

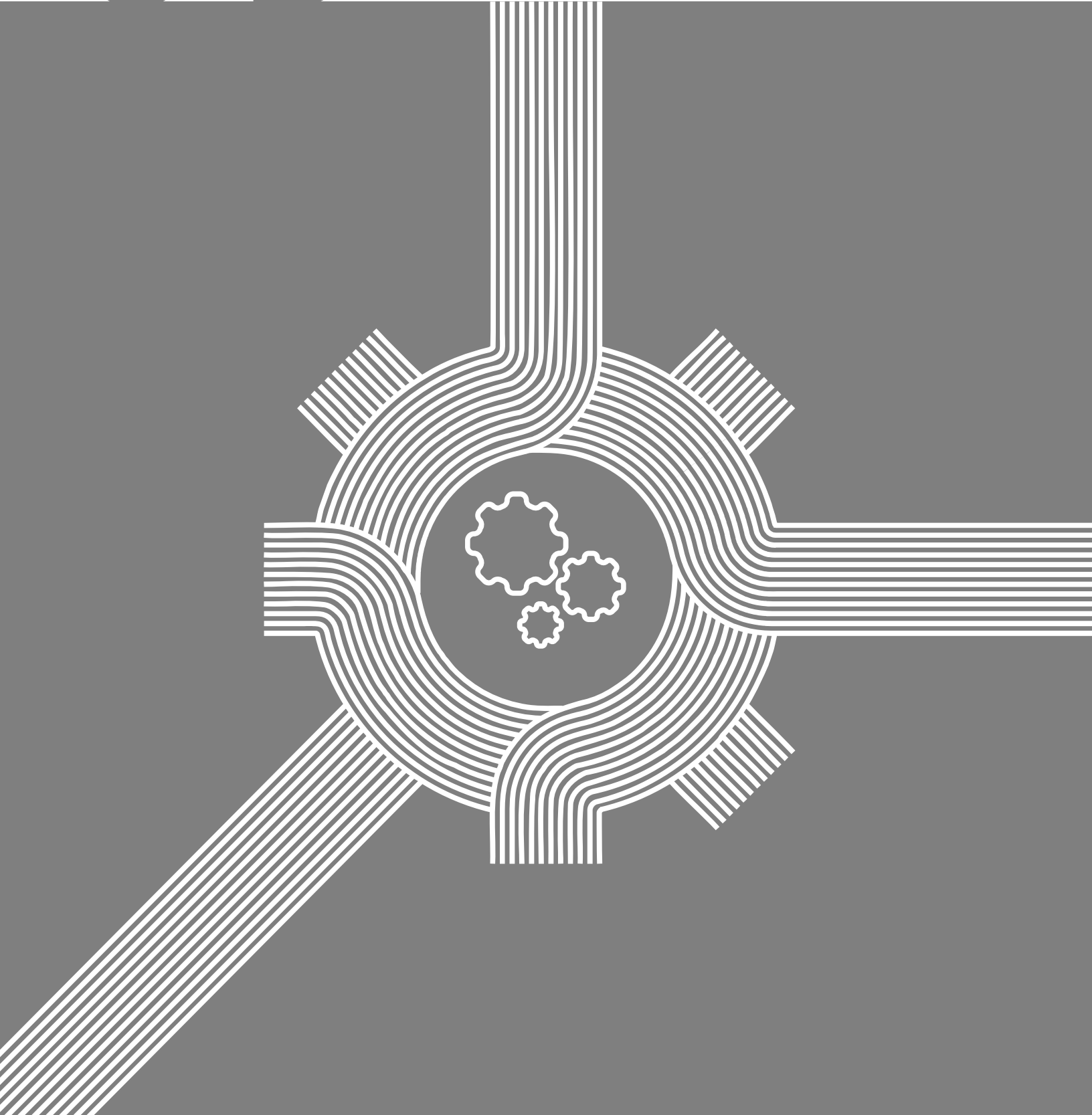
09

Microsoft Services



**Predictive
maintenance**

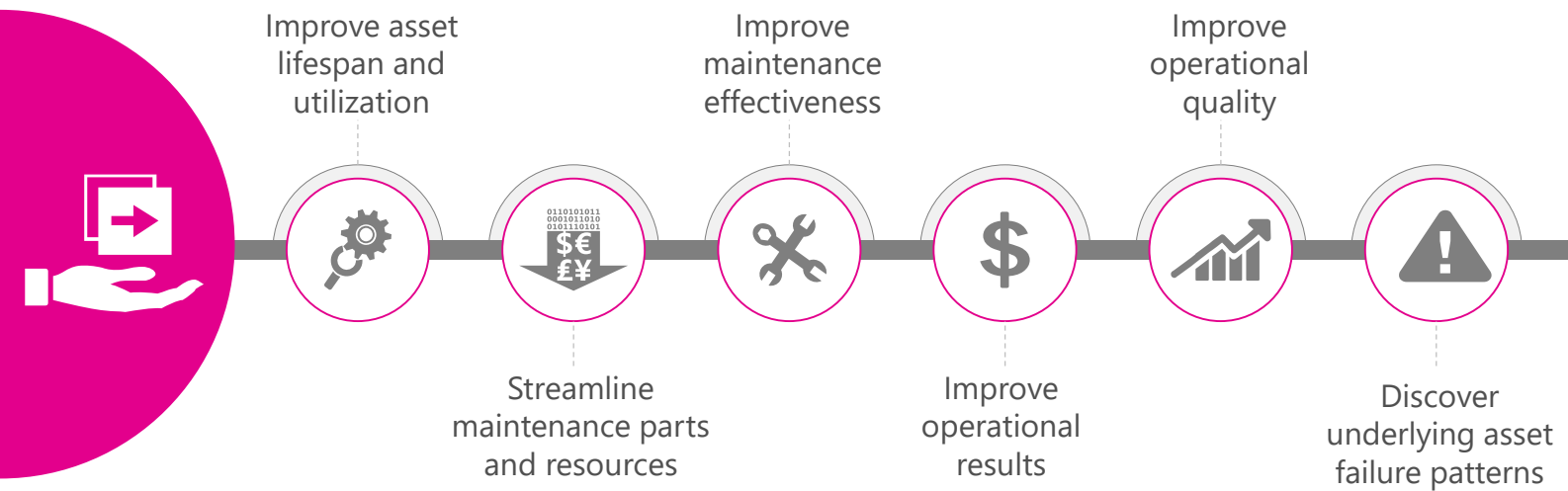
Manufacturing



A man with grey hair and a beard, wearing a blue long-sleeved shirt and a VR headset, is looking at a computer monitor. The monitor displays a 3D model of a complex mechanical part, possibly a turbine or engine component, rendered in a translucent blue color. The background shows a factory or industrial setting with various pieces of equipment and control panels.

The digital revolution has unlocked new opportunities for manufacturers to challenge the convention and re-think how products are developed, operations managed, and supply chains optimized.

Achieve higher operational effectiveness



In today's competitive environment, manufacturers must have complete confidence in their operations—the foundation of their success.

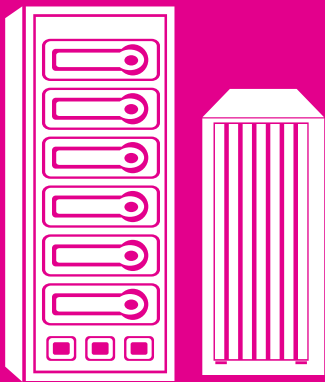
To win in their markets, manufacturers must execute consistently and improve performance constantly.

Digital Transformation is shifting the balance to manufacturers who can ensure critical asset availability and deliver on customer promises.

