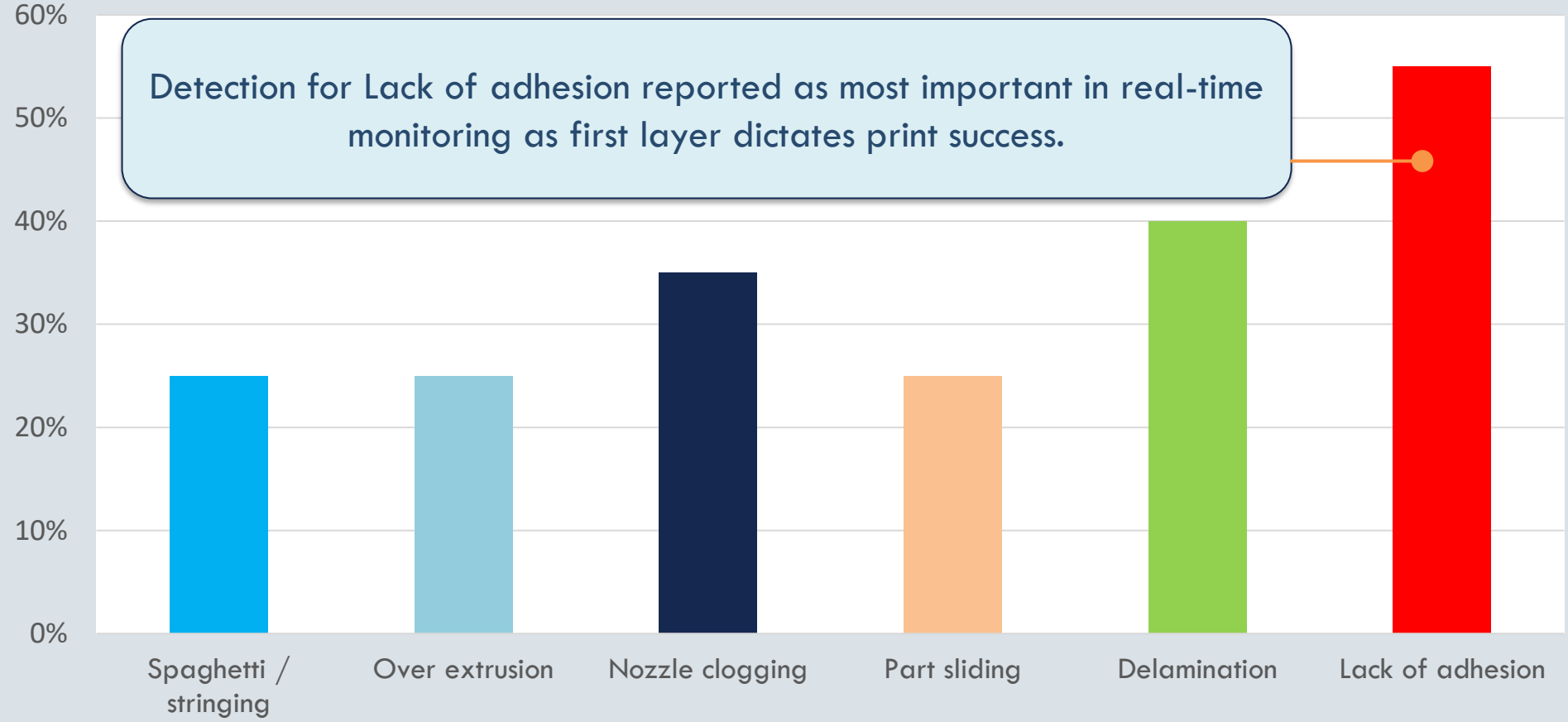
Issue detection for FFF



