

OCTOBER 26, 2023

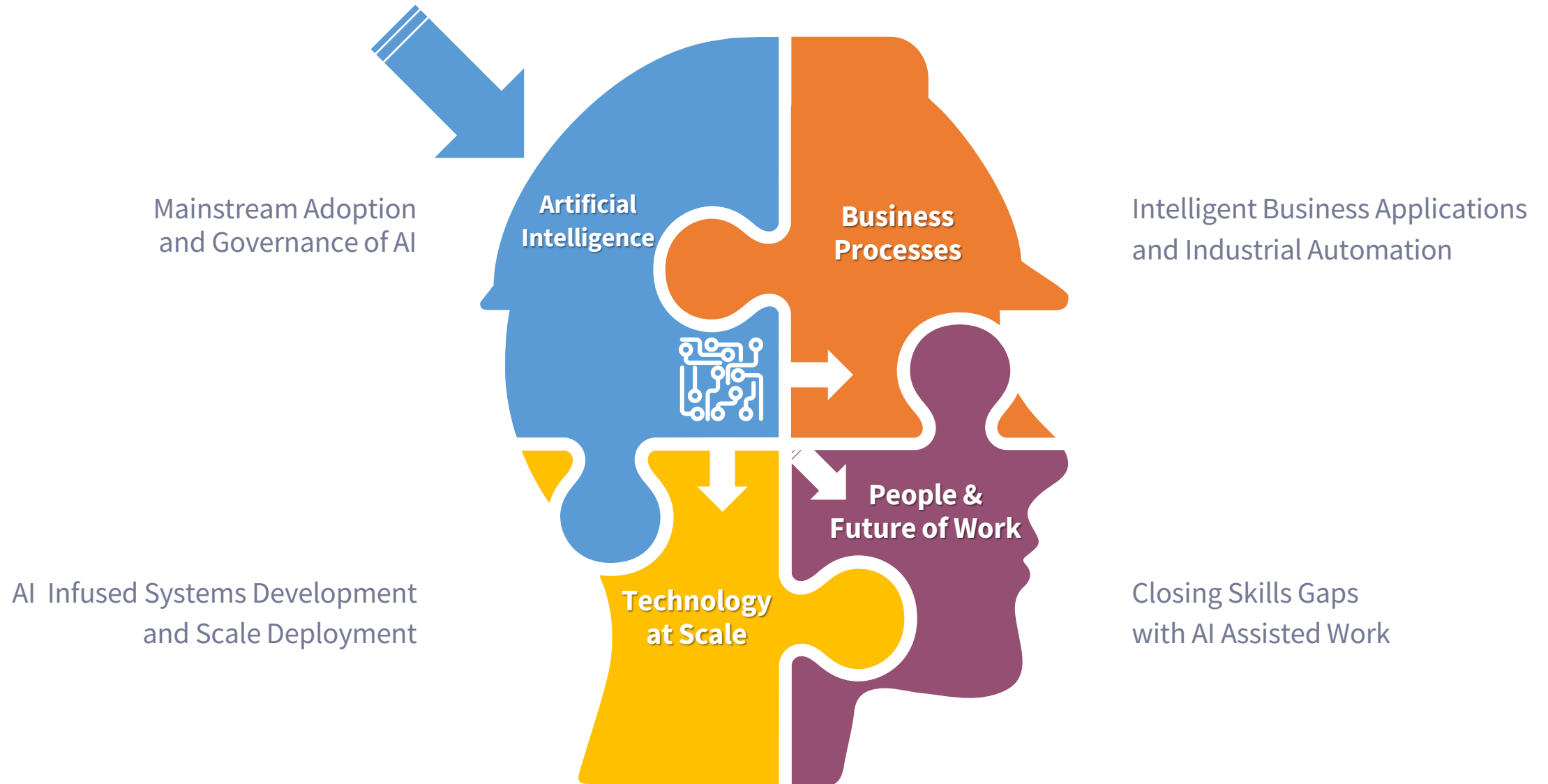
The Industrial AI (R)Evolution

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