Organizations can realize new levels of asset utilization by implementing predictive maintenance—intelligent systems and devices that implement sensors and cognitive systems and automate data collection to improve overall performance.

With predictive maintenance, manufacturers can lower costs, drive higher output and efficiency, and enhance product quality.

Improve maintenance efficiency



ANOMALY DETECTION

Identify deviances from normal trends to predict potential failures



SMART SCHEDULING

Reduce overall maintenance budget and avoid loss of resources due to unplanned maintenance events



ASSET & INVENTORY OPTIMIZATION

Predict remaining useful life and optimum inventory levels of spare parts



REDUCE DEFECTS

Improve internal quality, scrap, and rework rates

Unlock new opportunities at the intersection of business model innovation, differentiated experience and technology integration

MANUFACTURING AS A DIGITAL SERVICE

DEMAND MANAGEMENT	MANUFACTURING MANAGEMENT			
Sales orders Selected quotations & estimates Forecasting Replenishment of stock Product configurations	Design & change control	Material & labor cost monitoring	Subcontract operations management	Tracking & traceability
	Factory scheduling	Project-based monitoring		Supply chain management
	INVENTORY MANAGEMENT		SALES MANAGEMENT	
	Multi-use warehousing		Monitoring & management of margins	
	Stock categorization		Sales order management	
	Inventory optimization		Repair & maintenance orders	
	Warehouse management		Payments & retentions	
	Real-time monitoring & reporting		Negotiation & monitoring of maintenance contracts	
CUSTOMER MANAGEMENT	Customer contract management	Service level agreements	Installation services & assistance	Recalls, claims & warranties
	Claims and reimbursements management		Human resource management	Remote monitoring





**Imagine if you
could stay one step
ahead of your
maintenance needs,
scheduling
maintenance
process and times
optimally ...**

Enable intelligent manufacturing, automation servicing, and cost-effective production support

FROM REACTIVE

Our manufacturing floor is experiencing too much down time, often in the midst of busy production schedules.

I am facing continuous pressure to avoid breakdowns, eliminate extended downtime, AND reduce maintenance costs.

We have diverse equipment from multiple vendors linked together in a manufacturing line where each contains its own silo of operating data.

We do not have the information we need to respond quickly at optimal times to ensure quality and the continuous operation of the manufacturing lines.

It is difficult to coordinate our vendors for just-in-time response.

