

ERFOLGSBEISPIELE AGILER ENTWICKLUNG IN KOLLABORATIVER ADAMOS ALLIANZ

DR. FELIX HACKELÖR
HEAD OF HORIZONTAL TECHNOLOGY & INDUSTRIAL MARKETPLACES

ADAMOS GMBH

26.06.2018



Digital transformation ...in Mechanical Engineering

REVENUE DISTRIBUTION TODAY



REVENUE DISTRIBUTION IN THE FUTURE



- + Digital portion of revenue stream is continuously growing
- + How do manufacturing companies increase competitive edge and revenue with digitization?



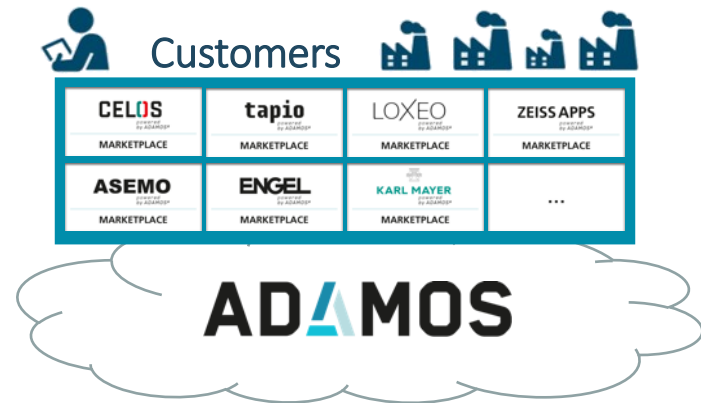
ADAMOS Alliance:

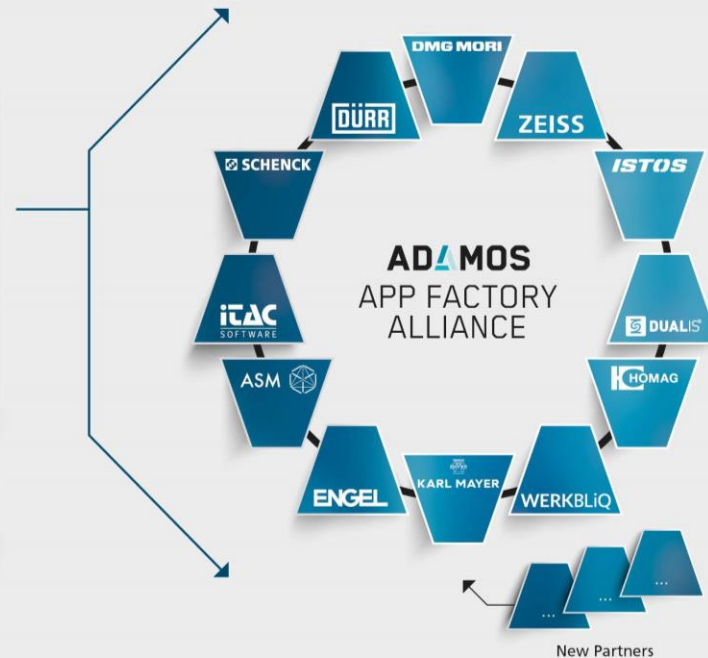
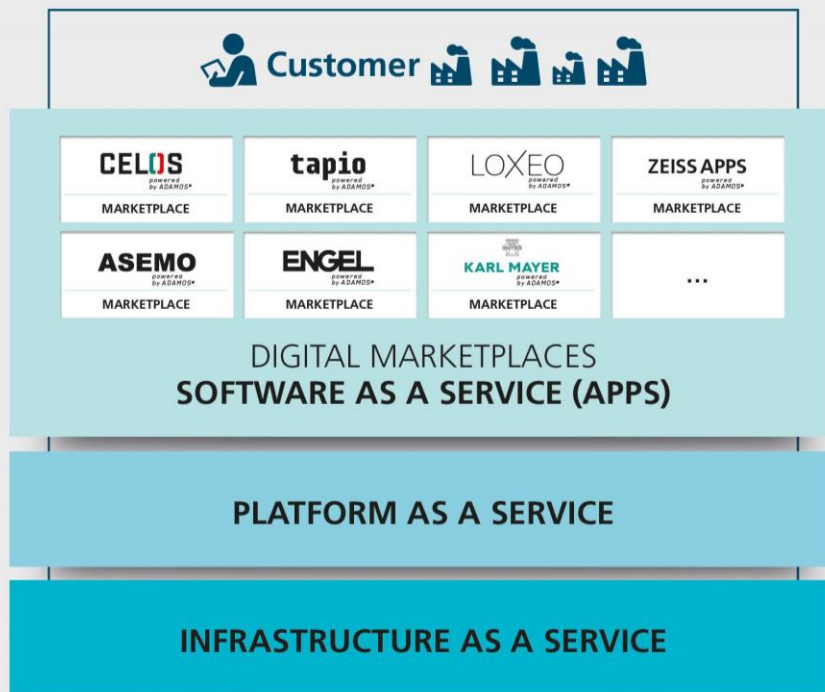
- + DMG MORI, Dürr & Software AG initiated ADAMOS
- + ZEISS, ASM PT, ENGEL Austria, KARL MAYER joined as partners
- + Together we combine our forces for Industry 4.0 and the Industrial Internet of Things (IIoT).
- + ADAMOS is open for further partners.

Traditional Platforms

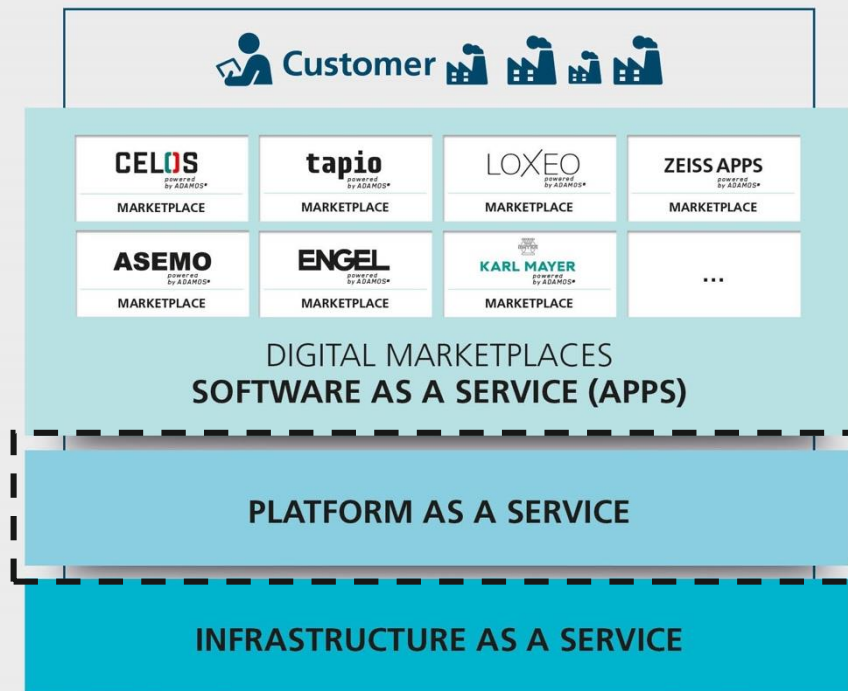


ADAMOS Platform





- ADAPTIVE** Continuous adaption and self-optimization
- MANUFACTURING** Of the production and all manufacturing processes.
- OPEN** Open IIoT-platform for partners.
- SOLUTIONS** Customer needs as the basis for digital solutions.



