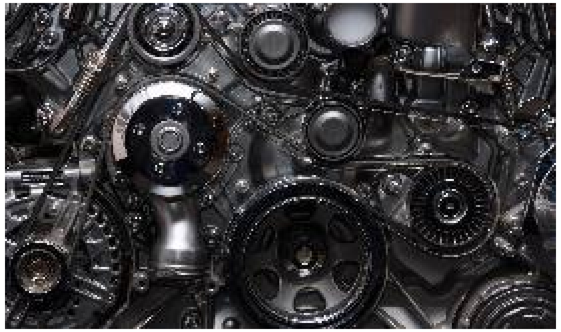
Columbus Once you know how...

Achieve business continuity by adopting predictive maintenance

Agenda

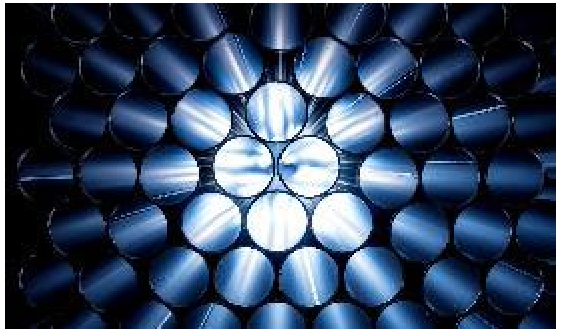
- Industry trends and challenges
- Steps towards Predictive Maintenance
- The catalyst offer
- About Columbus

Trends with a profound impact on manufacturing operations:



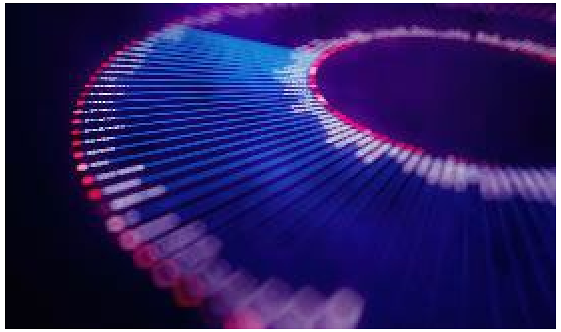
Customization

Consumers want products that meet their personal specifications—and they want them delivered quickly



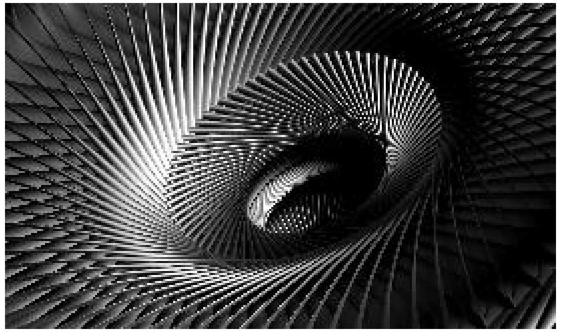
Regionalization

Globalization is reversing the risks associated with complex supply chains have heightened



Digital differentiation

Various trends have elevated digital skills from supporting capabilities to a source of competitive advantage



Sustainability

A growing number of consumers prefer to purchase climate-conscious products and brands with a low or decreasing carbon footprint

Three imperatives for digital transformation

Adopt Industry 4.0

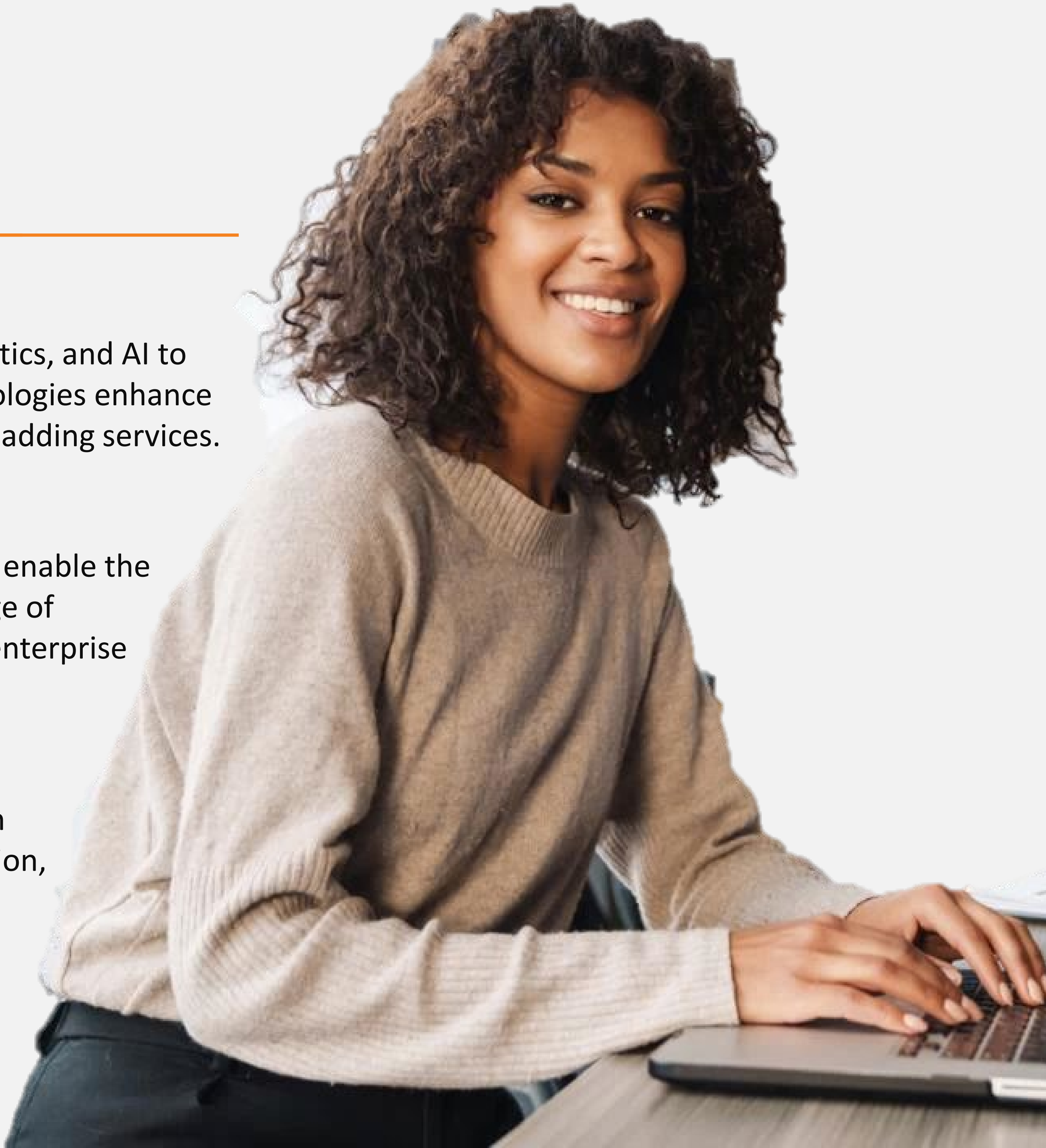
Manufacturers are using IoT technologies such as cloud, data analytics, and AI to continuously improve operations and products. Industry 4.0 technologies enhance manufacturing methods and incorporate internet-based and value-adding services.

