Enabling the Journey to Operational AI

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Introduction

Across the industrial world, digital is transforming how companies plan, operate, grow and interact with their customers. The IEA defines digital transformation as the **"increasing interaction and convergence between the digital & physical worlds"** with three fundamental elements: **Data, Analytics, and Connectivity.** At its core, digital transformation is about **orchestrating the physical world more efficiently** by turning data into insights and ultimately to action at speed and scale to make the impossible possible and the possible affordable.

Intelie LIVE started out as an **operational intelligence workflow platform for real-time data ingestion, processing, analysis, and visualization.** Driven by a powerful streaming analytics and event processing engine, the platform excels at alarm management, exception-based surveillance, key performance indicator (micro-KPI) generation, and reporting. Over the last 5 years, Intelie has also successfully integrated other complex operational tasks such as **scheduling, planning, sequence building, and cost tracking**. Intelie LIVE has now transformed into a quintessential **Operational AI platform**
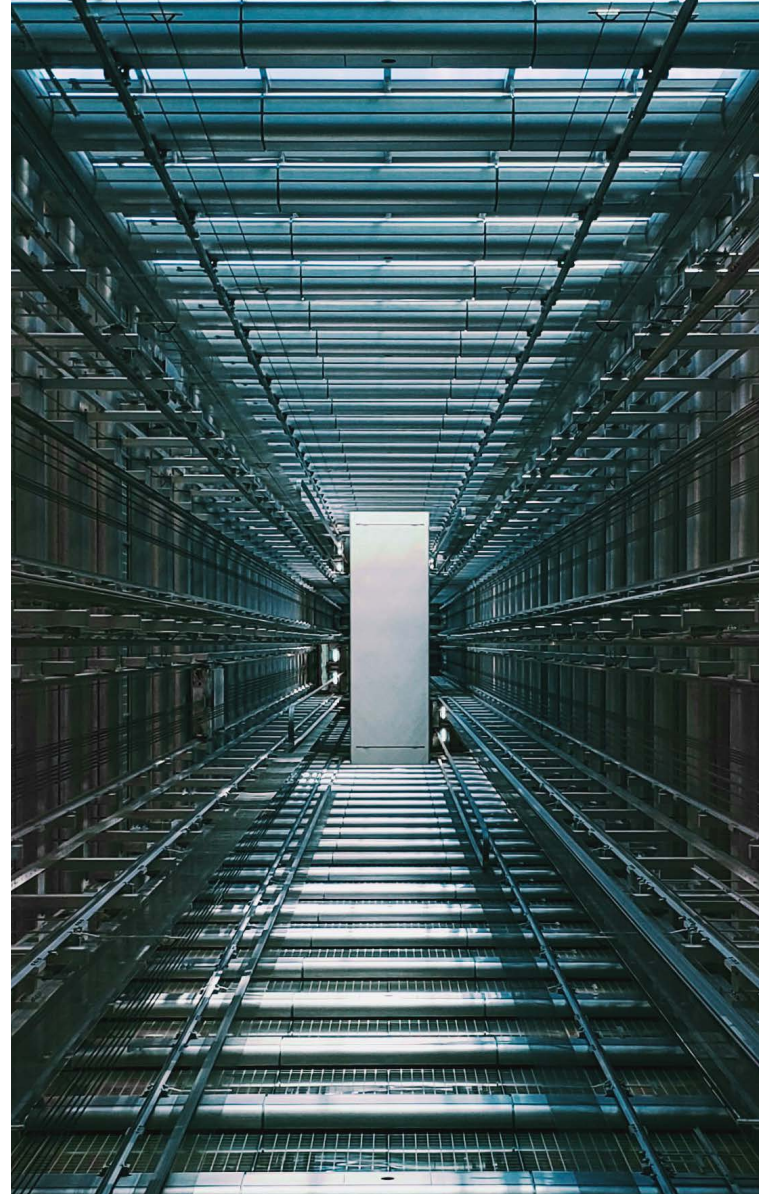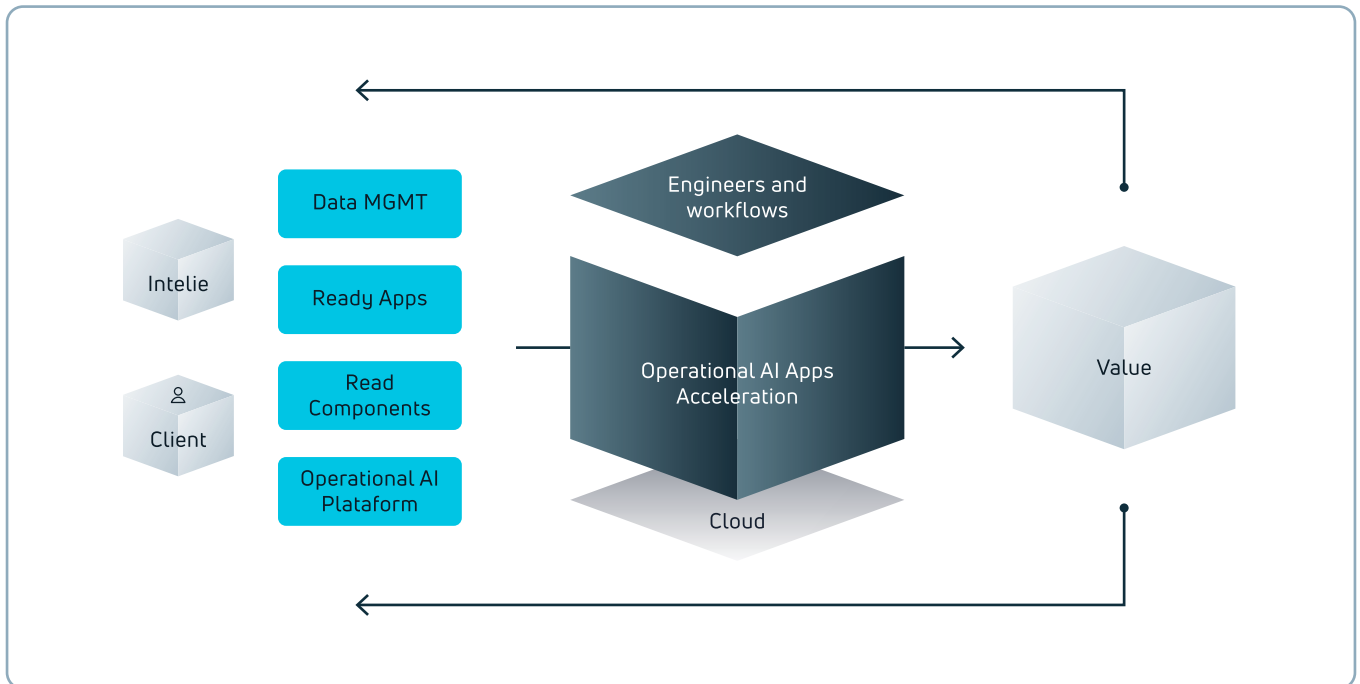
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Intelie is laser-focused on Operational AI. **It's in operational settings where the majority of business-relevant data to decision transformations occur**. Operations are where the hype is sifted from reality and where there is a real need for the speed, performance, and agility that **Intelie's integrated end-to-end platform brings.**