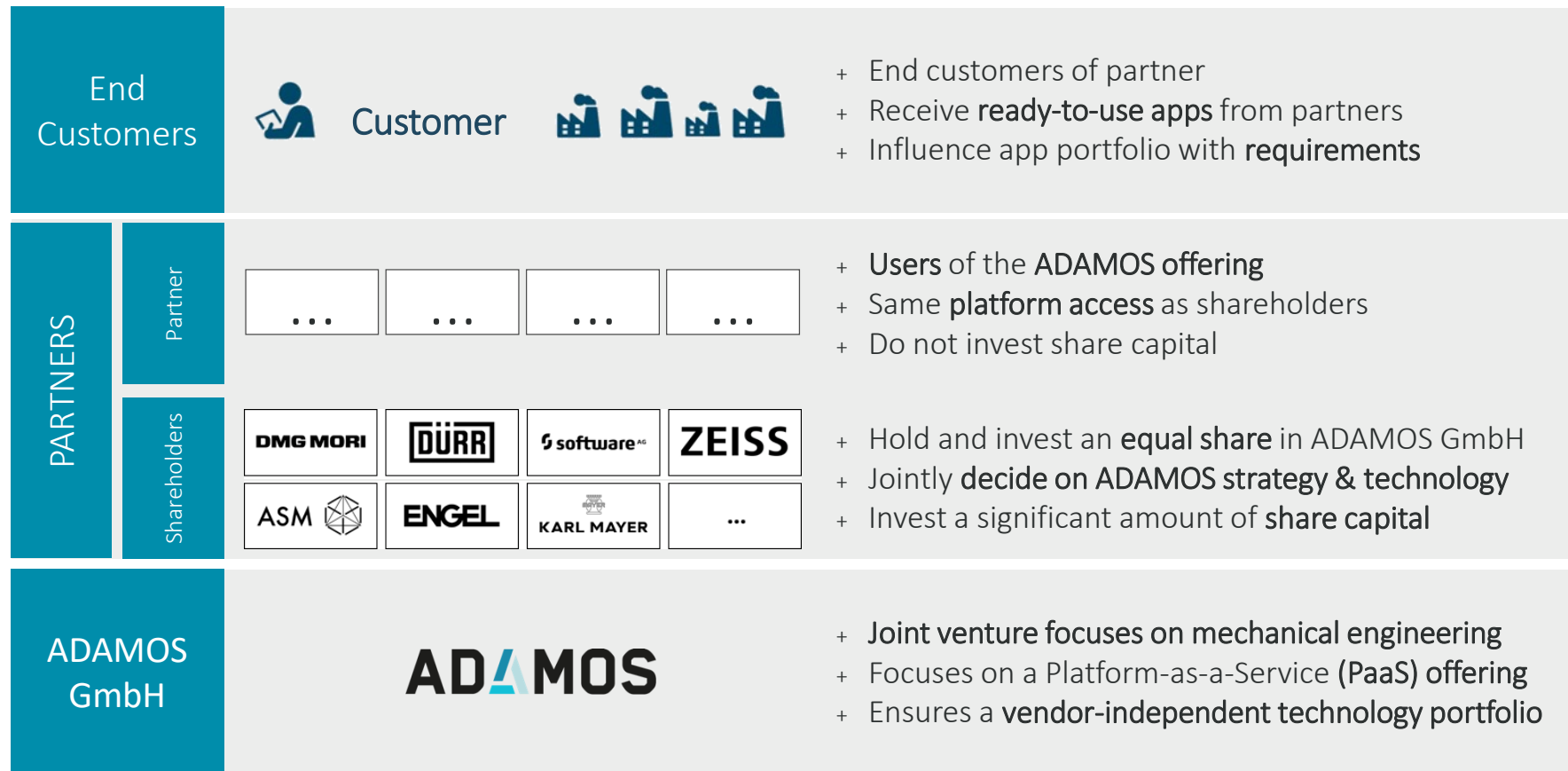
FINAL CUSTOMER

PARTNER DIGITAL ECOSYSTEM
Based on ADAMOS IIoT platform

ADAMOS IIOT PLATFORM
ADAMOS GMBH

INFRASTRUCTURE INDEPENDENCE
WORLD-WIDE CLOUD ON-PREMISES EDGE





ADAMOS empowers manufacturers to create a digital identity.
Together we identify, implement and execute market-ready IIoT business models.



MARKETPLACE

Distribution channel for IIoT Apps which can be re-branded and adopted by ADAMOS partners

- + Faster time-to-market
- + Leveraging new revenue streams



PLATFORM & STANDARDS

Standardized services to rapidly develop, deploy and operate IIoT apps for end customers

- + Open, non-disruptive industry specific platform
- + Enabling cross value-chain solutions



