



HEXAGON

**Power 산업에서
Engineering 정보의
DT와 기술 과제**

2021. 10. 28.

CH Baek

HEXAGON Review

HEXAGON의 특징

현실세계와 디지털세계를 연결하는 디지털 트윈

다양한 센싱 기술로 현실 세계의 데이터를 확보하고, 소프트웨어를 통해 디지털 세계를 움직이고 계획해 볼 수 있습니다. HEXAGON의 SMART 솔루션들은 두 세계를 융합하여, 더욱 복잡다난해지는 산업환경의 문제점들을 해결하기 위한 변화와 Digital Transformation을 지원합니다.



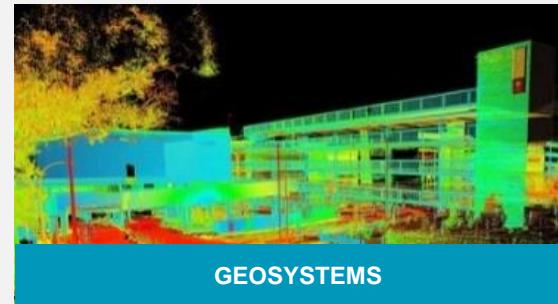
REAL World Events

DIGITAL World Models

HEXAGON의 디지털화 기여

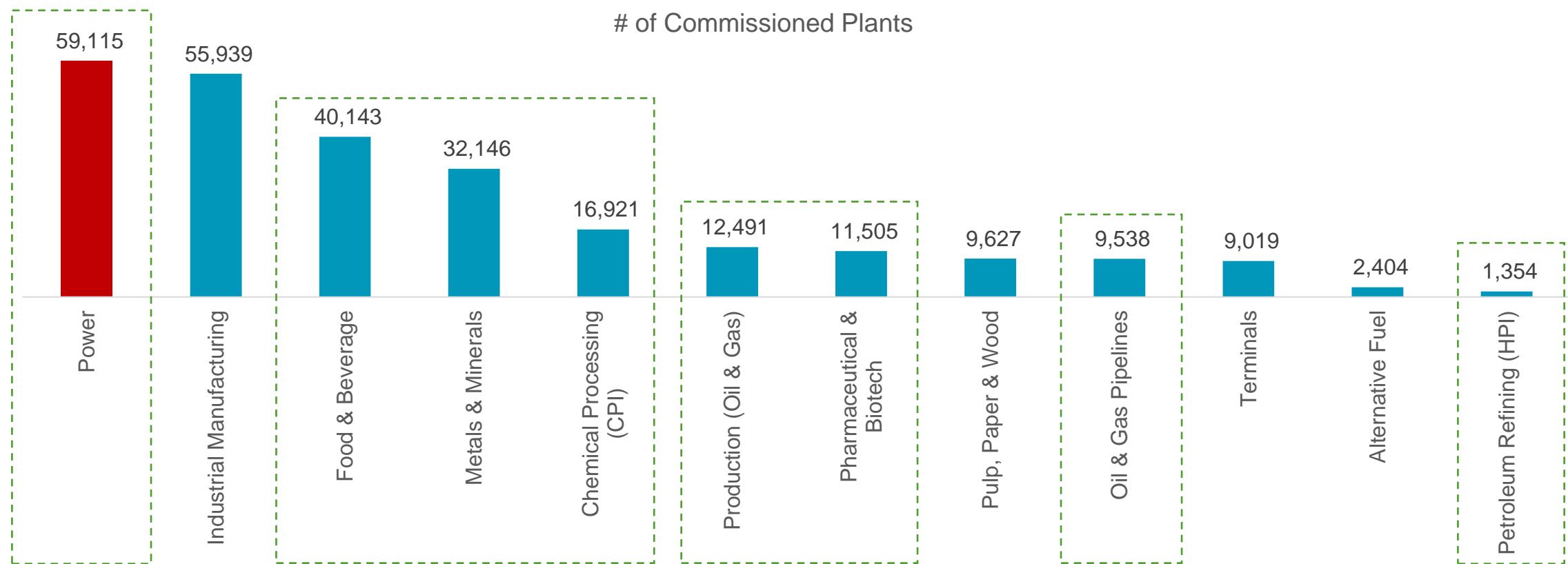
HEXAGON의 8개 사업부문

각 부문은 **business processes**, **value chains**, and **information exchange**의 선구적인 혁신에 전념을 다하고 있습니다.