Integrate IT and OT

Advanced technologies (such as AI and cloud and edge computing) enable the convergence of OT and IT ecosystems in factories. To take advantage of information-driven factory dynamics, manufacturers must deploy enterprise architectures that integrate the best of both worlds.

Foster a digital-first culture

In a digital-first culture, the entire organizational culture shifts from process-driven to data-driven. The key attributes are experimentation, cross-functional collaboration, automated information exchange, decentralized decision-making, and transparent communication at all levels.



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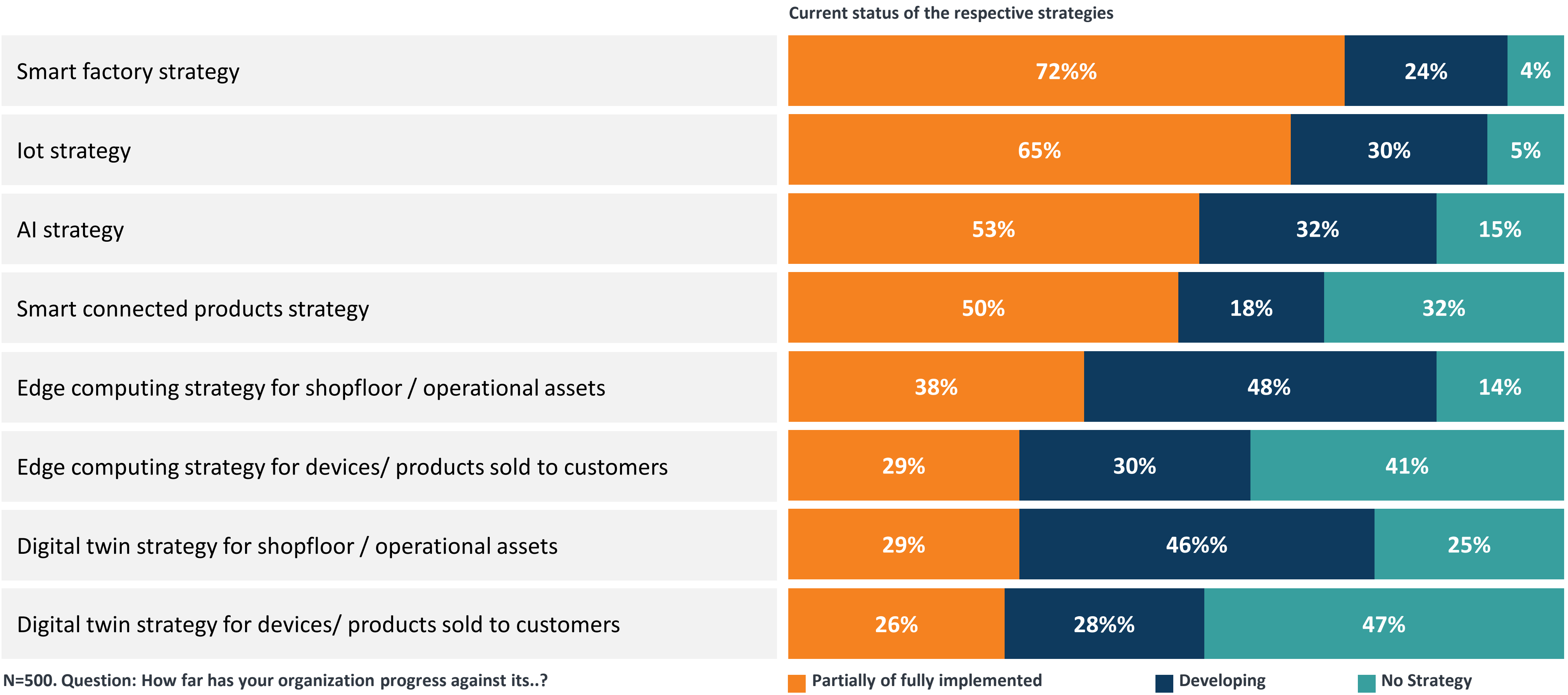
Progress of key transformation strategies



N=500. Question: How far has your organization progress against its..?

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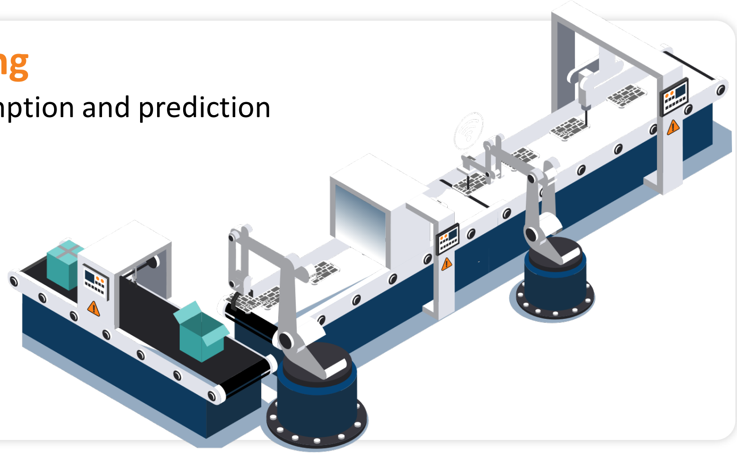
Agile & connected factory is not the future, it is the reality