PARTNER NETWORK

Accelerating innovation through cross-industry knowledge-sharing

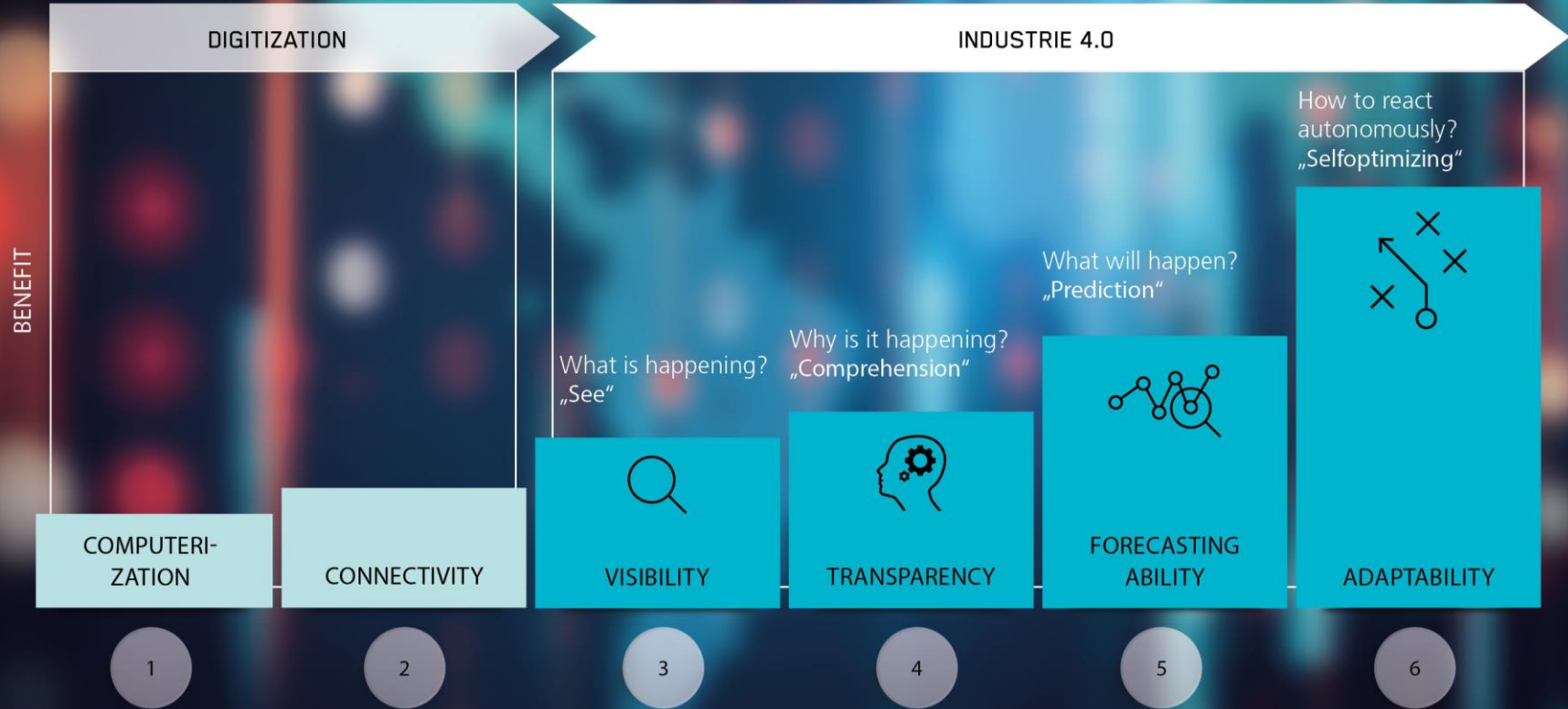
- + Digital Transformation due to co-innovation between partners
- + Sharing of knowledge, best practices & reusable assets
- + Recommended development partner network

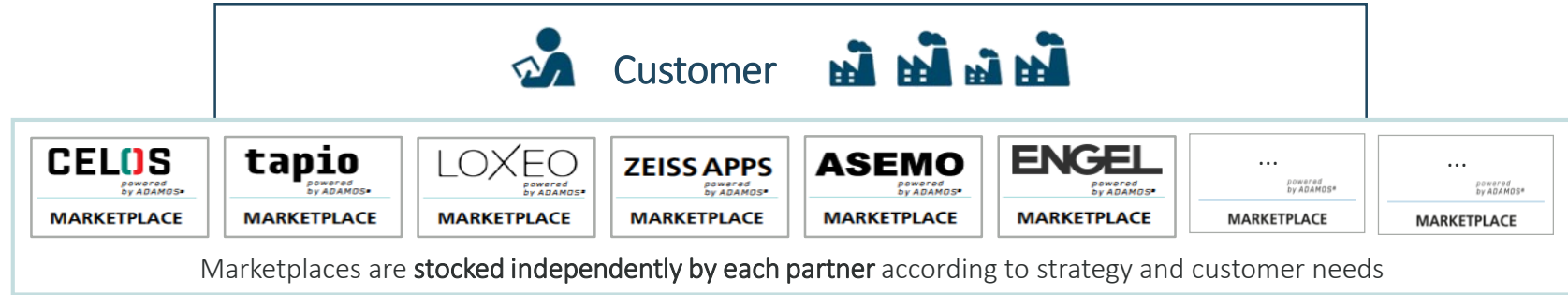


ADAMOS PARTNER

Marketplaces, ecosystems & use cases:

Digital solutions driving efficiency & new business models





Solution portfolio aligned to address all manufacturing industry needs



PAINT ROBOT DATA VISUALIZER

DÜRR



EcoPRO PLANT ANALYTICS
@VW

DÜRR



LOXEO
CTS

LIFECYCLE ASSISTANT

DÜRR



EDGE ANALYTICS BUILDER
@BMW

DÜRR



UNBALANCE PLANE 2
14.111gmm

LOXEO

MACHINE DASHBOARDS
@DIRKS

DÜRR



METROTOM MONITOR

ZEISS



IoTconnector

DMG MORI



CELOS MESSENGER

DMG MORI



PRODUCTION DASHBOARD
(OMI)

ASM



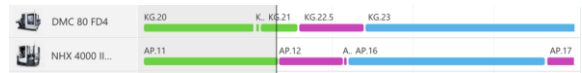
MACHINE FACEBOOK

ASM



ER 131

KARL MAYER



PRODUCTION PLANNING

DMG MORI



ADAMOS

IoTconnector & Messenger

Vernetzung & Live-Status der
von Maschinen

DMG MORI





CELOS

CELOS ist DMG MORI's APP-basierten Steuerungs- und Bedienumfeld. Mit ADAMOS baut DMG MORI CELOS zu einem durchgängigen, digitalen Marktplatz mit vollumfassenden IIoT-Funktionalitäten aus .

ADAMOS

ADAMOS wurde als ein offenes, hersteller-Neutrales, auf führenden Technologien basierendes IIoT-Umfeld konzipiert, um Maschinen- und Anlagenbauern ein individuelles und souveränes IIoT-Geschäft zu ermöglichen.

PATH OF DIGITIZATION

DIGITAL FACTORY

CELOS MANUFACTURING

CELOS MACHINE



MORE THAN JUST SMART

Basis of continuous digitization
APP-based processes.



INTELLIGENT WORKFLOWS

Consistent control and
organization of processes in
production.



OPEN CONNECTIVITY

Networking of DMG MORI
machines of older generations
and third-party machines.

CELOS[®]