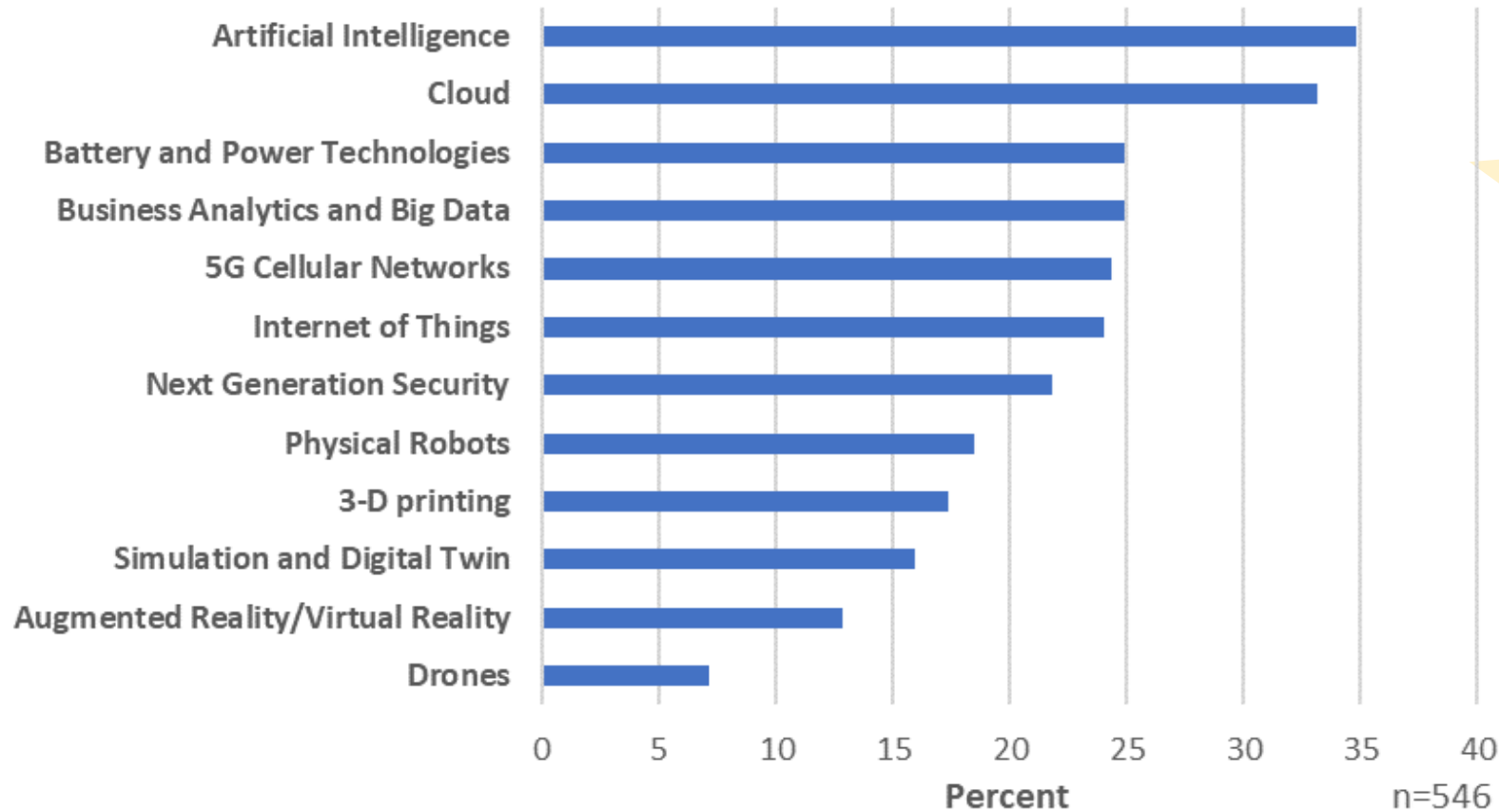
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Most Impactful Technologies in the Next 5 Years

