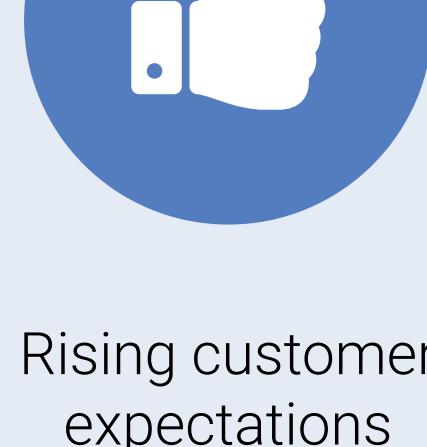


## Building the digital factory with Google Cloud and SAP

Manufacturers are facing a brave new world whose challenges have been exacerbated by the global pandemic. Google Cloud can help them use their SAP and other data to meet these challenges and embrace Industry 4.0.

### New challenges



Rising customer expectations



Growing skills gap



Environmental sustainability concerns



**Bottom Line** 48.5%

of manufacturers don't expect revenue to return to pre-COVID levels before Q3 of 2021 or later

### New technology

Advanced technologies offer solutions, but many manufacturers struggle with how to implement and integrate them.



Artificial intelligence (AI)-powered analytics



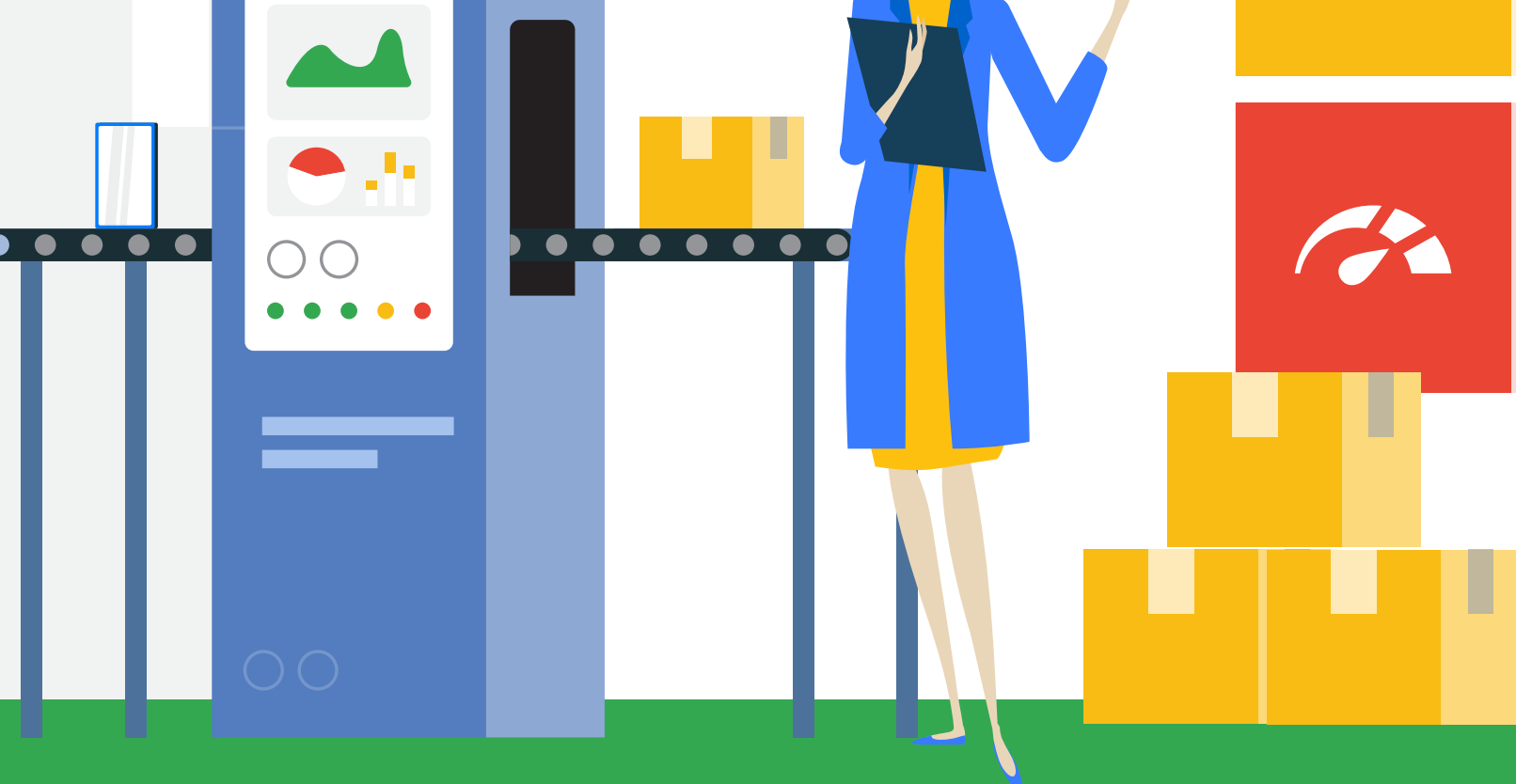
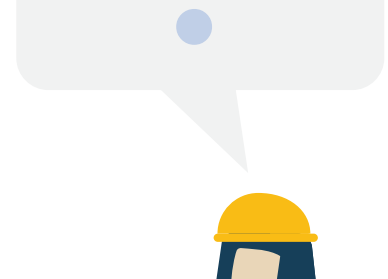
Industrial Internet of Things (IIoT)