ADAMOS IIOT PLATFORM

INFRASTRUCTURE AS A SERVICE



Vorteile

...für Endkunden & Werkzeugmaschinenbauer

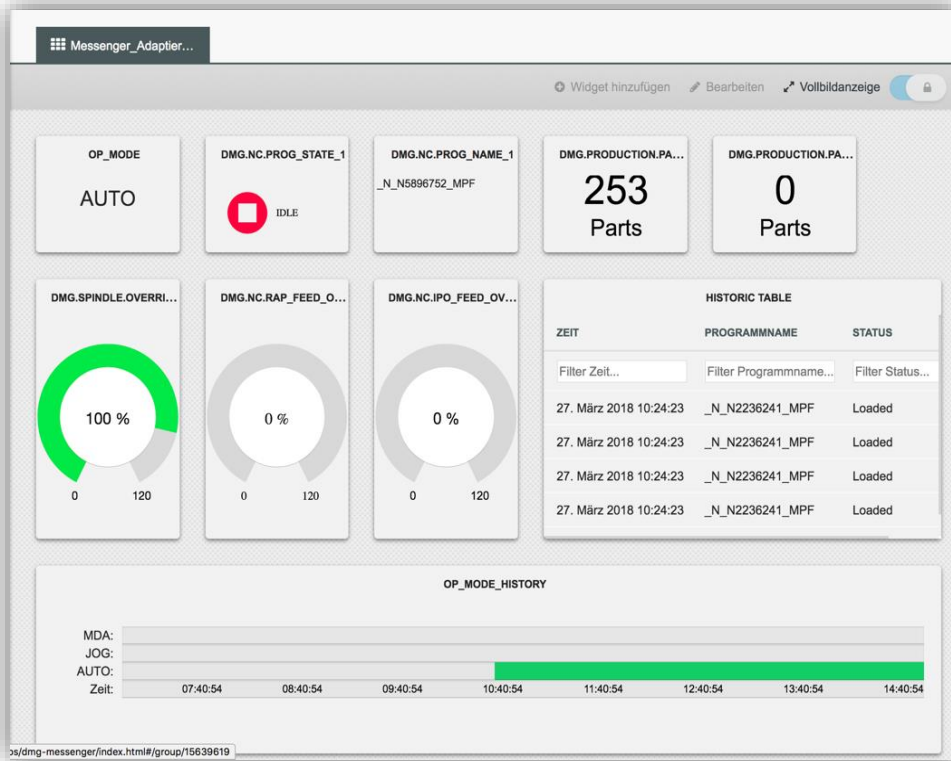
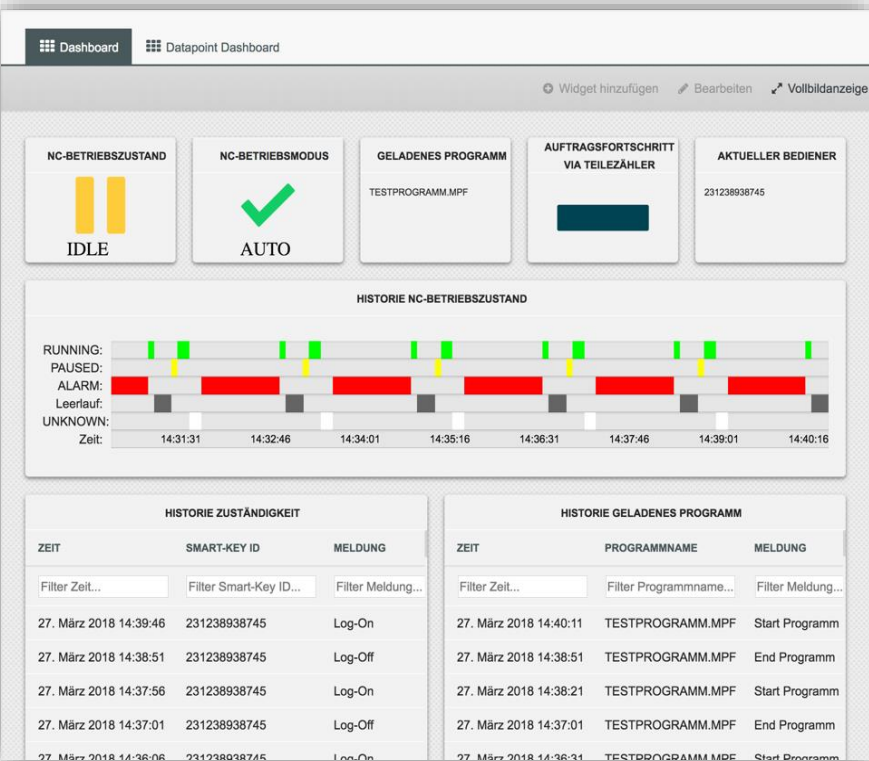
- + Ein schnelle Weg in die Cloud
- + **Vernetzung** von DMG MORI Maschinen mit CELOS (Heidenhein, Siemens)
- + Einfacher und schneller **Datenaustausch** zwischen dem IoTconnector und Apps
- + **Bessere Verfügbarkeit und schnellere Anpassbarkeit der Apps**
- + Schnittstellen ermöglichen **Anwendung neuer Remote-Services**: e.g. Plug-&-Play-Verbindung zwischen der SERVICEcamera und dem NETservice
- + **Einfaches Nachrüsten** des IoTconnectors für weitere Maschinen, ohne an den IPC zu müssen.





Machine Live-Status!

- Display by user: machine operator, operational planner, strategic planner Service employee/maintainer
- Analysis of machine running time, standstill and errors
- Statuses of machine components
- Better availability and faster adaptability by using the ADAMOS IIoT platform



A photograph of a car body in a drying rack, with blue geometric shapes overlaid in the top-left and bottom-left corners.

ADAMOS

LOXEO

Digitale Marktplatz für alle
Dürr- und Schenck-Kunden

The Dürr logo, consisting of the word 'DÜRR' in a white box, is positioned next to a blue network graphic with glowing nodes.

DÜRR

WELCOME TO THE COCKPIT OF YOUR DIGITIZED PRODUCTION



CONNECTIVITY BOARDS

Your customizable system and machine dashboard displays your production line on a tablet, smartphone or on your computer.



E-LEARNING

Knowledge module for maximum system and machine competence including tutorials, interactive e-Learnings and more.



SERVICE HELPDESK

You can find solutions to any problem here and the right contact partner is always guaranteed.

LOXEO is the digital marketplace for the customers of Dürr and Schenck – through the combination of machine and system data the overall production process is perfected and productivity is optimized.

LOXEO | Widget hinzufügen | Editieren | Vollbildanzeige | Mehr...

- Homepage
- ÜBERSICHTEN
- Alarme
- GRUPPEN
 - Dürr
 - Dürr AP
 - Schenk

Locations
Pick a device from the list below to access its dashboards.

Bietigheim-Bissingen

- > Primer
 - > Air Supply Unit
 - > Robot Station

Darmstadt

- > Automotive Wheels (RFLR)

Goldkronach

- > Cleaning Station

Püttlingen

- > TESTING TECHNOLOGY

powered by Connectivity

LOXEO | Alarme | Nur offene Alarme

Kritisch | Wichtig | Weniger wichtig | Warnung

- Homepage
- ÜBERSICHTEN
- Alarme
- GRUPPEN
 - Dürr
 - Dürr AP
 - Schenk

Kritisch | Automatische Aktualisierung | Neu laden

- The device is offline!
27. März 2018 11:37 | X-Wheel #1
- SmartREST Template mit der ID "1000" existiert nicht.
16. März 2018 12:57 | ProductionAGU
- requires 'g' values: fragment
16. März 2018 12:56 | R12
- requires 'g' values: fragment
16. März 2018 12:54 | R11

Wichtig | Automatische Aktualisierung | Neu laden

- Exchange of filter PV12 necessary
27. März 2018 11:36 | Alarmservice200 #1
- In erforderlichen Zeitraum wurden keine Daten vom Gerät empfangen.
5. März 2018 03:19 | VM_Test_Rig

Weniger wichtig | Automatische Aktualisierung | Neu laden

Keine Alarme zu zeigen.