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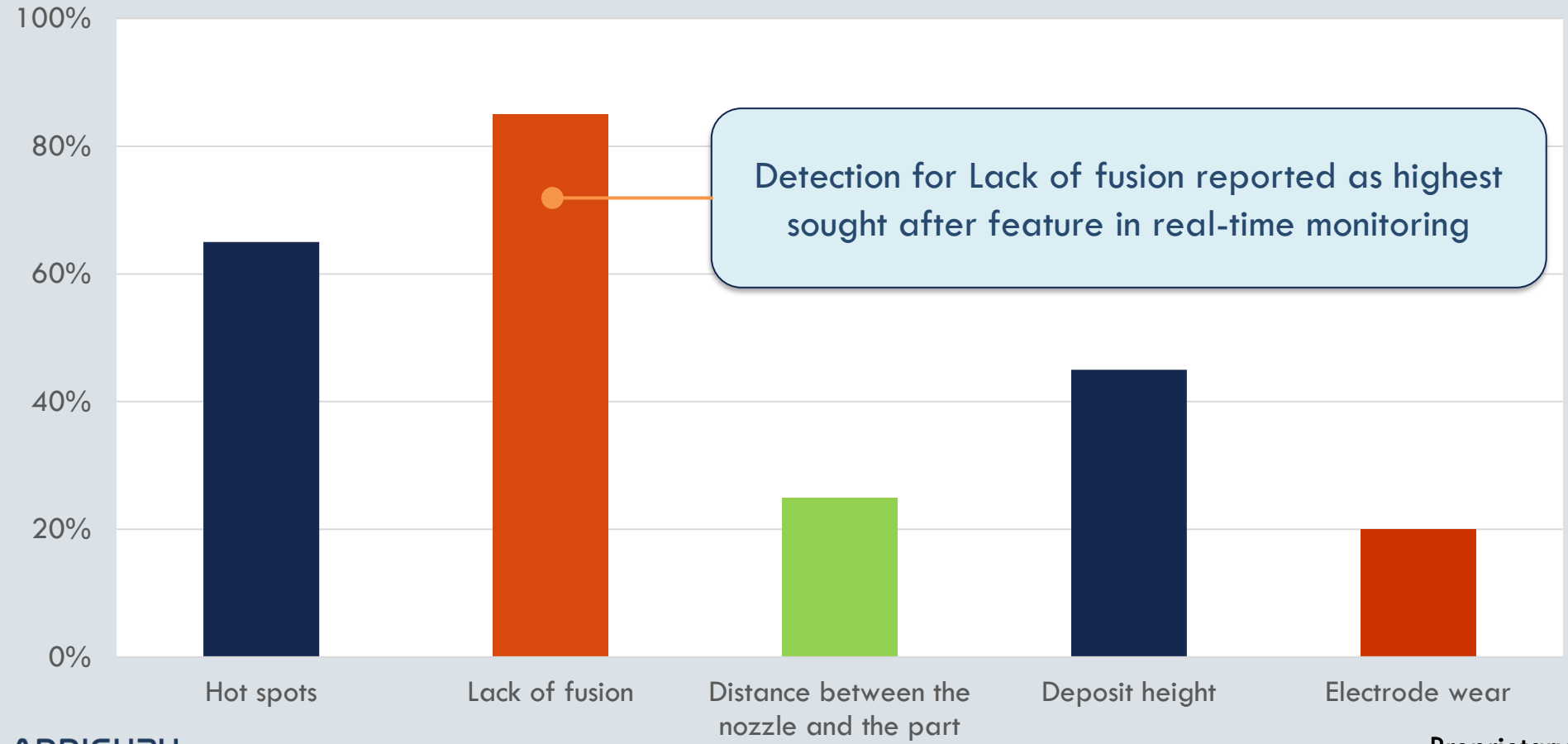
Issue detection for DED