HEXAGON PPM의 집중 산업 영역

of Operational Plants across Industries, 2021



기존 제품/솔루션이 있는 세그먼트
& 미래에 중점을 둔 세그먼트

HEXAGON PPM의 Solutions



Engineering & Schematics

Intergraph Smart® Process Engineering
CADWorx® P&ID Professional
Intergraph Smart Electrical
Intergraph Smart P&ID
Intergraph Smart Instrumentation
SmartSketch®
SmartPlant® Explorer
Intergraph Smart P&ID Design Validation
Intergraph Smart Engineering Integrity
Intergraph Smart PES



3D Design & Visualization

Intergraph Smart® 3D
CloudWorx for Intergraph Smart® 3D
PDS®
CloudWorx PDS®
Intergraph Smart Review
CloudWorx for Intergraph Smart® Review
Intergraph FreeView®
Intergraph Smart Laser Data Engineer
CADWorx® Plant Professional
CADWorx® Structure Professional

Intergraph Smart Laser Data Manager
FrameWork® Plus
SupportModeler™
Intergraph Smart Interop Publisher
Intergraph Smart Reference Data
Standard Database for Intergraph Smart® Reference Data
SmartPlant® Isometrics
CloudWorx for SmartPlant Isometrics
BricsCAD®
BricsCAD® BIM
BricsCAD® Shape
BricsCAD® Mechanical



Procurement, Fabrication, & Construction

Intergraph Smart® Completions
Intergraph Smart Construction
Intergraph Smart Materials
Intergraph Smart Yard
Intergraph Spoolgen®
Isogen®
Isogen Publisher
Intergraph Smart Production powered by NESTIX



Asset Lifecycle Information Management

HxGN SDx® Operations
HxGN SDx Projects
HxGN SDx Connector for Plant Maintenance
SmartPlant® Foundation
SmartPlant Fusion
SmartPlant Enterprise for Owner Operators
Intergraph Smart® Data Validator
SmartPlant Markup Plus
Simgenics 3D PACT
j5 Shift Operation Management
j5 Mobility & IndustraForm® Templates
j5 Interfaces - Data Historians, Maintenance and Distributed Control Systems
j5 Control of Work, Maintenance, and Process Safety