Connected devices

Real-time device interaction and reporting

Predictive manufacturing

Smart actions from data consumption and prediction

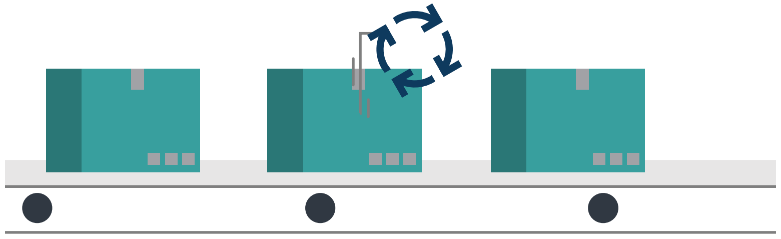


Supply chain visibility

Unifying data across the manufacturing value chain

Advanced analytics

Continuous insights-based evolution of processes



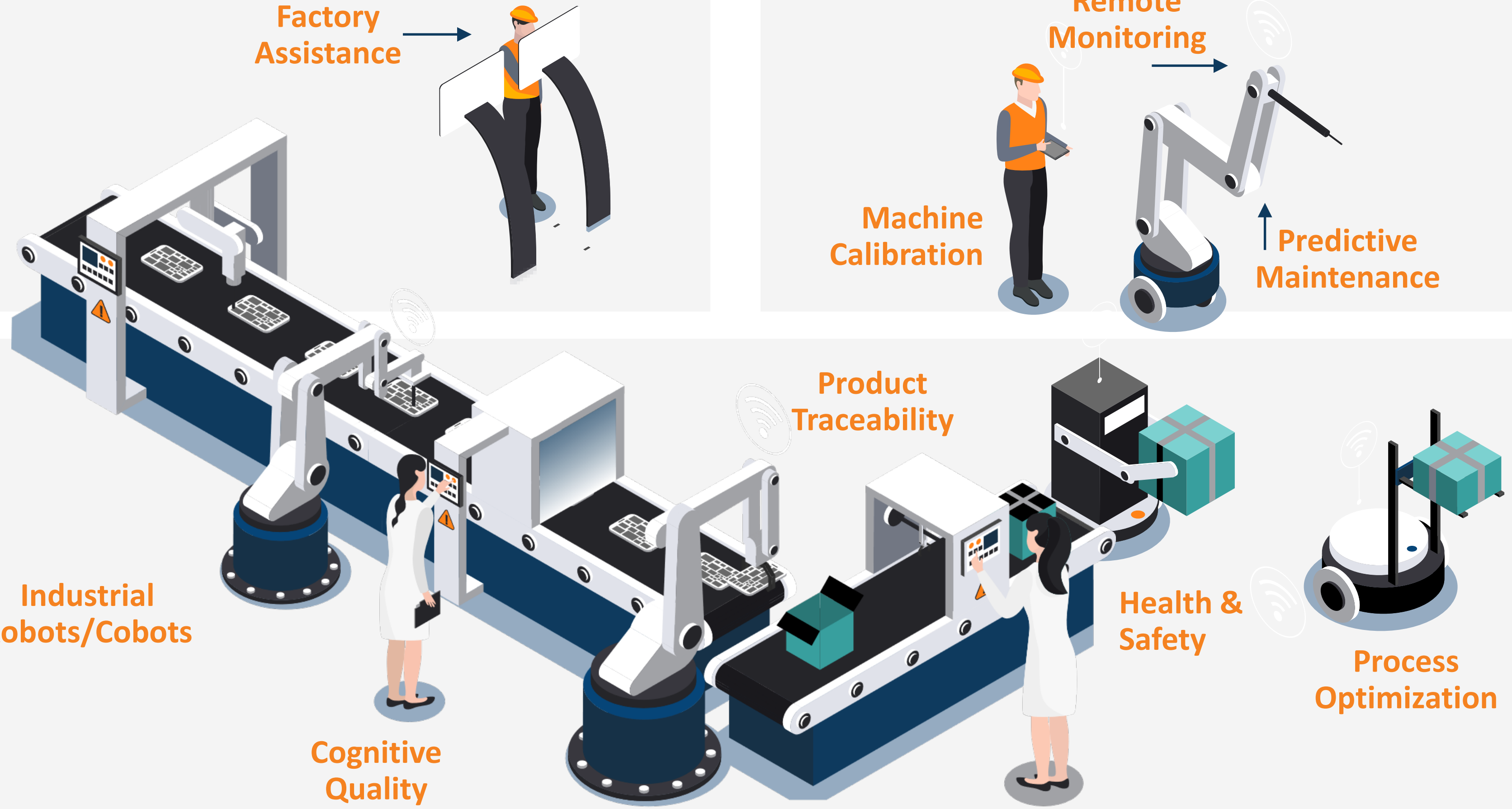
Safety improvement

Task and environment insights leading to safety recommendations

WARNING
Hard
Be

Columbus

AI powering connected factory



MANUFACTURING PLANT

Factory Assistance

Industrial Robots/Cobots

Cognitive Quality

Product Traceability

Health & Safety

Process Optimization

GLOBAL FACILITY INSIGHT

Remote Monitoring

Machine Calibration

Predictive Maintenance

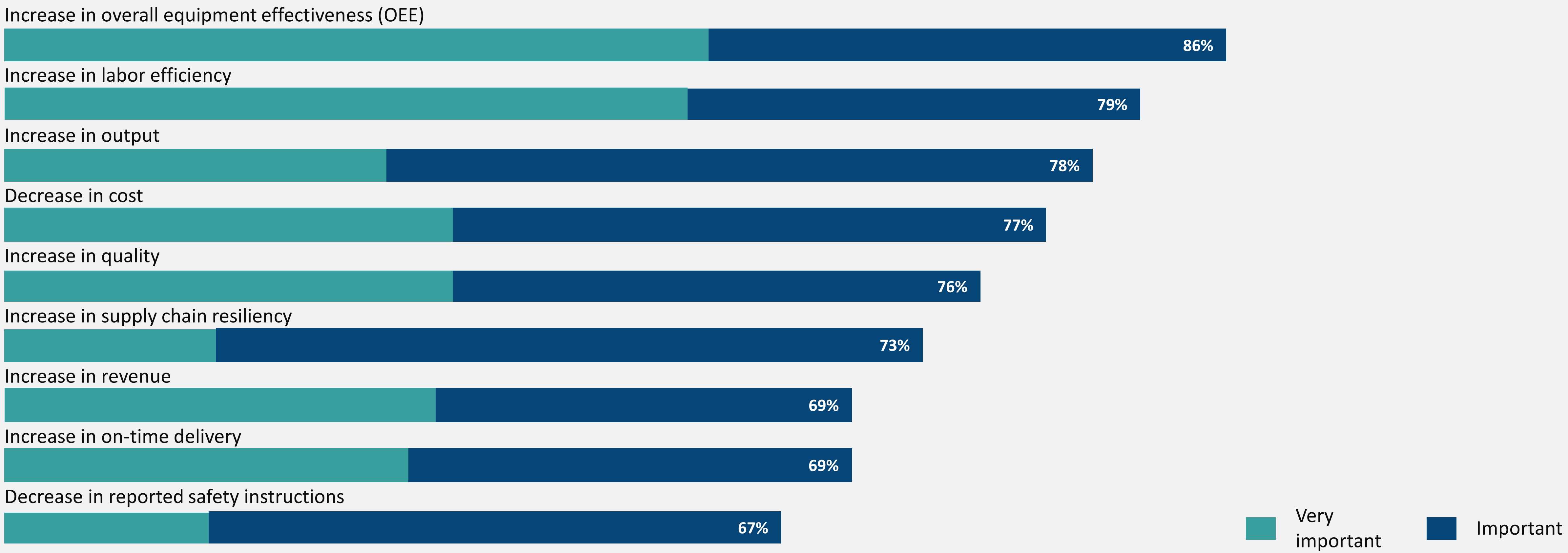
CUSTOMER SITE

Smart Systems

THIRD-PARTY LOGISTICS

Autonomous Vehicles & Robots

OEE is the leading KPI of a Smart Factory strategy adoption



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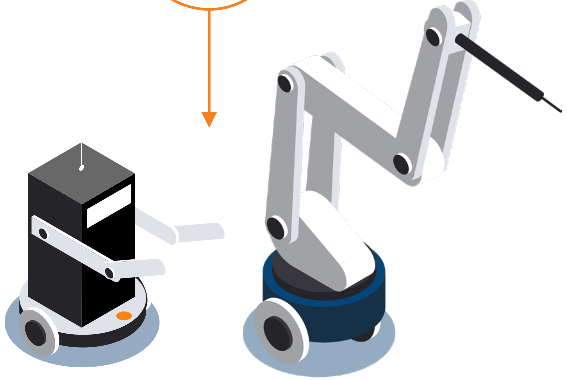
Start with digitizing your maintenance program

Maintenance Program

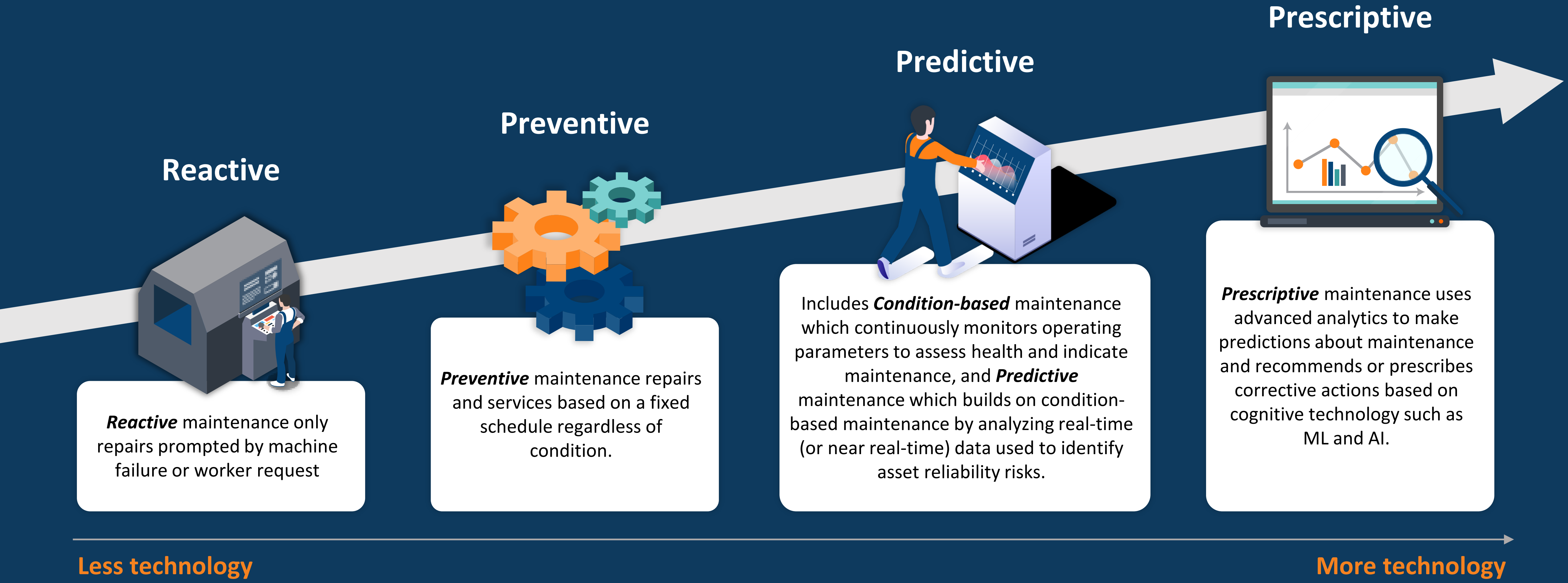
Use **Asset Performance Management** to monitor disparate assets across the factory or globe

Use the **Predictive Maintenance** preconfigured tool to predict points of failure and reduce unplanned downtime and maintenance costs



Use the **Quality Management** AI systems that detect quality defects through image recognition and other parameters

Evolution of maintenance



Reactive

Reactive maintenance only repairs prompted by machine failure or worker request

Preventive

Preventive maintenance repairs and services based on a fixed schedule regardless of condition.

Predictive

Includes ***Condition-based*** maintenance which continuously monitors operating parameters to assess health and indicate maintenance, and ***Predictive*** maintenance which builds on condition-based maintenance by analyzing real-time (or near real-time) data used to identify asset reliability risks.

Prescriptive

Prescriptive maintenance uses advanced analytics to make predictions about maintenance and recommends or prescribes corrective actions based on cognitive technology such as ML and AI.

Less technology

More technology

Business impact of asset downtime

Asset downtime results in not being able to produce the product in a timely manner, missing out on on-time delivery of customer orders.

Direct costs

- 1/3 of maintenance costs can be related to unnecessary expenditures associated to bad planning, overtime etc.
- Variable costs are usually associated with bad yield or poor quality due to equipment malfunction

Reactive and preventive maintenance lead to over-inspection and overtime to fix broken assets.