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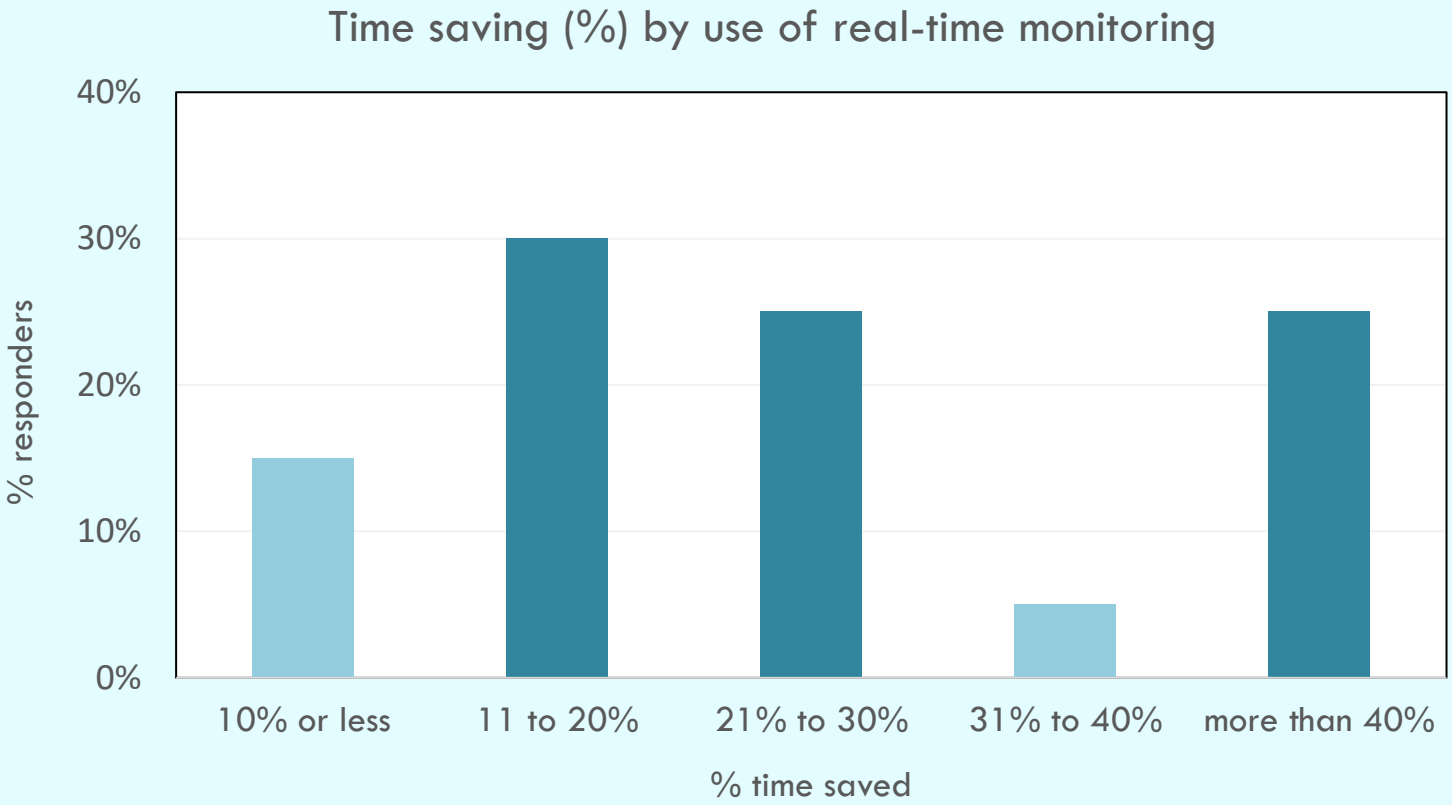