Analysis

CAESAR II®
GT STRUDL®
PV Elite®
TANK®
Visual Vessel Design
MSC Nastran

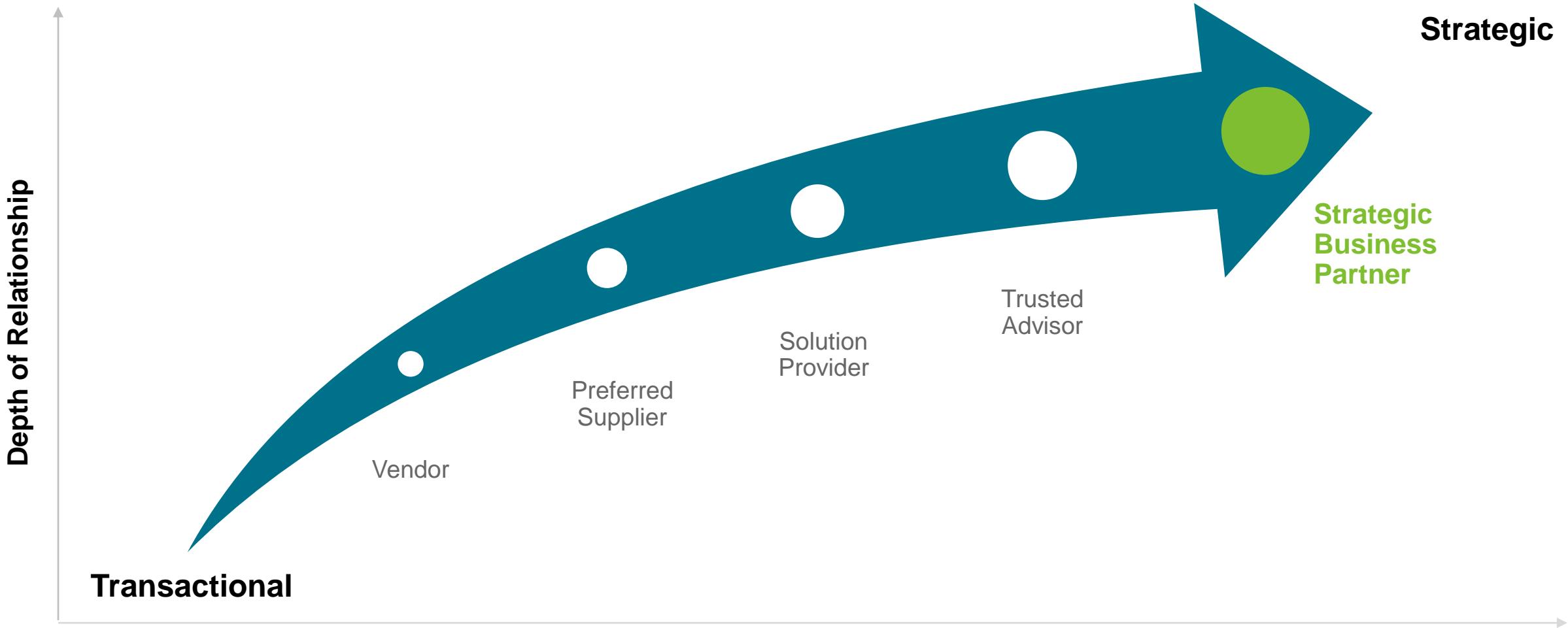


Enterprise Project Performance & Services

EcoSys™
Intergraph Smart® Cloud