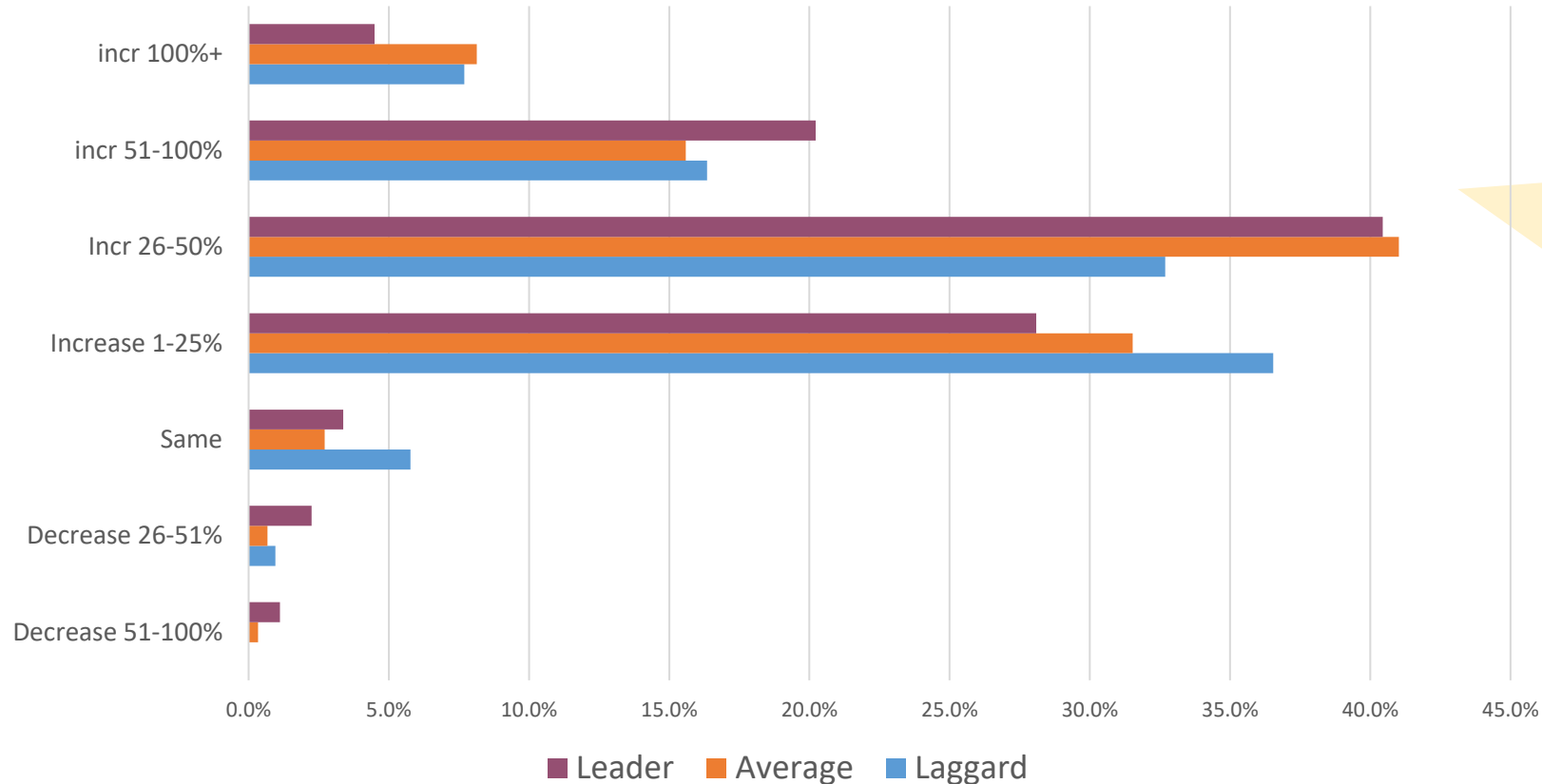


Manufacturers expect that artificial intelligence, cloud, and new battery and power technologies will all have a very significant impact in production operations by 2028

Source: ARC Survey of Manufacturers, December 2022

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AI Budget in 3 years compared to today