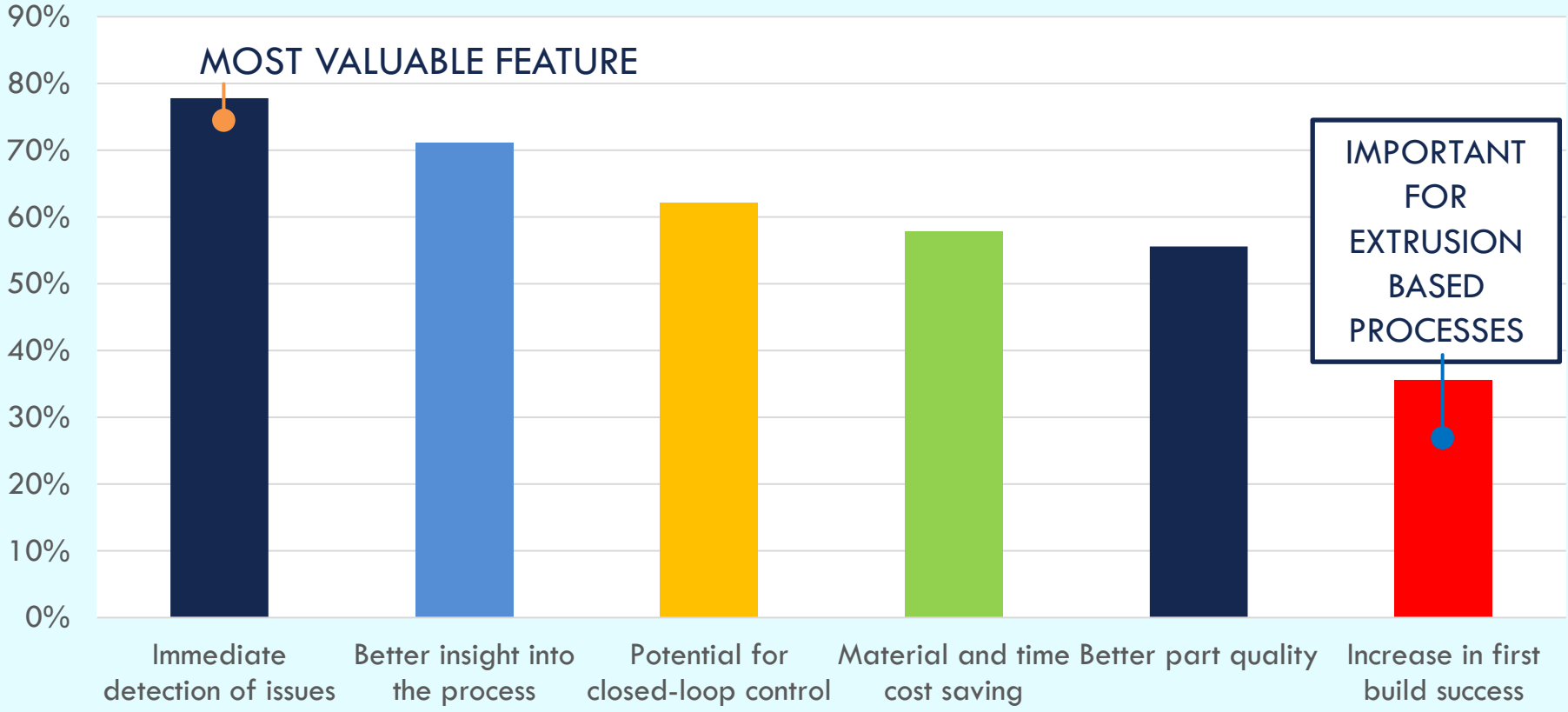
Time savings