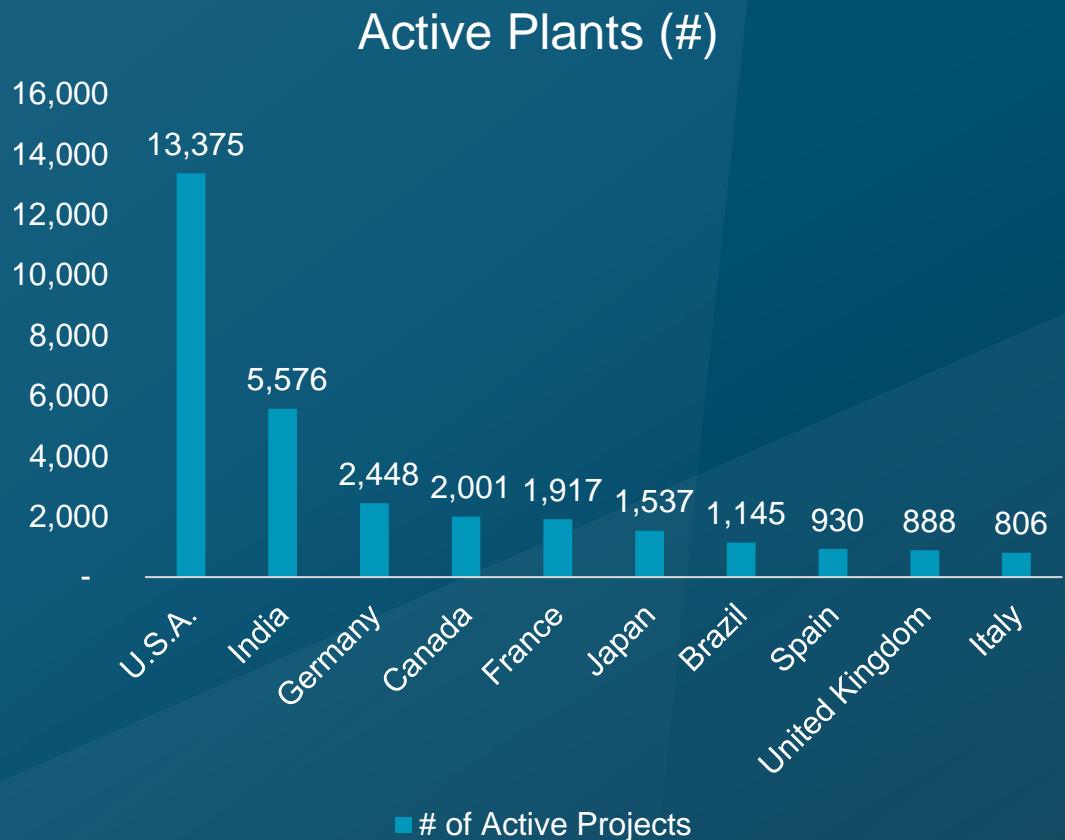
고객과 함께 참여하기

HEXAGON – Your Strategic Business Partner

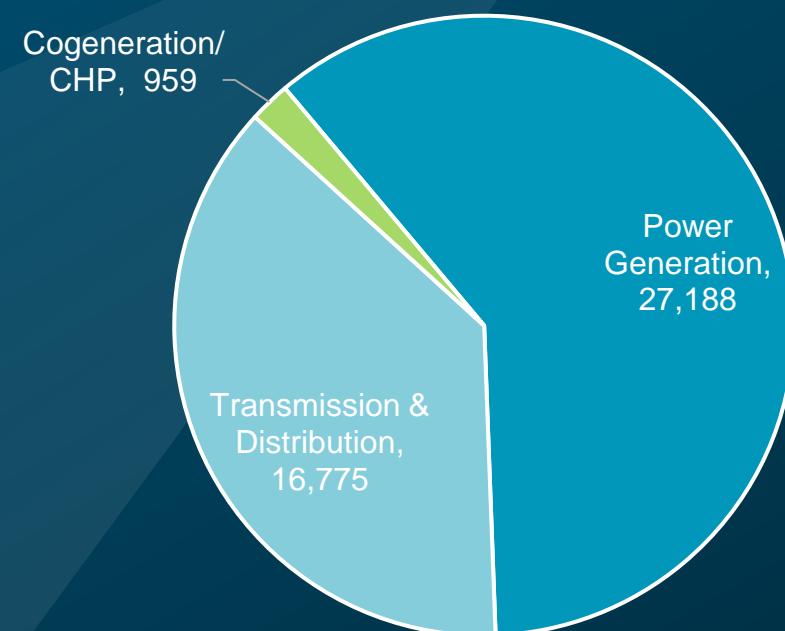


Power 산업의 동향과 DT Trend

Power: Top 10 Countries



Segment Breakup (#)