What is **Operational AI?**

Operational AI may be defined as a **modular end-to-end work environment that is focused on the transformation of data to results**, augmenting engineers to build solutions, make better decisions and deliver value.

For Operational AI it is **key that engineers can see practical value in the solution** and use it often as part of the operational workflow, i.e., the AI solution is operationalized.

Intelie is leveraging its **data ingestion, virtualization, visualization, and workflow orchestration foundational stack** to build an industry-leading Operational AI platform which bridges the classic *Information technology (IT) - Operational Technology (OT)* divide that has hampered the majority of digital transformations.

Intelie's Operational AI platform will enable operational excellence and top-tier HSSE performance, minimize friction and time-to-value, maximize efficiency and effectiveness, and optimize actions and business outcomes by:

**Harnessing** the massive amounts of structured and unstructured operational data-real time or otherwise;

Capturing and exposing the wealth of operational knowledge available in and outside of an industrial organization;

Empowering end-users by making relevant data and knowledge available just-in-time and on-demand.
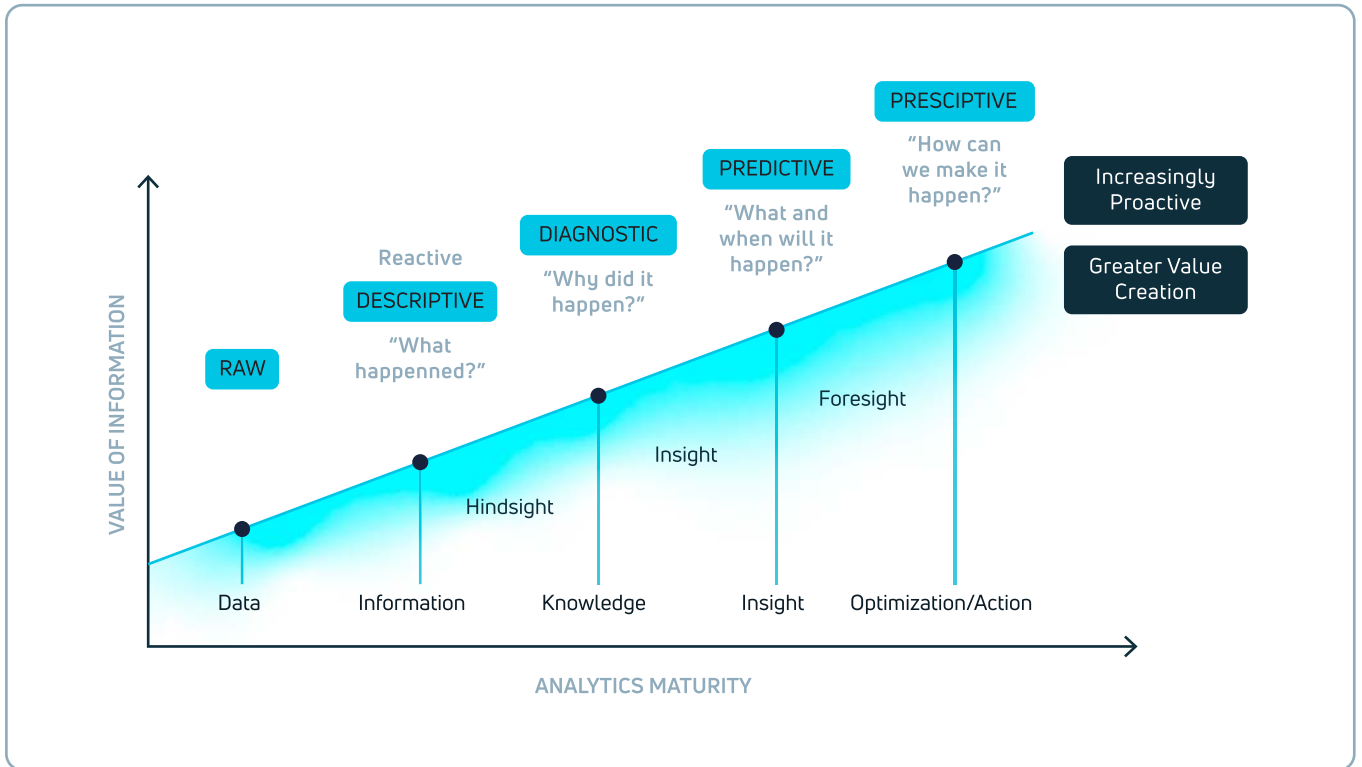
Intelie's Operational AI Platform can help industries move to the next level of operational excellence —by using data to better inform current decisions in the here and now, **predictive analytics to better anticipate the future, and automation to take advantage of every increment of cost and speed that can be found.** In the use cases in which energy companies have applied digital successfully, it can facilitate up to 10% improvements in production and yield and 10-30% improvements in cost. When such benefits scale, they will have a material i**mpact on competitiveness** and can make the difference for a business's survival, let alone its leadership.