55% of the survey takers report time savings of between 11-30%

25% of responders report more than 40% in time savings!

User reported benefits of real-time monitoring



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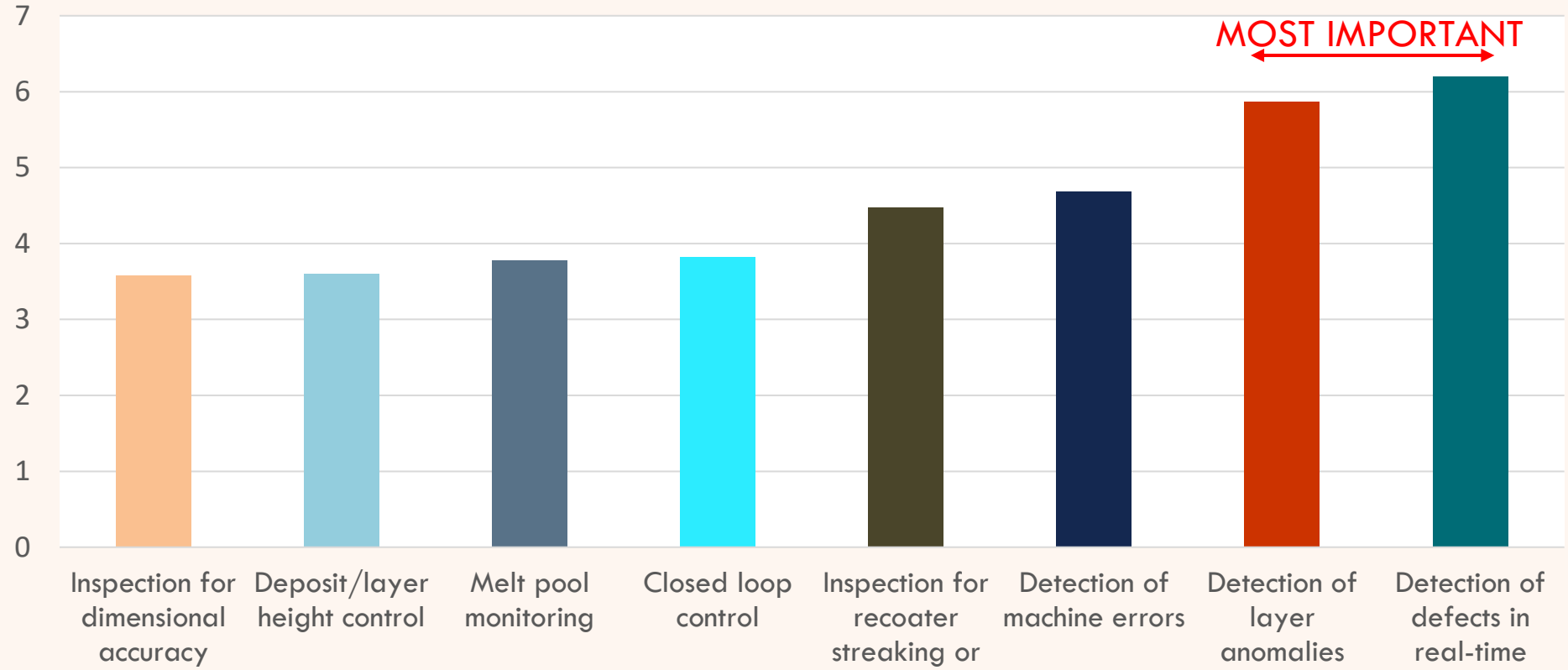
Features in real-time monitoring