TO PREDICTIVE

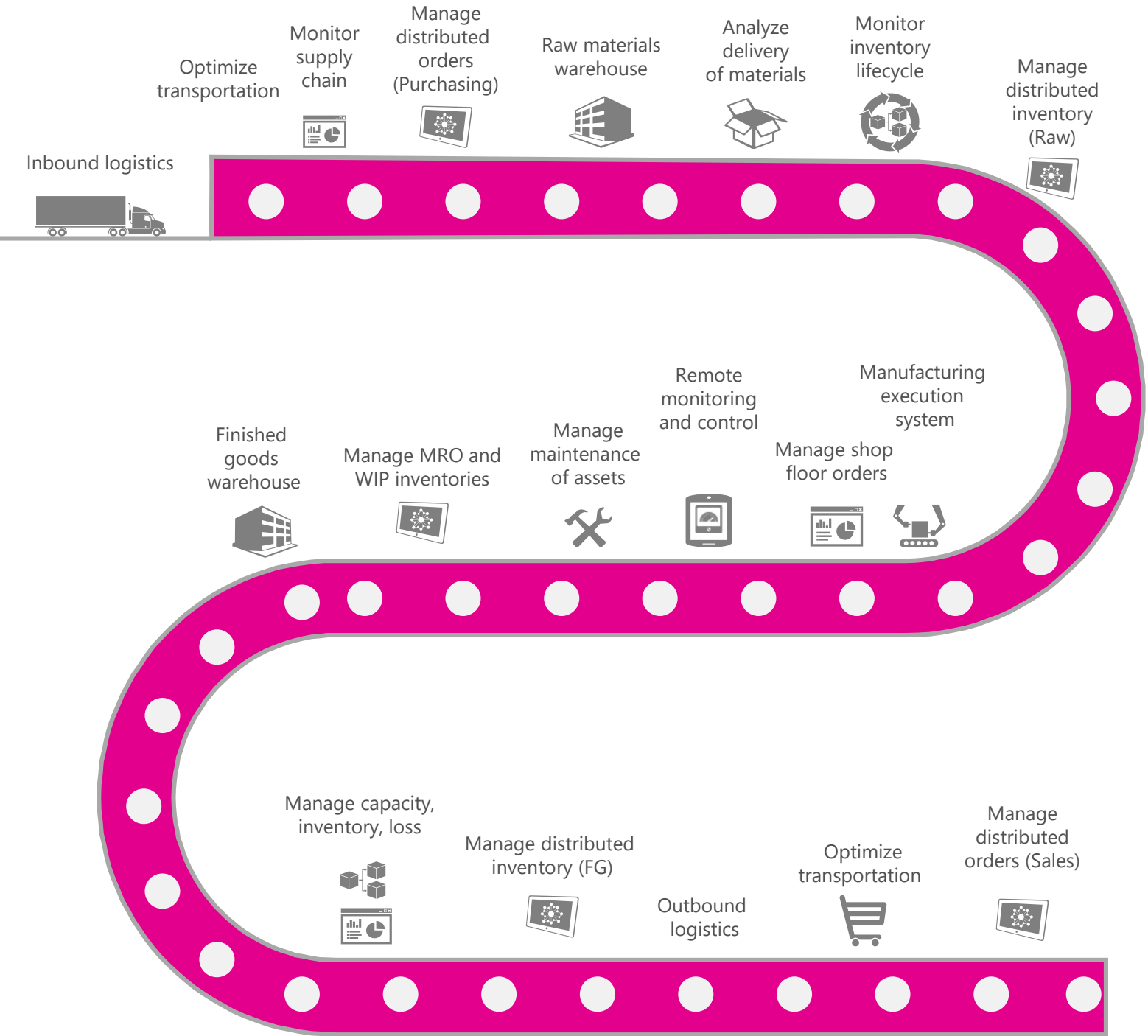
The information and intelligence built into our manufacturing equipment and our machine-learning-based predictions provide the insight we need to anticipate and prevent many breakdowns.

We identify optimum times and processes for refreshing our equipment, which increases manufacturing uptime and drives down costs.

Our equipment vendors can remotely monitor, assess, diagnose, and tune our manufacturing equipment, and work closely with us to improve equipment performance and lifetime, schedule maintenance, and reduce downtime.

We have realized major savings in maintenance operations and are now more flexible, productive, lean, and effective in running our shop.