Example screen:
Real time basic
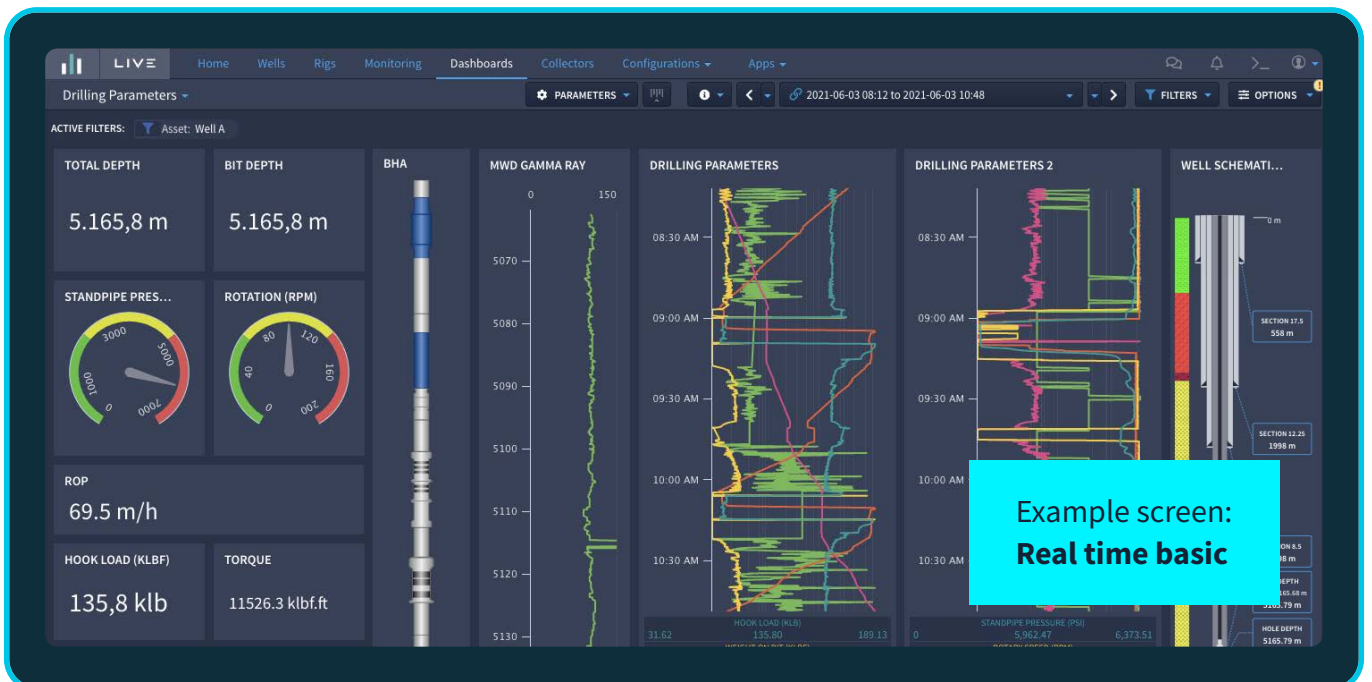
Why **Intelie?**

Intelie LIVE runs on prem or on top of existing cloud platforms (e.g., AWS, Azure) which are constantly evolving with their data gathering capabilities, analytics and visualization. What is truly unique about Intelie is the speed to value – **how quickly it enables customers to solve their problems and how rapidly they can realize value** from their operational excellence initiatives and

how effective it is in mixing pre-built out-of-the box solutions with plug & play Lego-style customization to ultimately deliver value to customers. **Communicating this value proposition is key to differentiation.**

Intelie will leverage **the intersection of people, process, and technology shown below to accomplish speed to value.**

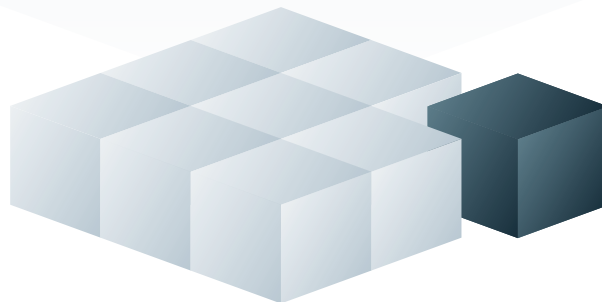This is shown diagrammatically as **follows:**