Indirect costs

Equipment availability and performance is a significant contributor to indirect value drivers

- Quality issues can impact brand image and reduce profit margin
- Late delivery decreases customer satisfaction and customer lifetime value

What are the challenges?

Availability of data

Absence of data skills

Inadequate change management

Difficulty developing applications

What is the right process and steps?

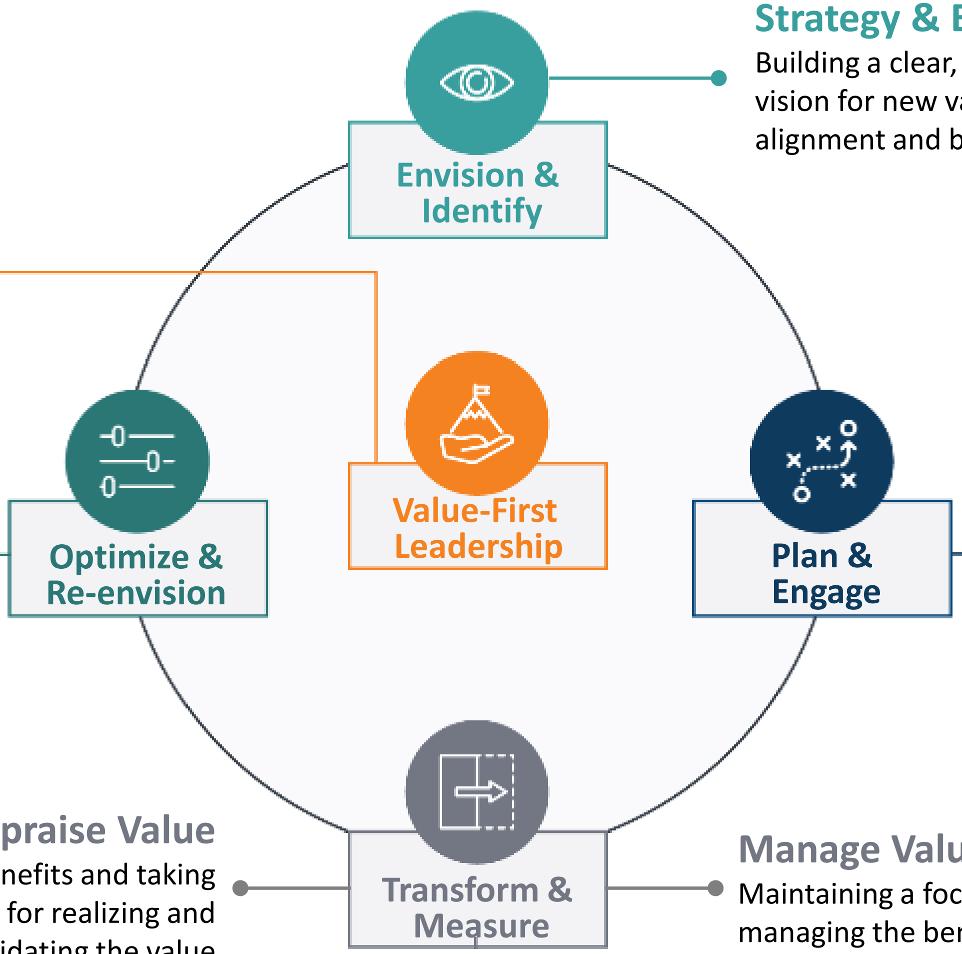
1. Set Clear Objectives with Stakeholder Input
2. Identify Critical Equipment with Stakeholder Prioritization
3. Deploy Sensors with Stakeholder Buy-In
4. Centralize Data Collection for Stakeholder Access
5. Data Analysis for Insights and Stakeholder Reporting
6. Set Maintenance Triggers with Stakeholder Consensus
7. Schedule Proactive Maintenance with Stakeholder Involvement
8. Integrate with Workflow and Stakeholder Roles
9. Continuous Improvement with Stakeholder Feedback
10. Scale Success with Stakeholder Support

The Winning Formula

Digital Technology + Business Transformation = New Value

To achieve new value, you must concurrently deploy the right digital technologies and be strong in many of the disciplines that lead to successful business transformation.

An overview of Value-First approach by Columbus



Envision & Identify

Value-First Leadership

Optimize & Re-envision

Plan & Engage

Transform & Measure

Value-First Leadership
Leading a business value creation culture and providing governance for the organization's value management discipline. Business-driven and integrating value management into the other change and transformation disciplines

Strategy & Envisioning
Building a clear, bold and compelling vision for new value and gaining strategic alignment and buy-in on the priorities

Identify Further Value & Optimize
Establishing opportunities for further improvement and value evolution

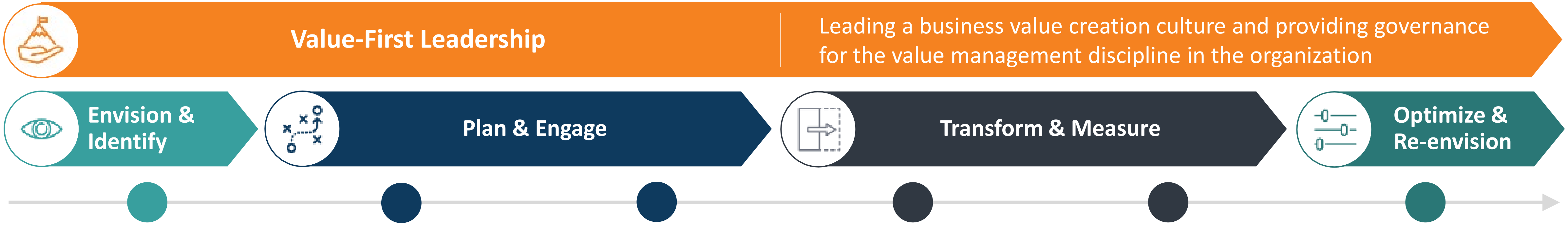
Value Analysis & Solutions
Unpacking the value and designing the solution to produce it

Value Proposition & Roadmap
Planning the roadmap and pace of the change and building the business case and coalition for its delivery

Realize & Appraise Value
Tracking and measuring benefits and taking any remedial action for realizing and consolidating the value

Manage Value Through Change
Maintaining a focus on value in every change by managing the benefits plan's delivery

The approach in more depth – The Value First Framework



Value-First Leadership

Leading a business value creation culture and providing governance for the value management discipline in the organization