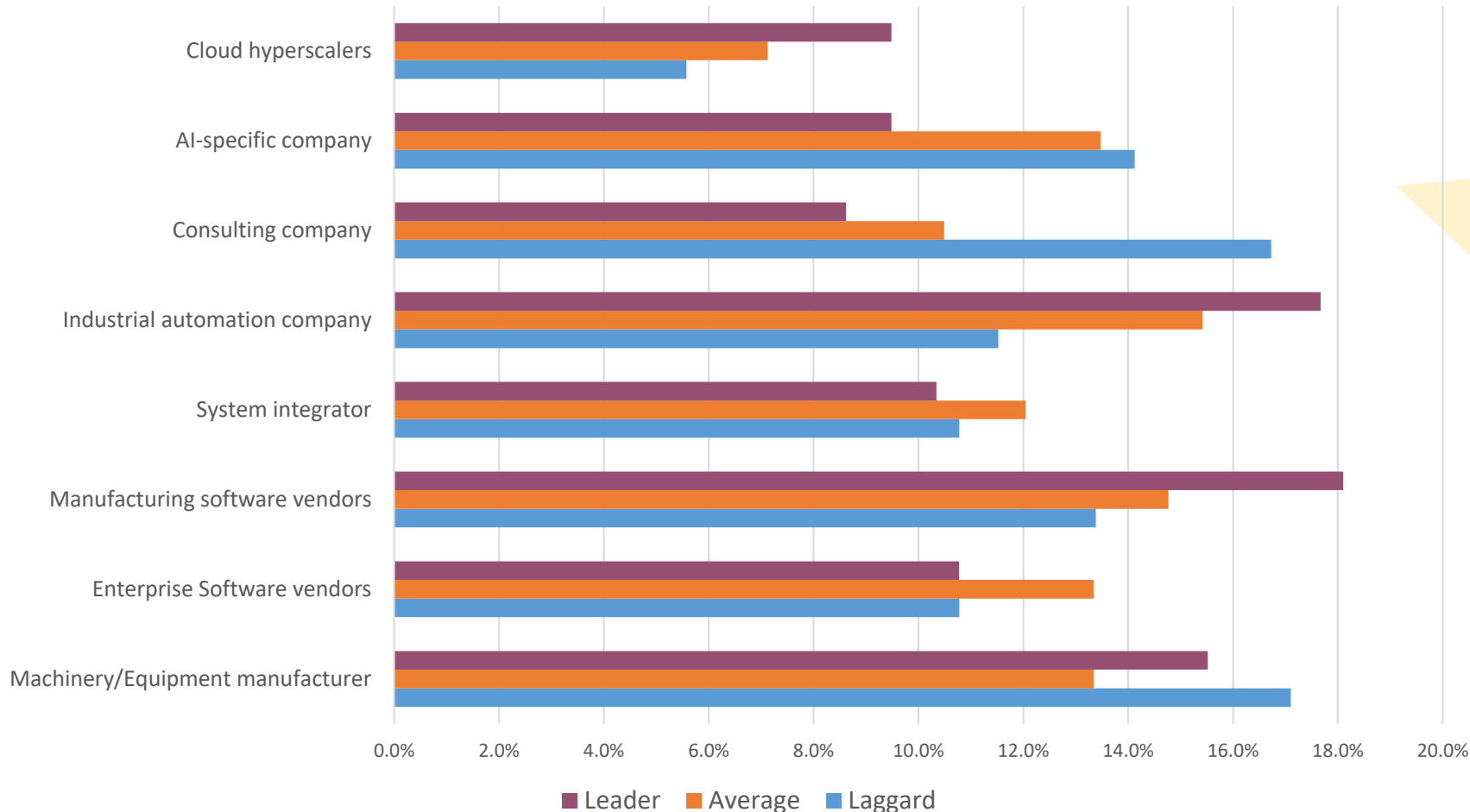


Manufacturing budgets for Industrial AI use cases are dramatically increasing over next 3 years - even for current Leaders!

Source: ARC Survey of Manufacturers, **October 2023**

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Which types of companies do you look to work with most often in your company's Artificial Intelligence (AI) initiatives?