See through the eyes of your customers



DIGITAL HOTSPOTS

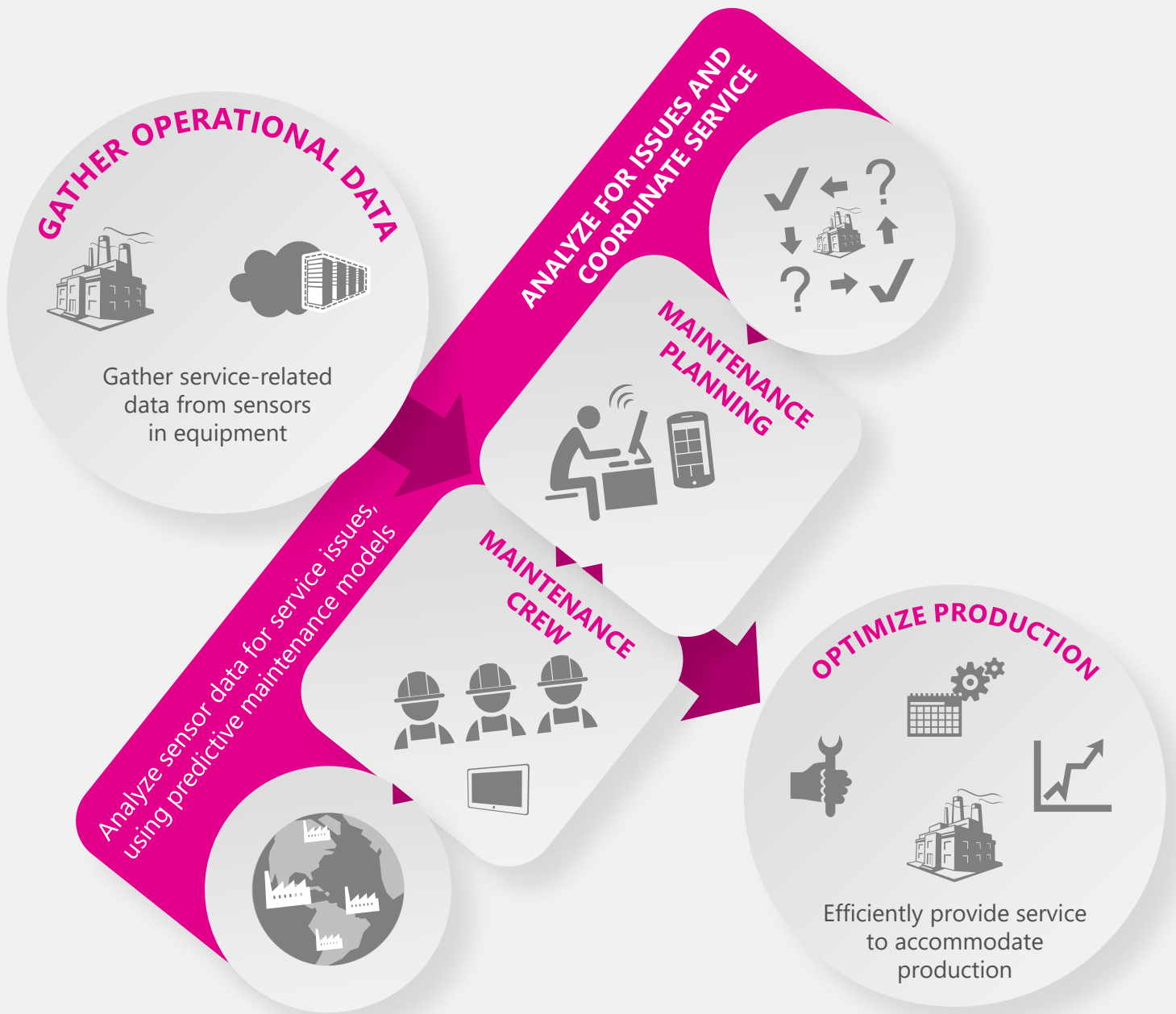
Inbound/Outbound logistics
 Manage distributed orders
 Optimize transportation and routing
 Monitor supply chain performance

Warehousing
 Manage distributed inventory
 Manage capacity and consumption
 Monitor inventory lifecycle

Manufacturing execution system
 Manage MRO and WIP inventories
 Manage production and maintenance
 Monitor and control remotely