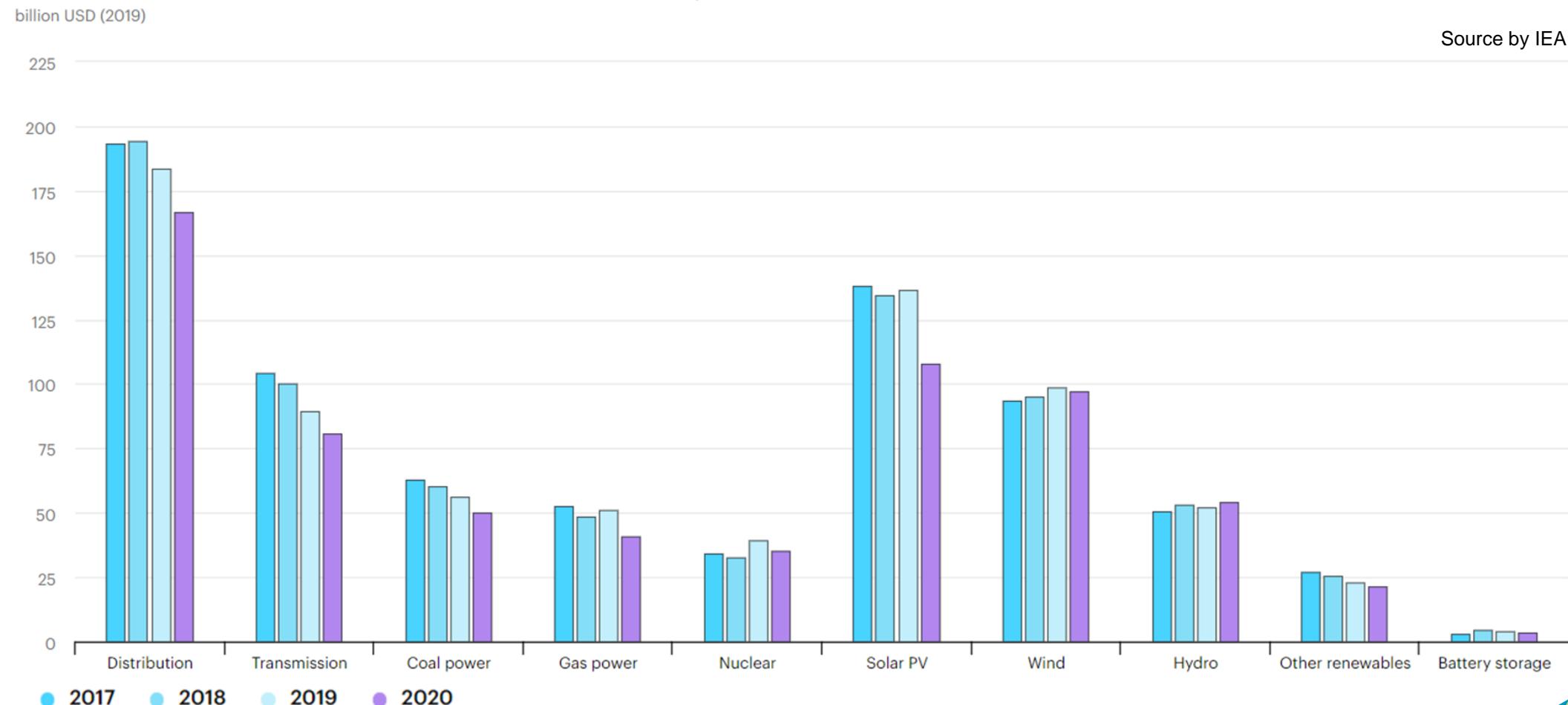


Source by IIR (Industrial Info Resources Database)

Power: Investment by Technology

Growing investment focus towards Renewable Power especially Solar and Wind

Global investment in the Power Sector by Technology, 2010-2020



Power: Digital Priorities

Holistic Digital Initiatives to drive overall productivity/profitability across the value chain

Digital Priorities of Power Companies

Implement a holistic digital initiatives (from generation to distributed energy management to drive overall productivity/profitability)



Improve the reliability KPIs in my operations via machine data and analytics (including machine learning and AI)



Create a more efficiently run business with the use of data and analytics



Develop an end-customer facing demand response solution to help manage grid fluctuations



Gain competitive ground by being more efficient and opportunistic with the use of data, analytics, and AI



Enable operations staff with data-driven insights for better informed actions across plant/fleet/grid



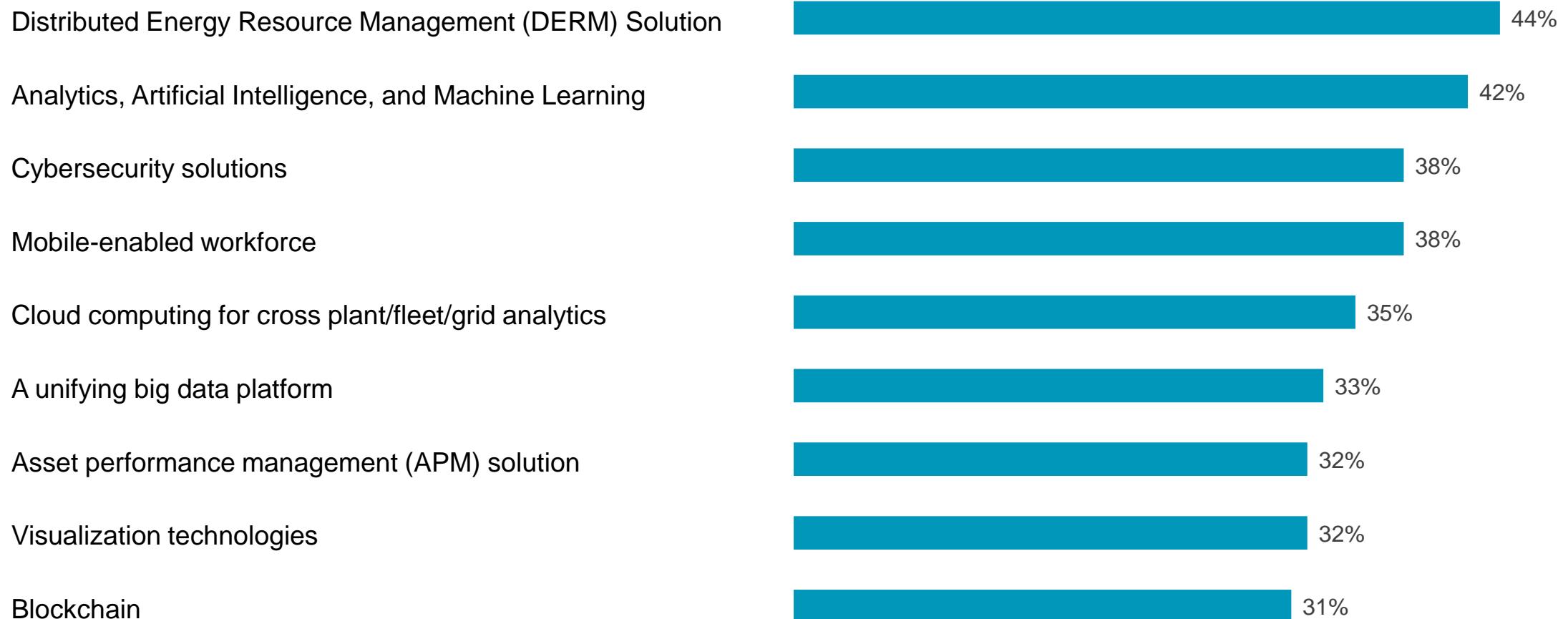
Leverage cobots and/or robotics to automate tasks, especially ones that pose risk or are repetitive