Warnung | Automatische Aktualisierung | Neu laden

- The device should be calibrated
27. März 2018 11:37 | X-Wheel #1

powered by Connectivity

X-ROD
Icon: X-ROD

X-WHEEL
Icon: X-WHEEL

X-WHEEL D
Icon: X-WHEEL D

X-LIGHT
Icon: X-LIGHT

DAP LEGEND LEVEL

- Auto: keine Warnung
- Warnung: Warnung
- Kritisch: Alarm
- Warnung: Alarm
- Warnung: Alarm

NAME PLATE

Unit: LMC 2018
S/N: 10000000000000000000
S/N Firmware Version: 1.0.4
IP Address: 192.168.0.10
Product Type: Air Conditioning

STATUS

Recess

AKTIVE ALARME

Keine Alarme zu zeigen.

NAME PLATE

Unit: LMC 2018
S/N: 10000000000000000000
S/N Firmware Version: 1.0.4
IP Address: 192.168.0.10
Product Type: Air Purification

STATUS

Action

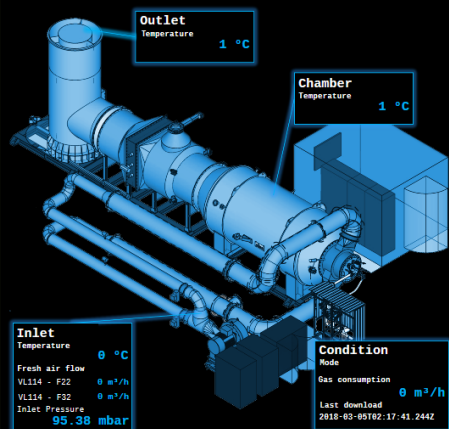
ALARM LIST

- In erforderlichen Zeitraum wurden keine Daten vom Gerät empfangen.
27. März 2018 11:37 | VM_Test_Rig
- In erforderlichen Zeitraum wurden keine Daten vom Gerät empfangen.
5. März 2018 03:19 | VM_Test_Rig

PRODUCTION LINE OVERVIEW

Recessing Station | Filling Station | Reversing Station | Drilling Station | Audit Station

Alarme



OPERATING HOURS

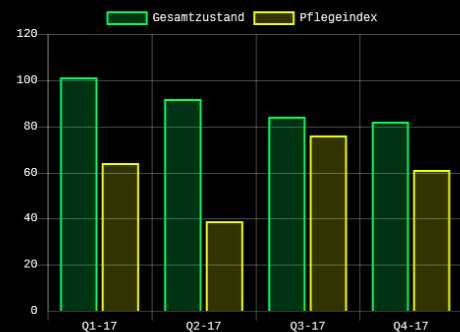
LABEL	CURRENT
Fresh air fan h	41
Standby mode h	13
Heating up mode h	161
Fuel pump h	13
Plant ON h	9389
Process mode h	9215

TEMPERATURE

LABEL	TARGET	CURRENT	DIFF	DIFF %
Outlet temperature °C	200	1	-199.00	-99.50
Inlet temperature °C	150	0	-150.00	-100.00
Chamber temperature °C	850	1	-849.00	-99.88

ECOPURE CCF

FKT. GRUPPE	FKT. GRUPPE NO.	STATUS	KOMPONENTEN
Ammoniak	MR167	53 %	Komponenten anzeigen
Kalkdosierung	DS183	28 %	Komponenten anzeigen
Differenzdruck -überwachung	AP191	39 %	Komponenten anzeigen
Druckluftversorgung	MD107	34 %	Komponenten anzeigen
Process System	KA163	33 %	Komponenten anzeigen
General		28 %	Komponenten anzeigen
Wärmetauscher	WT128	39 %	Komponenten anzeigen
Prozessluftventilator	VR117	41 %	Komponenten anzeigen



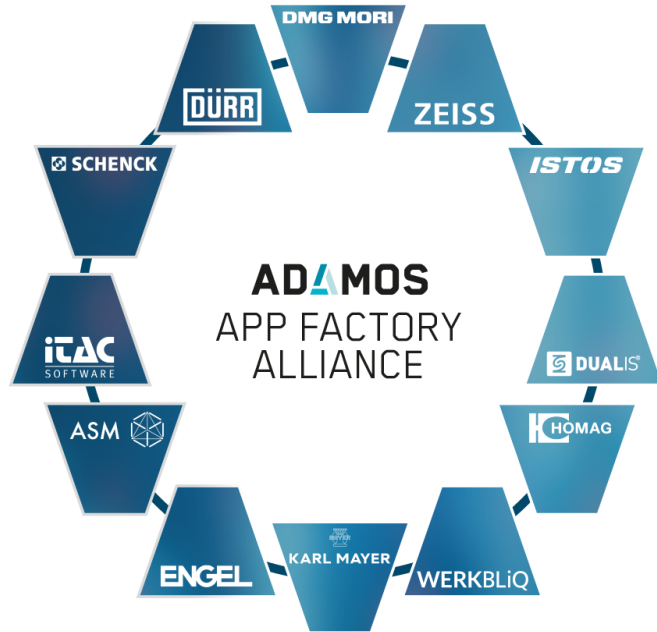


NETWORK FOR DEVELOPMENT

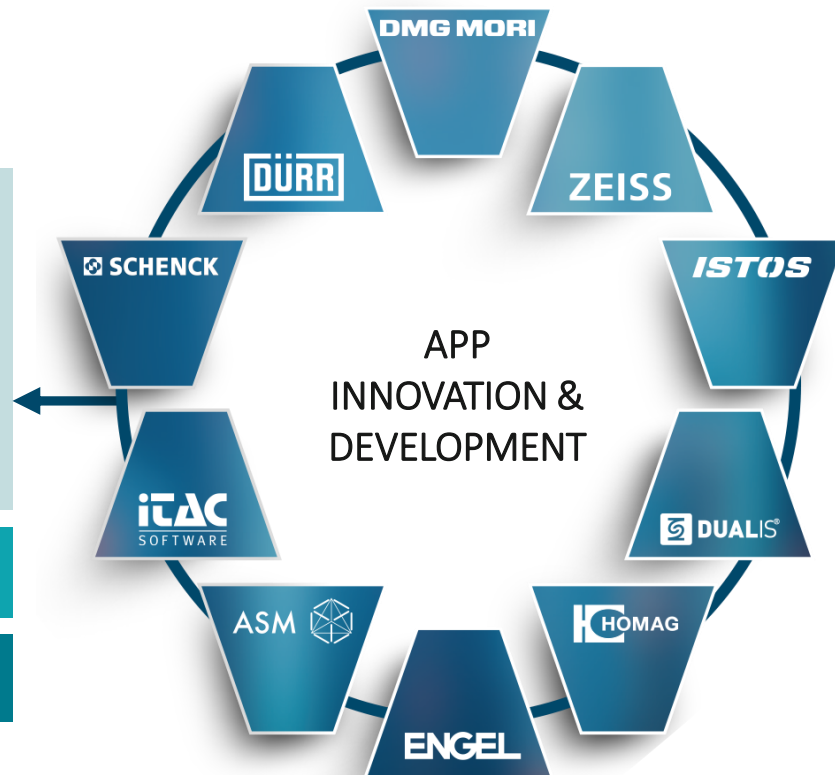
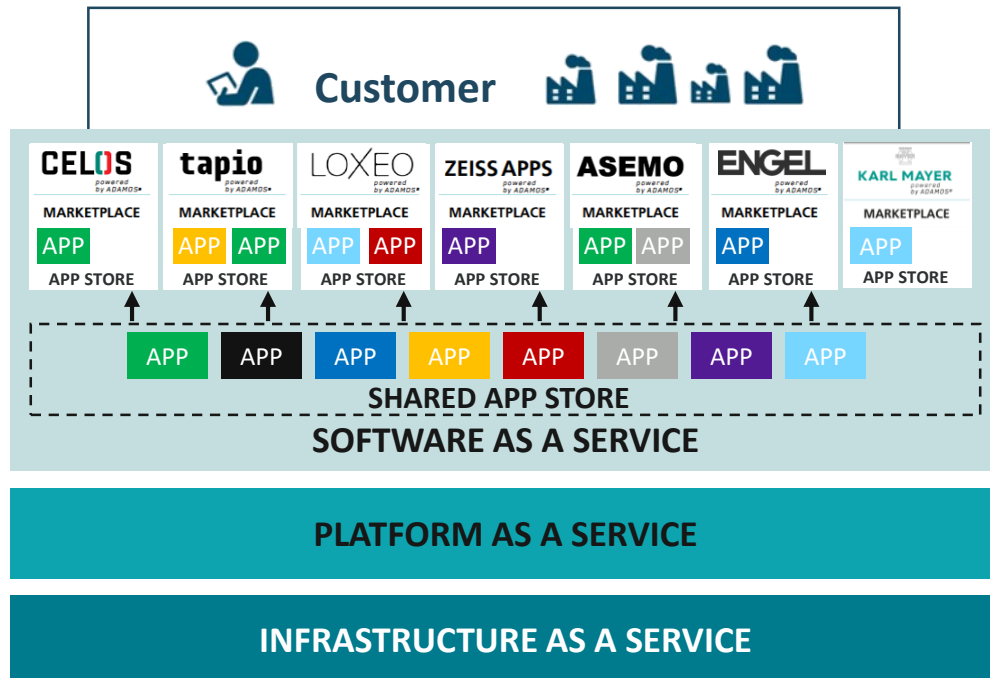
Innovative & differentiating Apps
for faster time-2-market