Hybrid and multi-cloud environments



High-speed connectivity and 5G



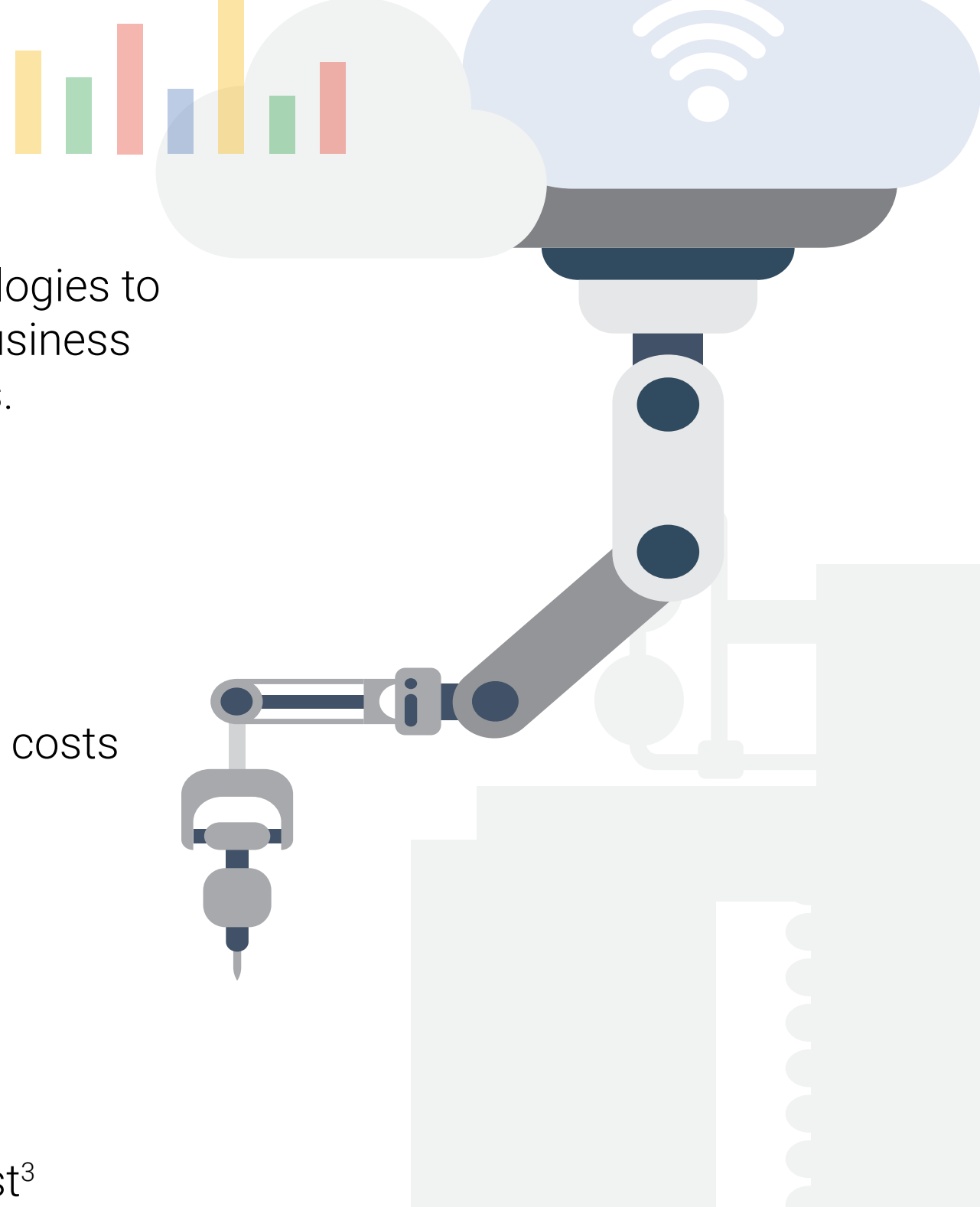
**Bottom Line** 76%

of manufacturing executives intend to increase their investments in digital initiatives<sup>1</sup>