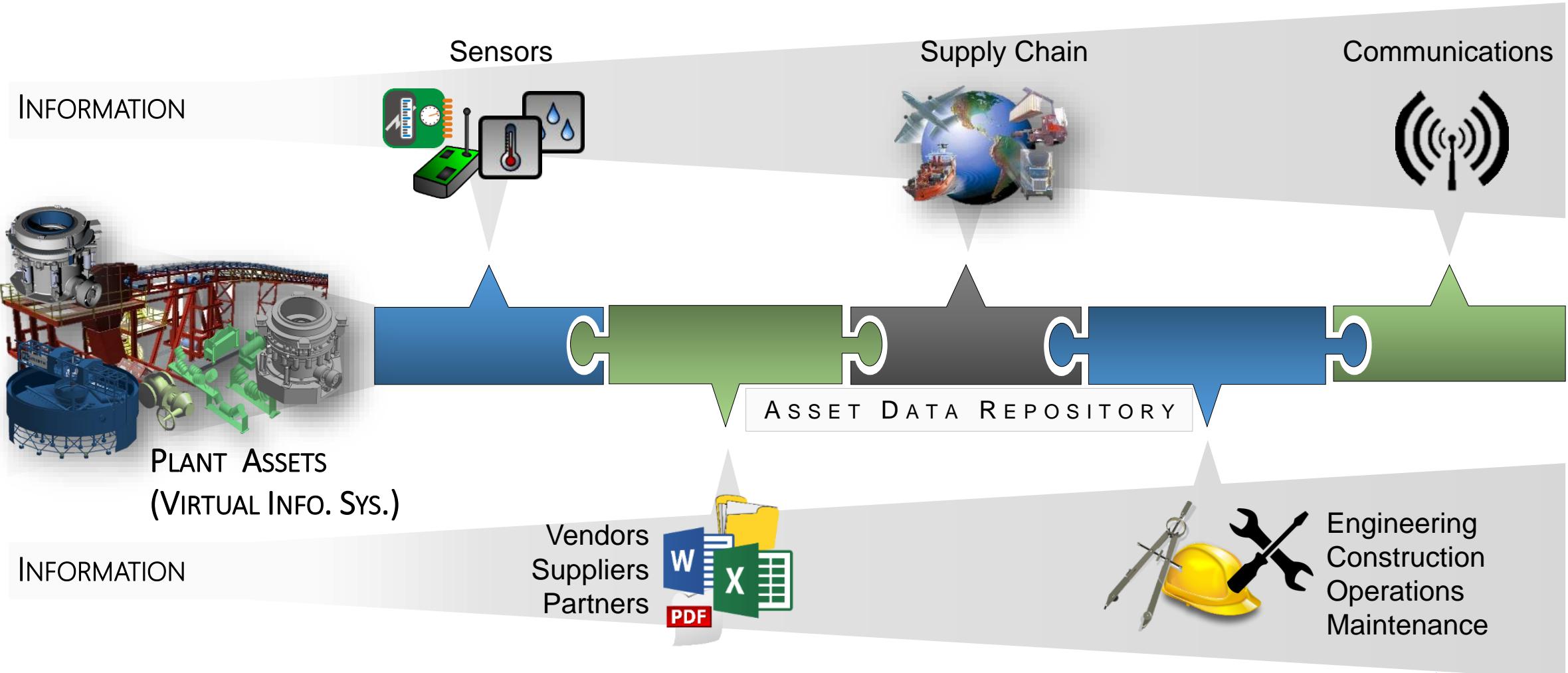
Power: Digital Priorities

Analytics, AI, Machine Learning, Cybersecurity and Mobile-enabled workforce among top priority

Digital Technologies being Explored by Power Companies



Management of Plant Assets and Information



Why Digital Transformation

- 전통적인 제품들은 점차적으로 상용화
- 제품들이 솔루션화 되면서 복잡성이 증대
- 고객 요구들이 여러 산업 분야에서 점점들을 가짐
- 고객들은 복잡성에 관계없이 단순화를 요구
- 기존 시스템들을 최대한 활용이 필요
- 기술은 비즈니스 변환의 추진 도구이며 시험대