ADAMOS APP FACTORY ALLIANCE

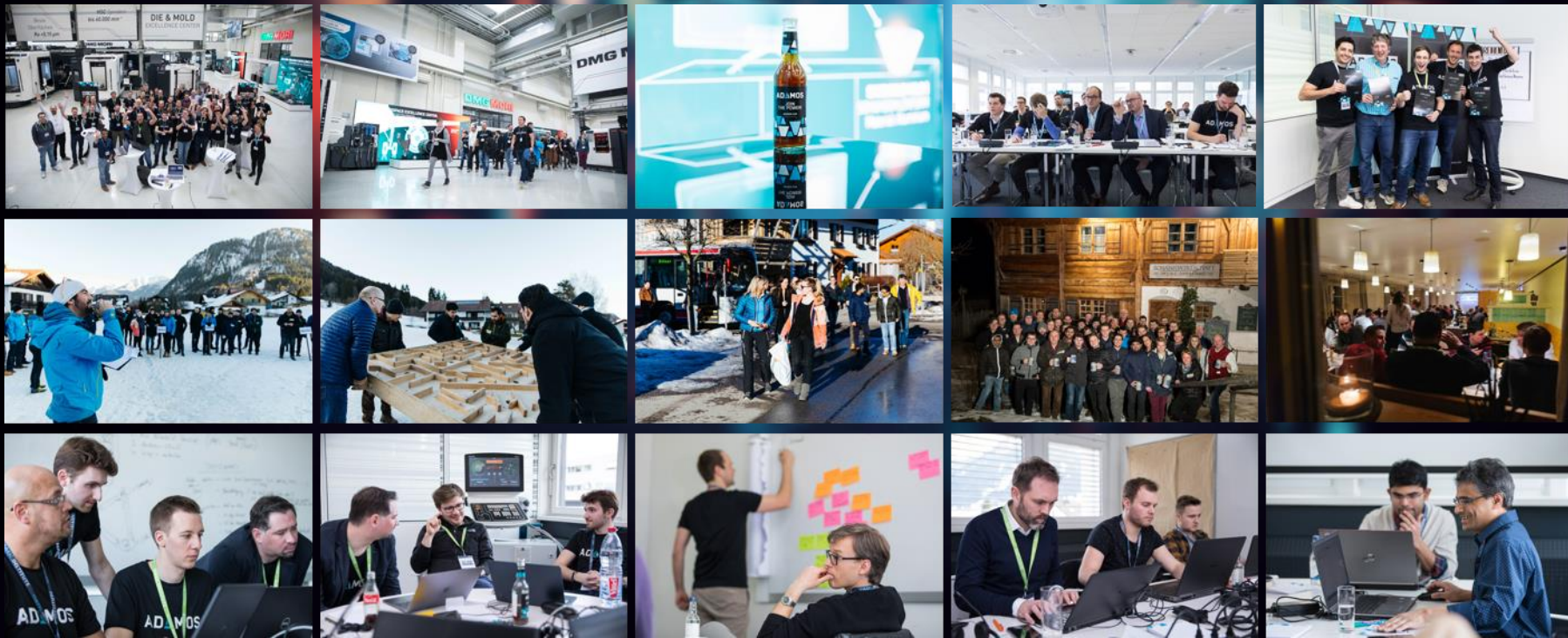
- + is a **loosely coupled strategic cooperation** to profit from each others know-how.
- + **develops Apps** based on technology standards for the ADAMOS IIoT Platform.
- + **publishes the apps** in an app registry.
- + partners and other members of the App Factory Alliance can use & further develop these apps.
- + shares common product management to **leverage synergies**.
- + shares **library** for machine integration connectors.
- + provides an **overview about development** and consulting competencies.



COOPERATION &
KNOWLEDGE SHARING



ADAMOS HACKATHON 4.1 | FOSTERING INNOVATION





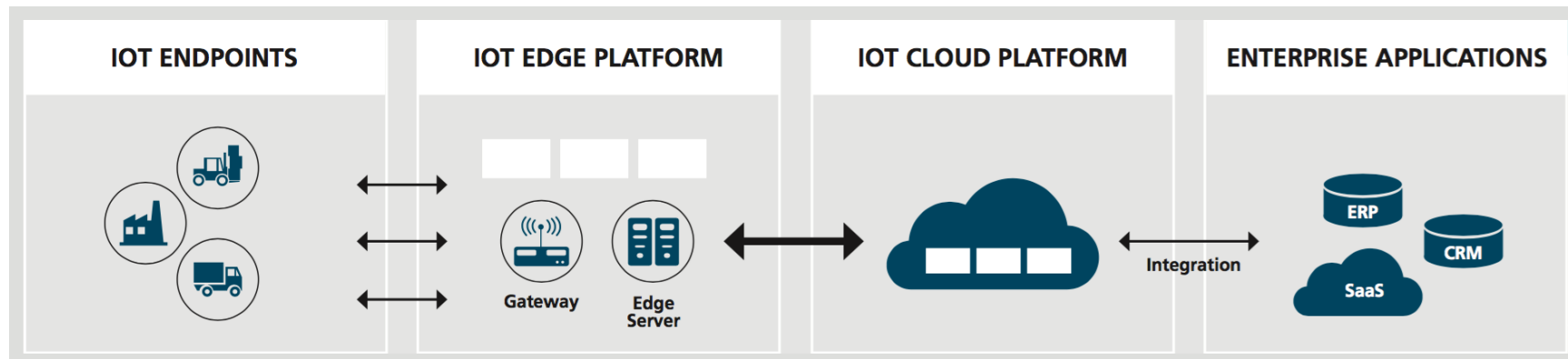
ADAMOS IIOT PLATFORM

Leading-edge & open platform
focused on mechanical engineering

An industrial IoT Platform is a combination of software and applications
to **monitor, analyze, optimize** and **control**
a heterogeneous world of connected IoT endpoints