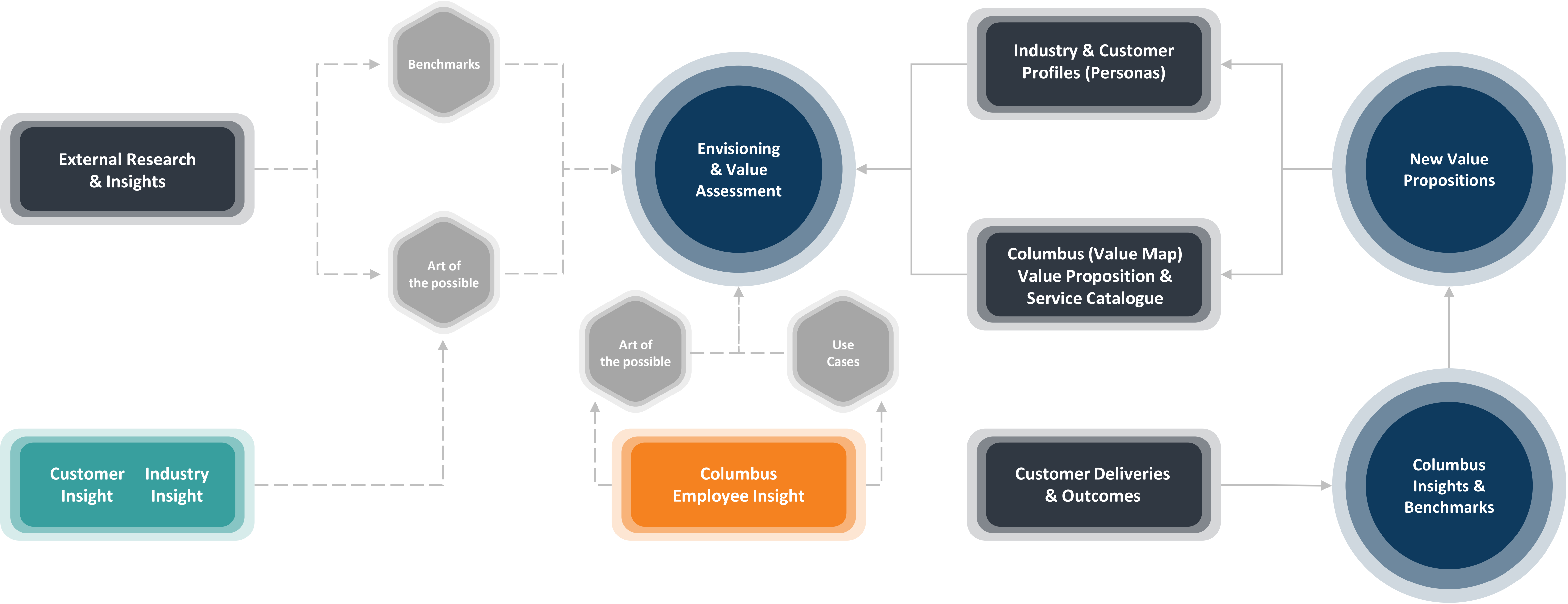
Envision & Identify → **Plan & Engage** → **Transform & Measure** → **Optimize & Re-envision**

Strategy and Envision	Value Analysis and Solutions	Value Proposition and Roadmap	Manage Value Through Change	Realize and Appraise Value	Identify Further Value and Optimize
Building a clear, bold and compelling vision for new value, and gaining strategic alignment and buy-in on the priorities	Unpacking the value and designing the solution to how it can be delivered	Planning the roadmap and pace of the change, and building the business case and coalition for how it will be delivered	Maintaining a focus on value in every change by managing the delivery of the benefits plan	Tracking and measuring benefits and taking any remedial action for realizing and consolidating the value	Establishing opportunities for further improvement and the evaluation of the value
Key stakeholder engagement and envisioning workshops	Value and gap analysis and solutioning	Delivery cost/benefit planning, road map and business case	Establish value owners Manage value dependencies and deliver changes	Realise benefits and value Identify unexpected benefits	Key stakeholder engagement and envisioning workshops
Business assessment Workshops Prioritised opportunities Report & playback	Value assessment Gap and Solution analysis Value dependency map Solution roadmaps	Value proposition Delivery capabilities Roadmap Benefits plan & business case	Value and change dependency maps Benefit realization plans	Benefit realization plans Benefits tracker Value dashboard	Workshops Opportunities list Report and playback
Business Focus	**Business & Technology Focus**	**Business, Technology & Planning Focus**	**Business, Technology & Change Focus**	**Business, Technology & Change Focus**	**Business, Technology & Change Focus**

How we’ll get there

Strategy and Envision	Value Analysis and Solutions	Value Proposition and Roadmap
Building a clear, bold and compelling vision for new value, and gaining strategic alignment and buy-in on the priorities	Unpacking the value and designing the solution to how it can be delivered	Planning the roadmap and pace of the change, and building the business case and coalition for how it will be delivered
Key stakeholder engagement and envisioning workshops	Value and gap analysis and solutioning	Delivery cost/benefit planning, road map and business case
Business assessment Workshops Prioritised opportunities Report & playback	Value assessment Gap and Solution analysis Value dependency map Solution roadmaps	Value proposition Delivery capabilities Roadmap Benefits plan & business case
Business Focus	**Business & Technology Focus**	**Business, Technology & Planning Focus**

Bringing this all together



External Research & Insights

Benchmarks

Art of the possible

Customer Insight

Industry Insight

Envisioning & Value Assessment

Art of the possible

Use Cases

Columbus Employee Insight

Industry & Customer Profiles (Personas)

Columbus (Value Map) Value Proposition & Service Catalogue

Customer Deliveries & Outcomes

New Value Propositions

Columbus Insights & Benchmarks

Columbus

Three packages to fit your business needs

Starter

Strategy and Envisioning

- Envisioning workshops
- Playback to client, with recommendations
- ROM Value, High-level solution, capabilities required, recommendations and suggested next steps