Capabilities of real-time monitoring ranked in order of importance



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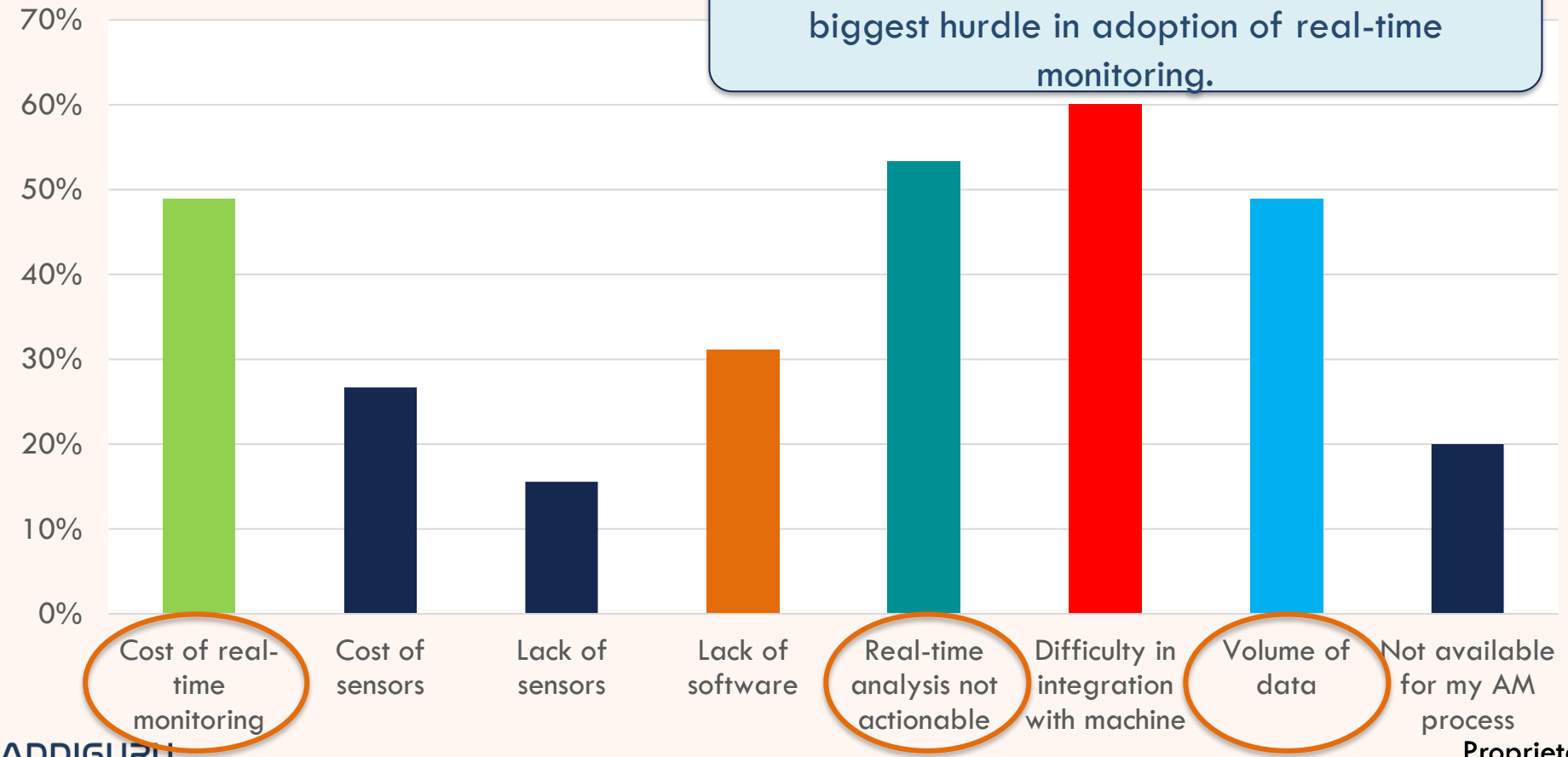
Hurdles in adoption of real-time monitoring

Integration with hardware reported as one of biggest hurdle in adoption of real-time monitoring.



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Key Takeaways

Sensors

60% of responders use **optical and thermal cameras** for real-time monitoring

Time Savings

84% of responders report **time savings of up to 30%**

Defect Detection

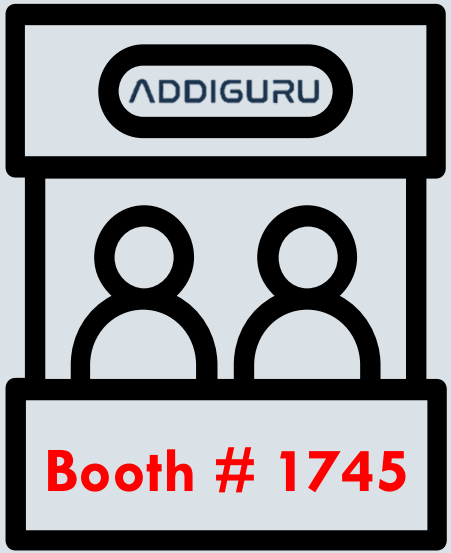
Over 78% report **immediate detection of defects** was most important feature

Hurdle

66% of responders say **difficulty in integration with hardware** is major hurdle in the adoption

Thank you!

Questions as well as comments are encouraged



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