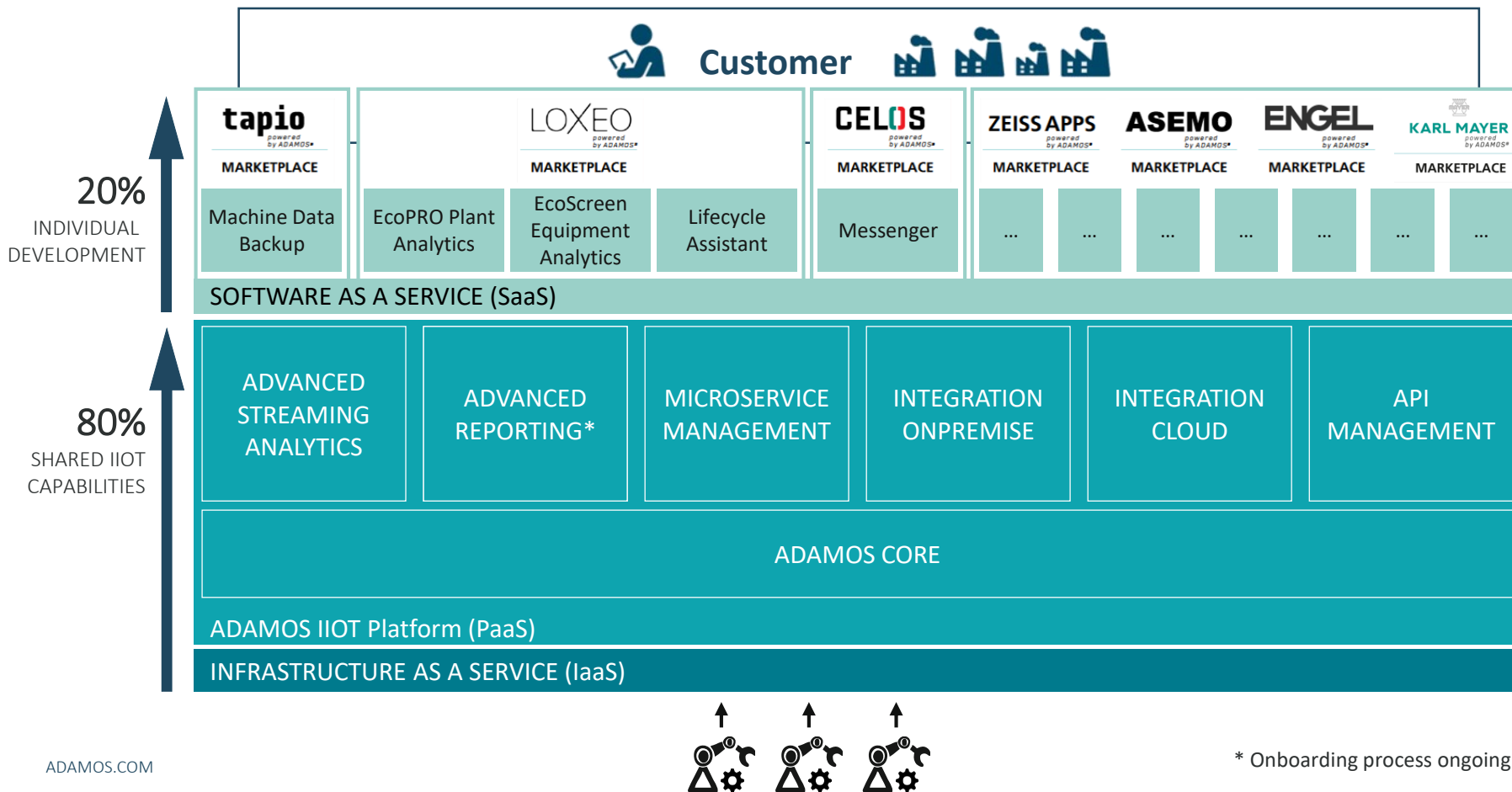
ADAMOS GOAL

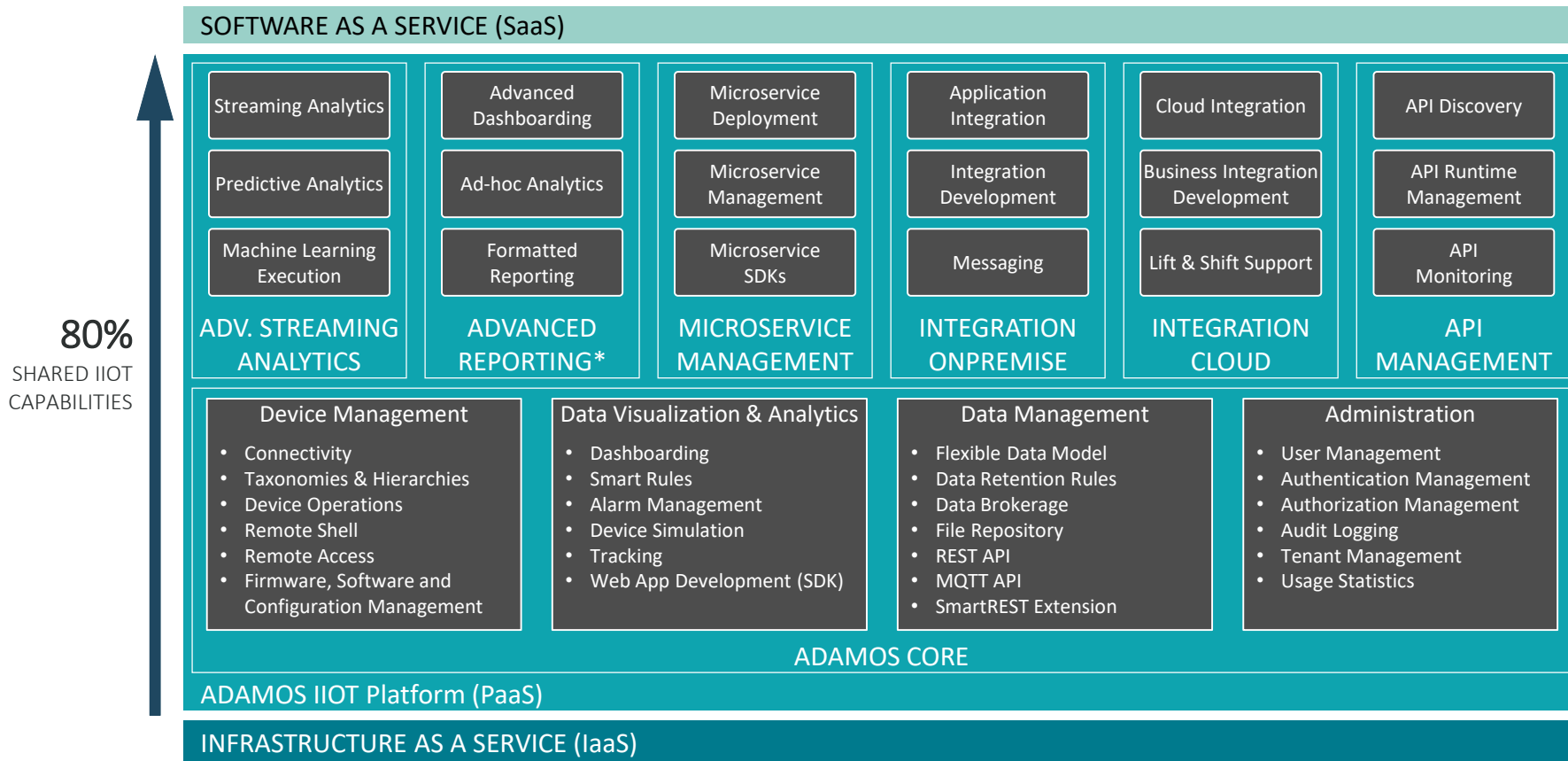
Provide the world market leading
IIoT Platform for manufacturers