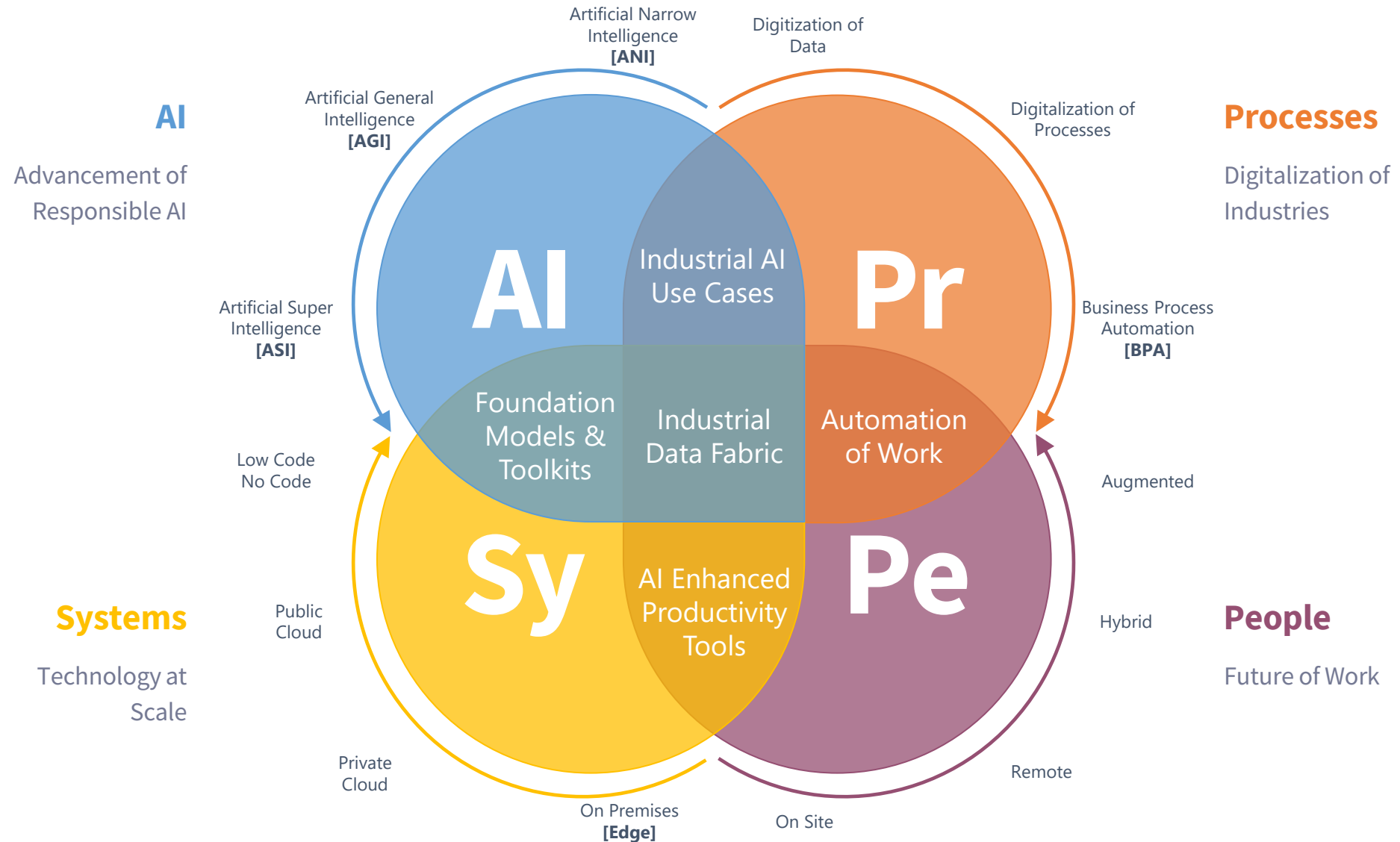


Leaders are more inclined to work with **industrial automation** companies, **manufacturing software** vendors and **machinery/equipment manufacturers** for Industrial AI use cases