### Industry 4.0 and the digital factory

Manufacturers that do use advanced technologies to gain value from their data and enable new business processes are unlocking value in many areas.

- 5-10% improvement in production volume/direct production
- 10-30% savings in logistics-related costs
- 10-20% energy cost savings
- 10% reduction in carbon footprint<sup>2</sup>
- 10-30% lower support function cost<sup>3</sup>



**Bottom Line** 10-20%

improvement in production efficiency for most manufacturers<sup>4</sup>

### How Google Cloud and SAP can help manufacturers

#### Yield optimization

Capture real time data → Process and store data → Perform data analytics → Drive improvements

- Up to 30% increase in production throughput by optimizing processing
- Up to 10% decrease in raw ingredient costs by reducing overconsumption

#### Predictive asset maintenance

Collect data → Build out and train models → Deploy at edge → Drive business insights

- 10-20% increase in overall equipment effectiveness
- 5-10% lower maintenance costs (labor, spare parts)
- Up to 20% reduced waste due to startup and stopping

#### Real-time quality inspection

Capture real-time data → Train models → Run models at edge → Data feedback

- 20-30% less rework and scrap material waste
- 14-18% increase in first pass yield
- 14-24% higher overall customer satisfaction<sup>5</sup>





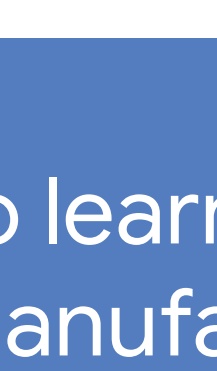
### SAP on Google Cloud: The right choice for manufacturers

- 30%+ reduction in IT infrastructure<sup>6</sup>
- 56% improvement in IT team efficiency<sup>7</sup>
- 46% lower cost of running SAP workloads vs. competing cloud solutions<sup>8</sup>

- 100% sustainable energy

How Google Cloud runs today, and how it aims to run every cloud workload by 2030

### What can your manufacturing operation do with Google Cloud and SAP?

	Simplify migration and deployment	<ul style="list-style-type: none"> <li>Cloud Acceleration Program</li> <li>Google Kubernetes Engine</li> <li>Anthos</li> </ul>
	Leverage internal and external data sources	<ul style="list-style-type: none"> <li>Google web search data, weather, maps, shopping and more</li> <li>AutoML Vision</li> <li>Cloud IoT Core</li> </ul>
	Integrate systems and data across hybrid and multi-cloud environments	<ul style="list-style-type: none"> <li>Apigee</li> <li>BigQuery Omni</li> </ul>
	Perform powerful data analytics	<ul style="list-style-type: none"> <li>BigQuery</li> <li>Cloud AutoML</li> <li>Looker</li> </ul>
	Democratize process automation	<ul style="list-style-type: none"> <li>AppSheet</li> <li>Cloud Data Fusion</li> </ul>

To learn more about how [Google Cloud](#) can help your manufacturing operation leverage rich data to compete in Industry 4.0, read [SAP on Google Cloud for Manufacturing](#), and [watch this video](#).

#### Sources

- <sup>1</sup> "2021 manufacturing industry outlook," Deloitte, 2020.
- <sup>2</sup> "Unilever Making a Clean Break," IndustryWeek, Peter Fretty, 14 October 2020.
- <sup>3</sup> Unless otherwise noted, all data in this section is from "Digital Operations: Don't Depart without a Strategy," Bain & Company, Stephan Zech, Emilia Fallas and Jörg Gnamm, March 18, 2020.
- <sup>4</sup> Ibid.
- <sup>5</sup> All data in this section is from "SAP on Google Cloud for manufacturing," Google Cloud, Intel, 2021.
- <sup>6</sup> "Business Value of Google Cloud for SAP Environments," IDC, Frank Della Rosa, Matthew Marden, Deepak Mohan, July 2020.
- <sup>7</sup> Ibid.
- <sup>8</sup> Ibid.