Standard

Starter + Value Analysis and Solutions

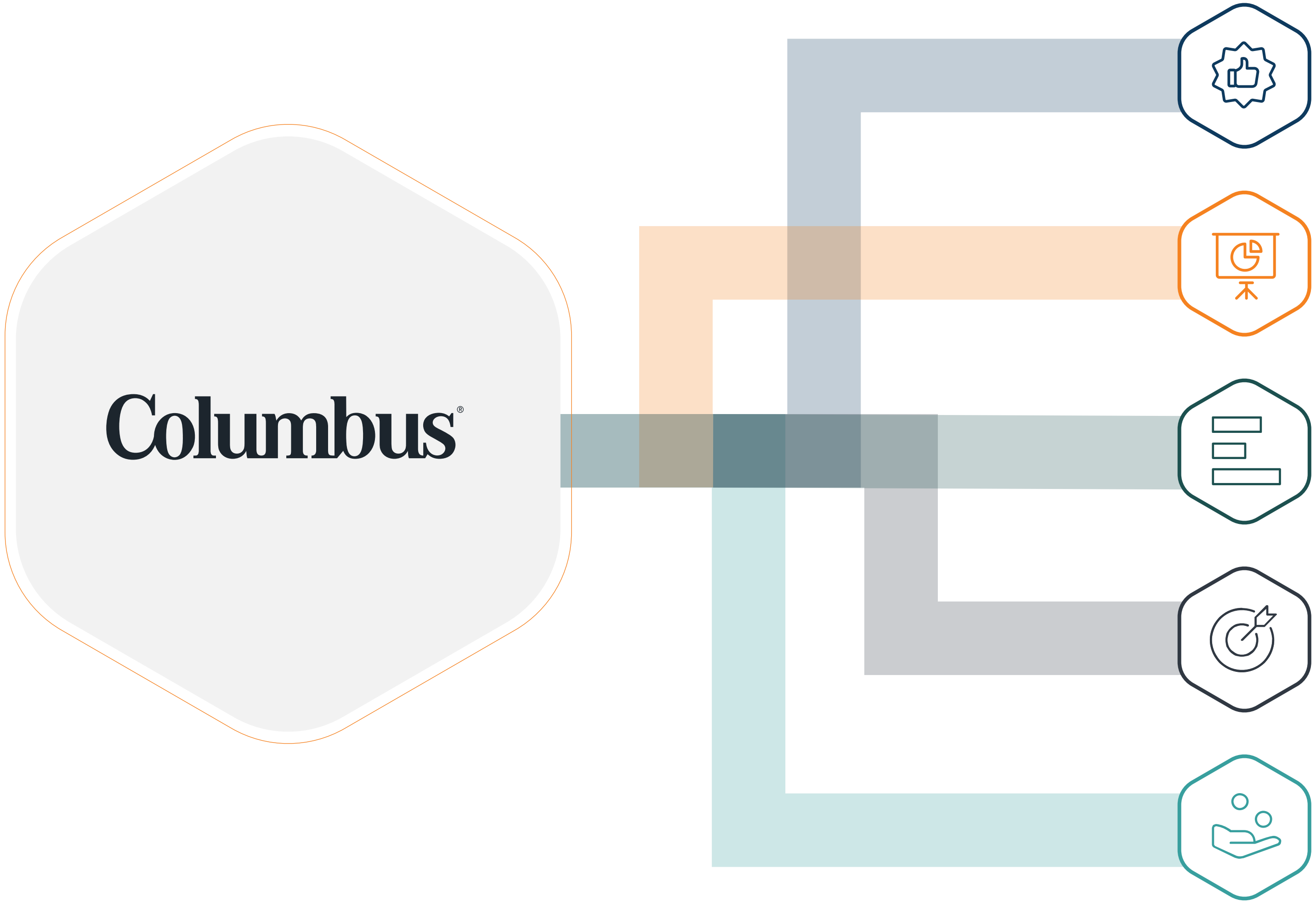
- Envisioning workshops
- Technology, Data and Integration workshops
- 2 x Playbacks to client, with recommendations
- Value analysis with ROI where solution costed, bid level solution, capabilities required, recommendations and suggested next steps

Advanced

Standard + Transformation Roadmap

- Envisioning workshops
- Technology, Data and Integration workshops
- Planning and cost workshops
- Several Playbacks to client, with recommendations
- Solution and delivery Roadmap, ROI, Value Levers, solution, capabilities required, recommendations and suggested next steps

Why choose Columbus



Holistic business transformation approach

A realistic and pragmatic strategies

Adaptive approach – we run multiple projects simultaneously

We know industry benchmarks and challenges and understand your processes

We cover all business-critical processes, eliminating the need for multiple partners