Move towards predictive maintenance

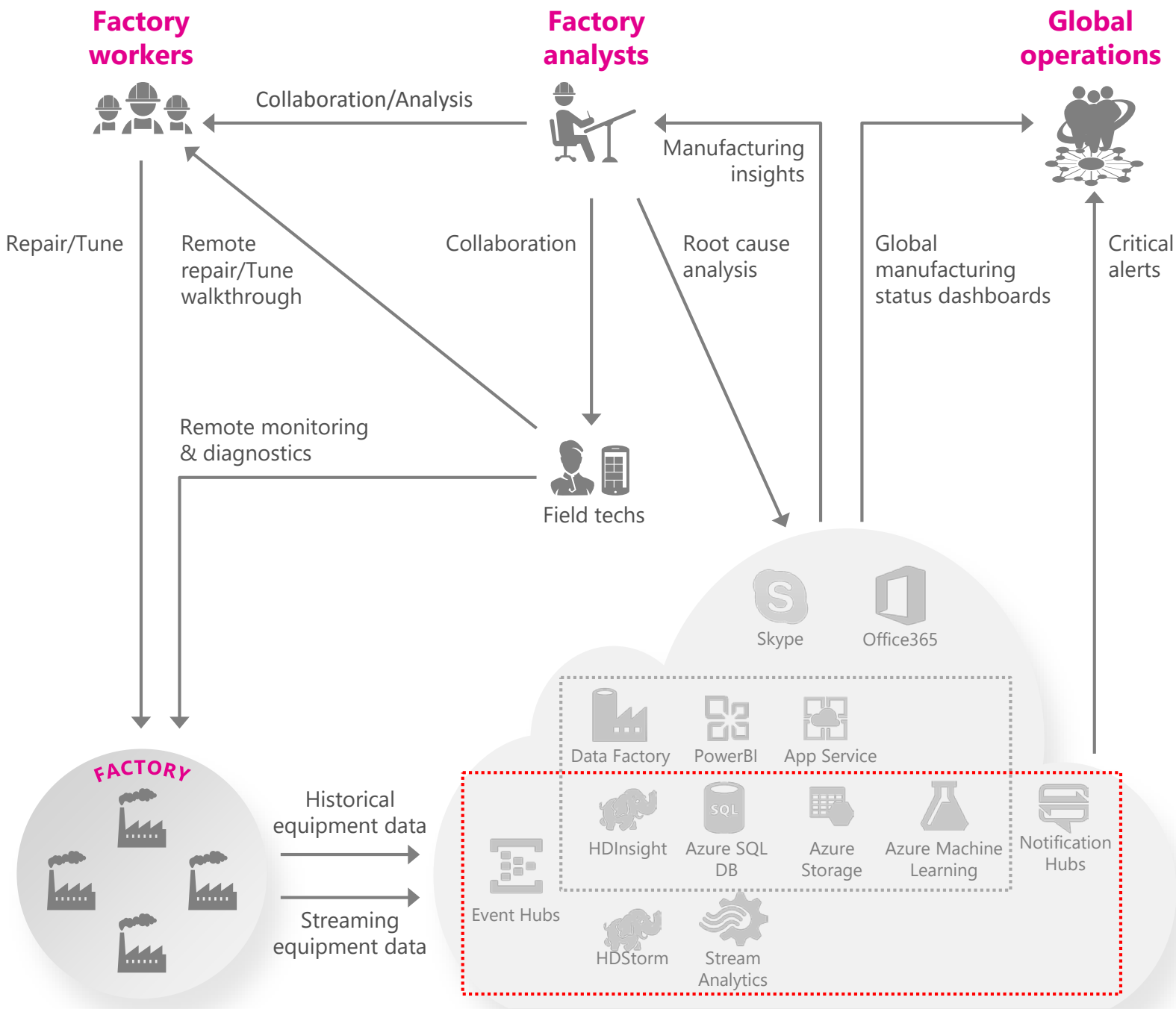
We can schedule our production efficiently because our equipment is monitored for signs that service is or will become necessary.



Top-line impact: We have made savings in maintenance operations and are now more flexible, productive, lean, and effective in running our shop.