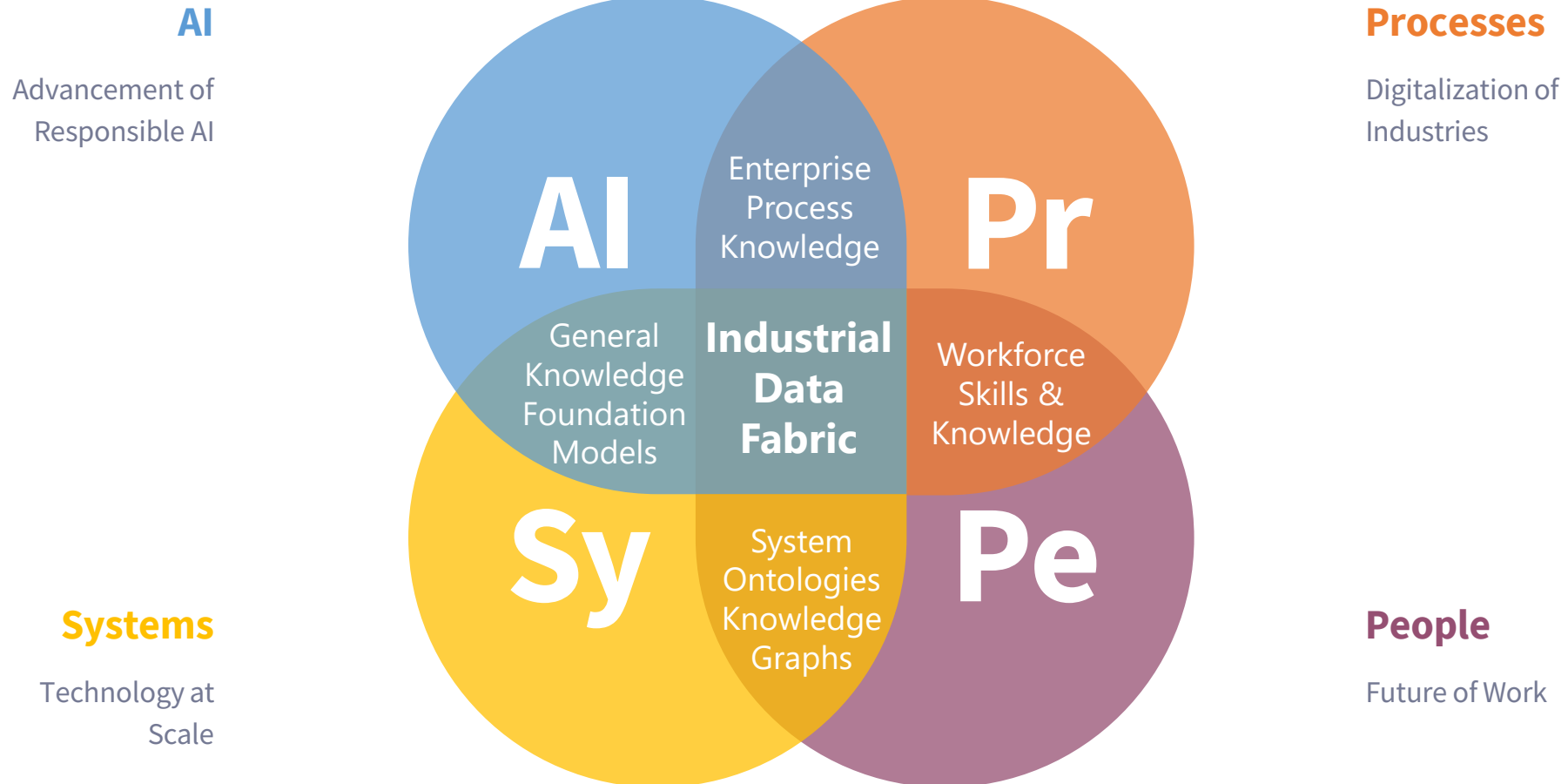
Source: ARC Survey of Manufacturers, **October 2023**

ARC's Industrial AI Impact Assessment Model

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It's (still) all about the data...! Industrial Data Fabric