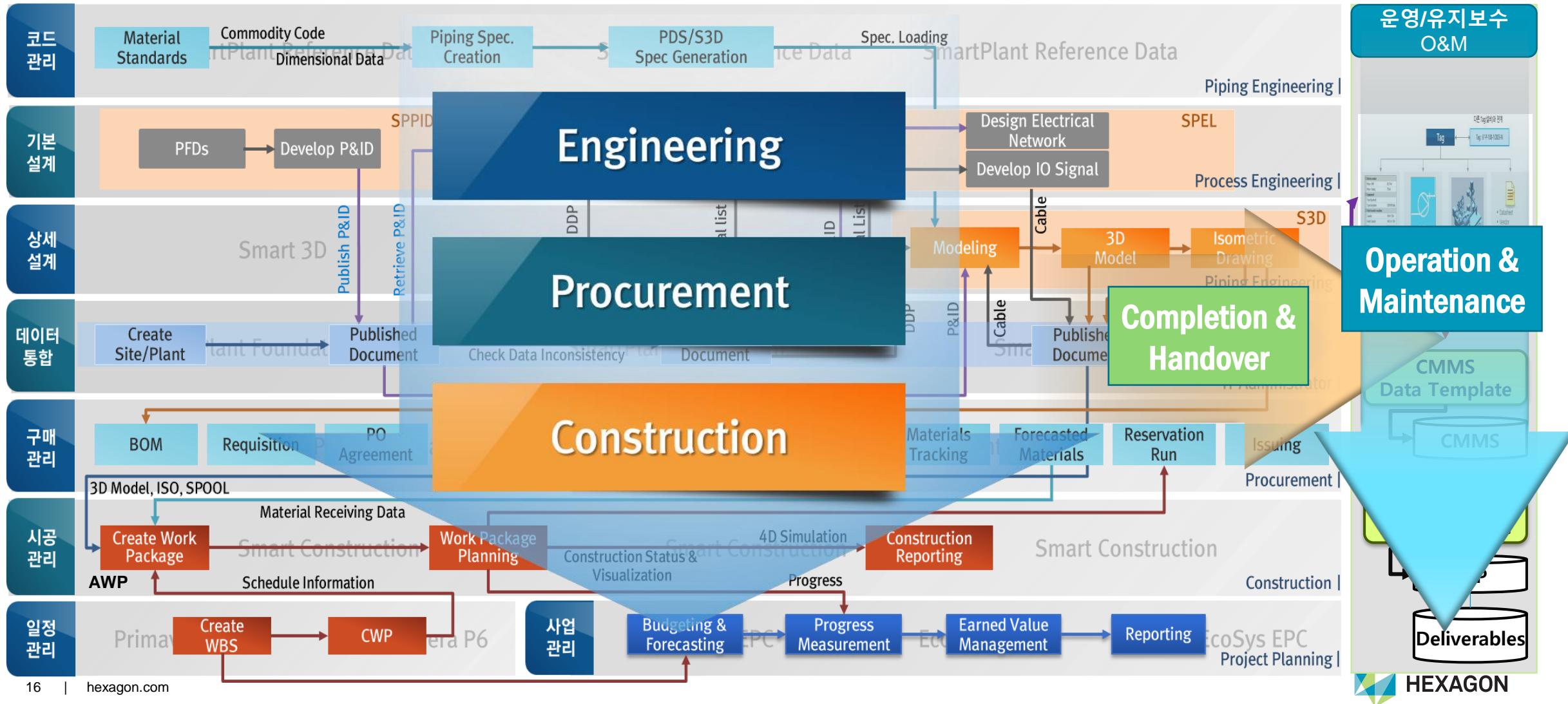


Challenges of Digital Transformation

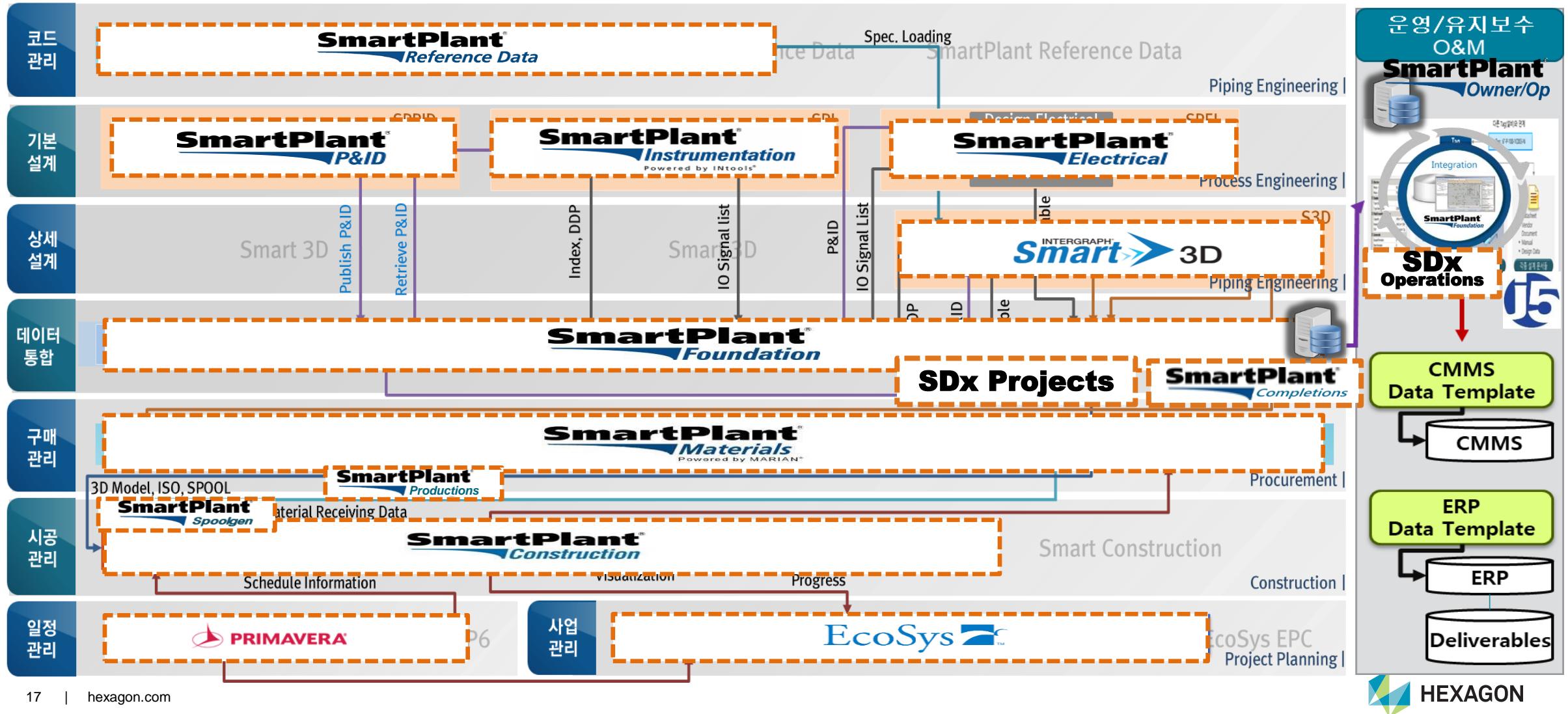
- 최상의 복합 기술을 요구
- 대부분 공급업체는 필수요소들을 제공할 능력이 미흡
- 고객들은 DT 과정의 다른 단계
- DT는 산업분야에 따라 다른 의미
- DT는 같은 산업 안에서도 사람에 따라 다른 의미



EPC-O&M General Process: 설계-구매-시공-운영 프로세스와 데이터 통합



HEXAGON Solution: 설계-구매-시공-운영 프로세스와 데이터 통합



HEXAGON Solution의 NPP 산업 적용

원자력 (Nuclear)	Tools						적용 기술 (Capabilities)					
	SPE (SmaerPlant Enterprise)	SPO/SDx (Owner/Operator /CMIS)	SPM (SP Materials)	SPC (SP Construction)	Ecosys (Enterprise Project Performance)	Laser Scanning (Digital Twin)	Pipe stress analysis Caesar II	Automation	Jump-start Packaging	Configuration Management	Requests Management & Traceability	Change Management
신규(Greenfield)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
기존(Brownfield)	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
수명연장	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
해체/폐기	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

THANK YOU!

HEXAGON is a global leader in digital solutions that improve productivity and quality for manufacturing, infrastructure, safety and mobility applications. We create Smart Digital Realities™ that empower the future of autonomy across production and urban ecosystems.