Safe pair of hands for your entire transformation journey

Cloud ERP
to optimize Supply Chain & Finance

Power Platform
to accelerate Innovation with Low Code

Customer Experience
to improve customer experience and engagement strategy

Data & AI
To provide actionable insights for data-driven decision making

Digital Commerce
Create customer-centric e-commerce strategy to boost revenue

Security
Protect your business-critical assets

Change management built-in

Seamless transition into operations

Summary of Practicalities

PARTICIPANTS

Representative from IT department

Representatives from operations department

Top management representative

OTHER DETAILS

Geography: globally

Delivery model: online/offline, 1 full day

Price: Starting at $ 11 500
*can be Microsoft funded

Our mission

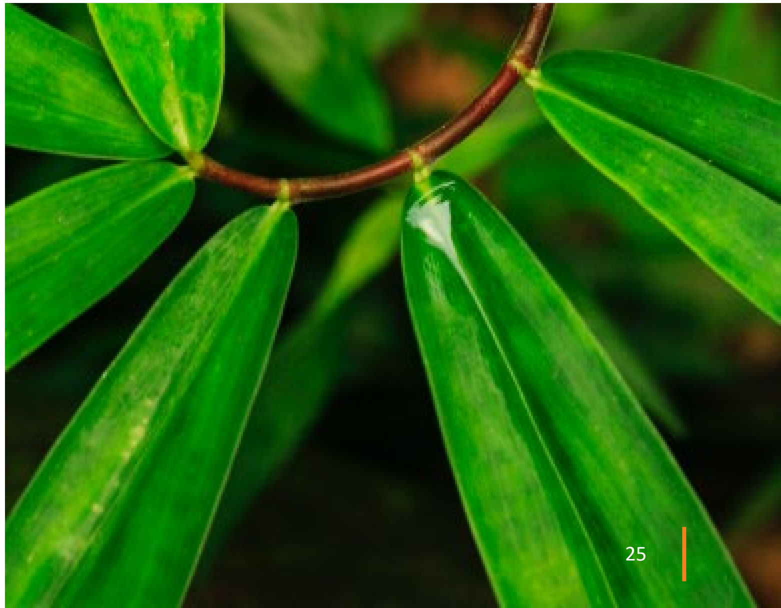
We deliver customer success

30
Years of in-depth industry, technology, and process experience

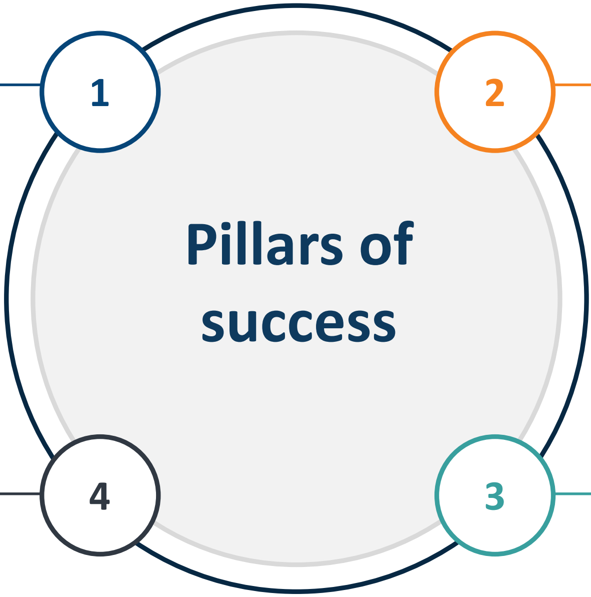
5000+
Enterprise & Large SMB customers worldwide in various industries

9,000
Business-critical application implementations

- Columbus is a global digital advisor and IT consulting company
- Part of NASDAQ Copenhagen stock exchange since 1998
- Largest Microsoft Dynamics (ERP) partner in Northern Europe



Realize the full potential of your business



Pillars of success

Scalable partnership

Local presence
empowered
by global experience
and resources

Increased value

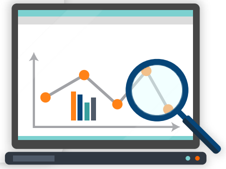
Digital advisory,
industry knowledge and
best-in-class ERP platform

Business growth

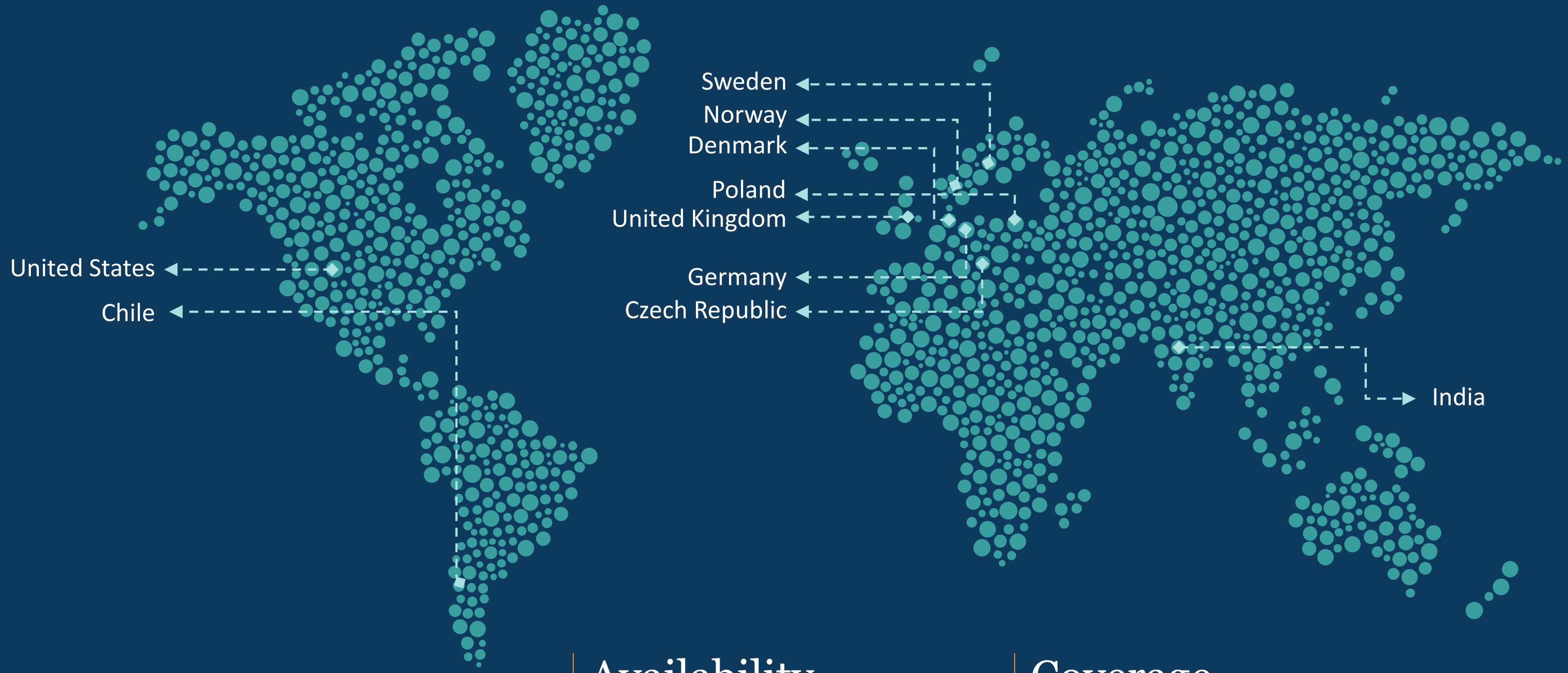
Full range of business-critical services

Guaranteed efficiency

Best practice
Methodology
for life in the cloud



Local presence empowered by global experience & resources


Sweden
Norway
Denmark
Poland
United Kingdom
United States
Chile
Germany
Czech Republic
India

Availability
multiple time zones

Coverage
global resources

10
countries

9
languages

1600
employees globally

24/7
support

Columbus

Manufacturing

Optimize time to market and transform your business towards servitization

- Design Engineering, ECM
- Generic products, Configuration
- Product Life Cycle management

- Statistical Demand Forecasting
- MES & Resource management, MR/AR
- Global S&OP, Load balancing

- Enterprise Asset Management
- Asset Service Management
- Preventive & Predictive maintenance

ESSENTRA

NASTA®
FORNØYDE KUNDER VENDER TILBAKE

KK Wind Solutions

LINAK®
WE IMPROVE YOUR LIFE

Mazak

MAERSK CONTAINER INDUSTRY

NCC

AXFLOW

SÖDRA