25 Industrial AI Use Cases

Supply Chain Planning & Execution

- **Demand Forecasting:** AI analyzes historical and real-time data to predict future demand.
- **Inventory Optimization:** AI adjusts inventory levels to decrease storage costs and prevent stockouts.
- **Supply Chain Design & Risk Management:** AI anticipates potential disruptions and suggests preventive measures for end-to-end circular supply chain operations.
- **Logistics Optimization:** AI optimizes transportation routes and schedules to reduce costs, improve delivery times, and minimize carbon footprint.
- **Supplier Selection:** AI evaluates suppliers based on various criteria to ensure reliable and cost-effective sourcing.

Production Operations

- **Production Scheduling:** AI optimizes production schedules to meet customer demands while minimizing costs.
- **Quality Control:** AI-powered visual inspection systems detect defects and enhance product quality.
- **Predictive Maintenance:** AI predicts equipment failures and schedules maintenance to minimize downtime.
- **Process Optimization/Waste Reduction:** AI identifies inefficiencies and recommends changes to minimize waste, increase efficiency, and optimizing energy and water usage in production processes.
- **Digital Twin/Metaverse:** Augmented reality provides local and remote frontline workers and engineers with real time access, AI powered insights, and operations advice via digital twins.

Workforce Management

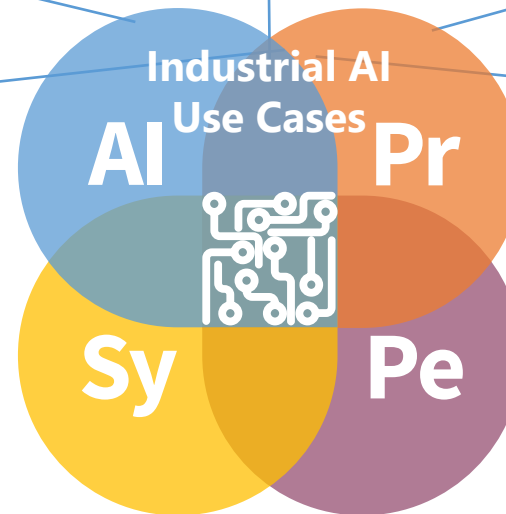
- **Skills Gap Analysis:** AI identifies areas where employees need training.
- **Recruitment:** AI screens candidates and predicts their fit for a role.
- **Employee Retention:** AI predicts which employees are at risk of leaving and suggests interventions.
- **Collaboration Tools:** AI enhances teamwork across geographical boundaries.
- **Productivity Analysis:** AI identifies patterns in employee behavior to suggest ways to increase productivity.