ADAMOS IIOT PLATFORM — BIG PICTURE

ADAMOS

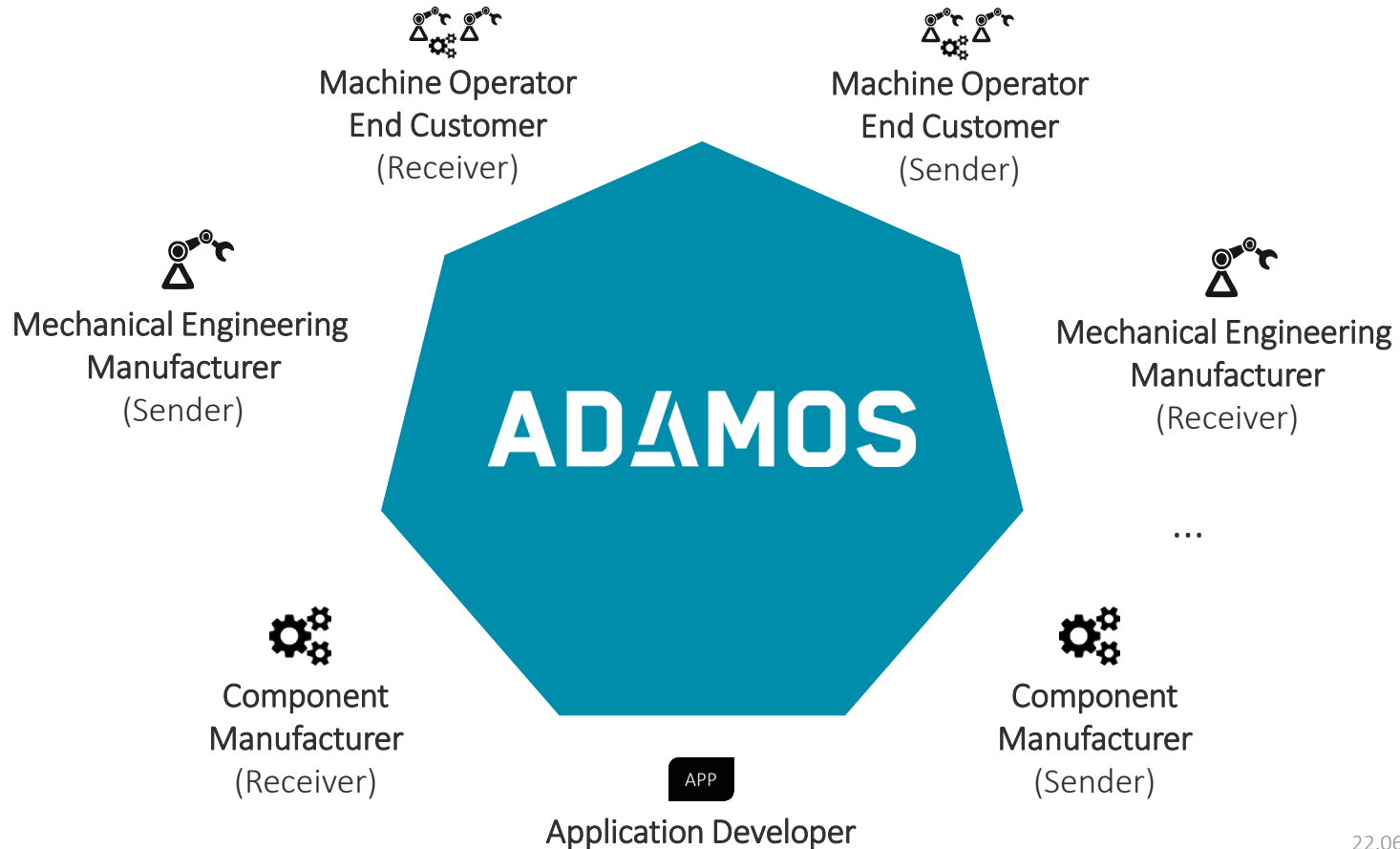




A decorative graphic on the left side of the slide. It features a dark blue background with a grid of small, light blue dots. Overlaid on this grid are several vertical lines of varying colors (red, orange, yellow, white) with small circles at the end. There are also larger, semi-transparent blue triangles pointing downwards. The word "ADAMOS" is written in a small, white, sans-serif font at the top left of the graphic.

BECOME ADAMOS PARTNER

Join ADAMOS and set a digital standard for
mechanical engineering



- + **Protect & ensure** your **customer relationship**
- + **Be independent** of dominating, single **platform providers**
- + **Be collaborative** with **collective decision management**;
provides safeguard against individual interests
- + **Focus on your needs** within **your industry and your customer requests**;
knowhow & expertise, from manufacturers for manufacturers
- + **Be faster & innovative** with the ADAMOS App Factory for **cost-efficient digital solutions development** with faster time-to-market
- + **Leading edge** vendor-neutral, leading-edge, **best-of-breed technology**
- + **Join the power** trust in ADAMOS provides **improved market access**
- + **Competitiveness** **competitive pricing** – in order to define a **digital standard**

Simplified overview of onboarding process



ADAMOS Contacts



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Business & Partner Development
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Several overlapping triangles in various shades of blue and teal are positioned in the top left corner, some with white outlines.

ADAMOS

ADAPTIVE MANUFACTURING
OPEN SOLUTIONS