BENEFITS	START	STOP	CONTINUE
Avoidance of production losses	Gaining and analyzing captured data intelligently	Reacting to maintenance needs	Focusing on production efficiency
Reduction in inventory costs	Sharing and acting on insights innovatively	Restricting service personnel to physical static systems for sharing information	Adopting new technologies
Reduction in expedited shipping costs	Sharing information with mobile staff seamlessly	Investing in conventional insight engines	Gathering and responding to real-time data
Avoidance of catastrophic shutdown losses	Predicting and performing maintenance proactively		
Reduction in supply chain management costs			

Innovate business models, services, and solutions that differentiate



Improving the way people and cities move while reducing the average length of service calls by 4x

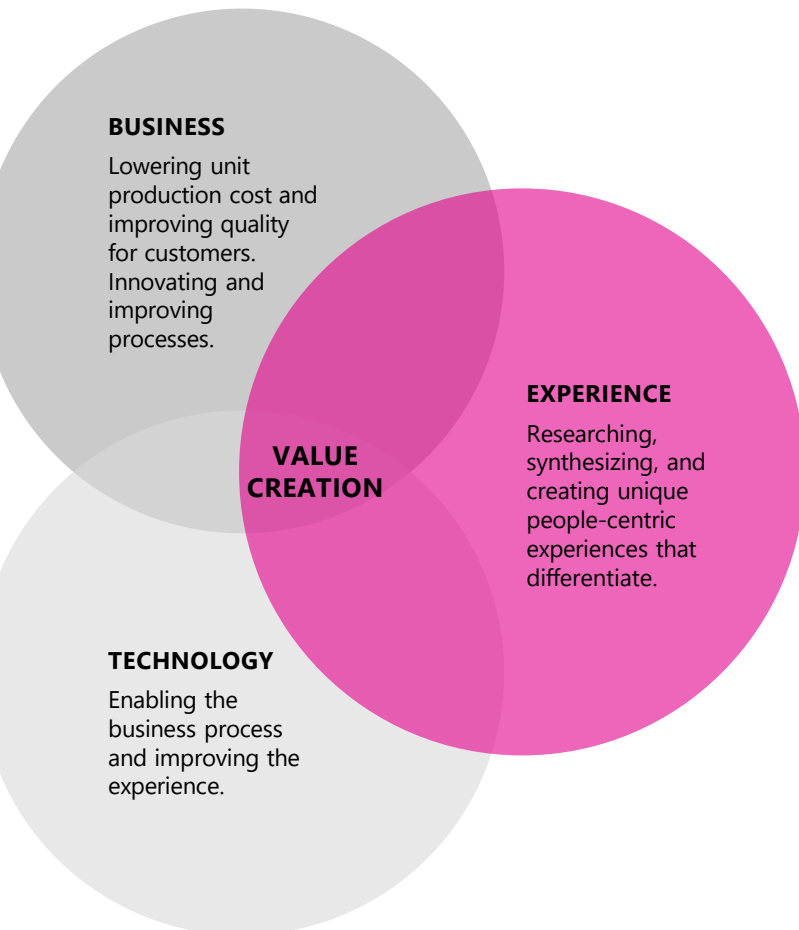
Twenty-four thousand elevator service technicians can now visualize and identify problems ahead of a job and have remote hands-free access to technical and expert information when onsite.



Predicting problems enables us to have fewer service interventions, and this equipment helps us do our job faster
— Andreas Schierenbeck, CEO of ThyssenKrupp Elevator



Design your digital strategy



Deliver business outcomes through your digital transformation.

Engage your customers

Deliver personalized, rich, connected experiences to your customers, inspiring loyalty along every step of the customer journey.

Empower your employees

Enable your employees to keep up with your fast-moving customers, efficiently collaborating to quickly meet customer needs with agility.

Optimize your operations

Increase the flow of information across your entire business, synchronize your business processes, and improve your interaction with your partners and supply chain.

Transform your products

Gather information about the use of your products, design innovative features, and collaborate with your development team to improve products and develop new ones.



You are reinventing what it means to do manufacturing, and we're committed to creating the right solutions for you.

Our solutions are disruptive and robust, delivering real results at speed.

Together, we can reimagine the art of the possible.

Microsoft Services empowers organizations to accelerate the value imagined and realized from their digital experiences.

Imagine. Realize. Experience.

microsoft.com/services
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