Product Development & Design

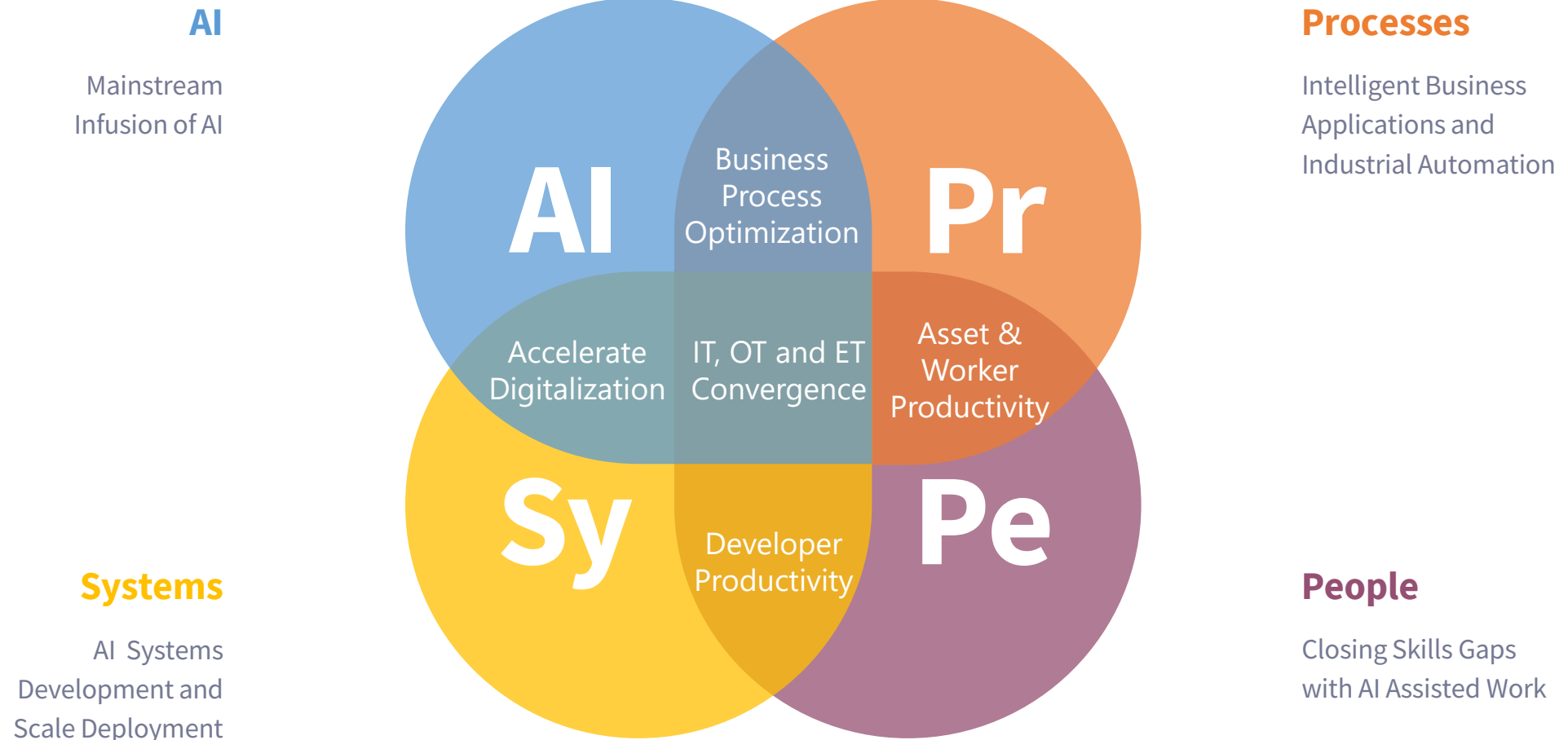
- **Generative Design:** AI algorithms propose optimal design solutions based on specific criteria.
- **Materials Science:** AI predicts the best materials for specific applications, enhancing product durability and performance.
- **Simulation and Testing:** AI accelerates the testing process by simulating real-world conditions and forecasting product performance.
- **Sustainability Analysis:** AI evaluates product, process and circular supply chain designs to minimize environmental impact.
- **Cost Optimization:** AI guides designers in creating cost-effective products without compromising quality or performance.

Sales & Service

- **Customer Segmentation:** AI groups customers based on behavior and preferences for targeted marketing.
- **Sales Forecasting:** AI predicts future sales trends based on historical and real-time data.
- **Chatbots:** AI provides automated customer service, freeing up human agents for complex issues.
- **Product Recommendations:** AI suggests products based on customer browsing history and purchases.
- **Sentiment Analysis:** AI gauges customer sentiment from reviews and social media posts to improve products and services.



Industrial AI's Business Value



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- [The Industrial AI \(R\)Evolution | ARC Advisory Group \(arcweb.com\)](#)
 - [Industrial AI Challenges and the Path Forward](#)
 - [ARC's Industrial AI Impact Assessment Model](#)
 - [Industrial AI Paving the Way for Industrial Metaverses](#)
 - [Industrial AI - 25 Use Cases for Sustainable Business Outcomes](#)
 - [Industrial AI and Industrial Metaverses: New Software Design Patterns Required](#)
 - Industrial Data Fabrics (Coming Soon)
 - Industrial AI Leaders vs Laggards (Coming Soon)

Questions?

Please wait for the microphone.
State your name and company.



Please remember to...

Navigate to this session in the mobile app to complete the survey.



Thank you!

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