OPERATIONAL AI APPS

DATA QUALITY MANAGEMENT

AUGMENTED INTELLIGENCE
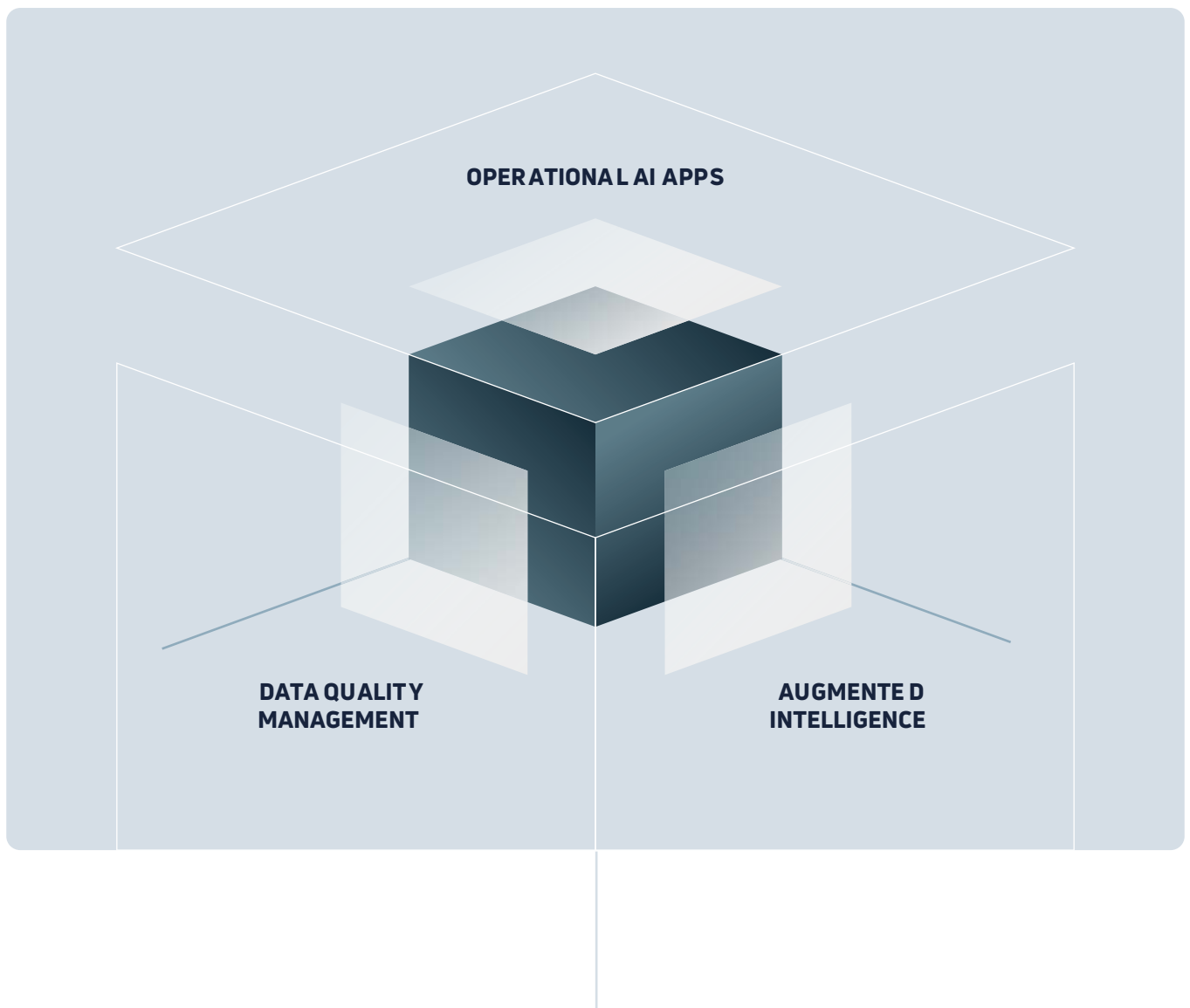
Operational AI APPs Acceleration

Key to operationalizing AI is Intelie's ability to seamlessly combine its **"plug-and play" pre-built Apps with the flexibility to build custom solutions using modular "Solution Bricks".** A comprehensive set of pre-built applications, proven and validated in field operations, delivers value immediately upon installation. **These solutions use standard channels, encapsulate all the required data analytics logic, provide the necessary visuals** (e.g., widgets, dashboard templates), and are robust and resilient to production environments (e.g., scale with performance, resilient to missing and delayed data).

A functional Operational AI platform must have a modular and flexible yet integrated design. As digitalization continues to transform work processes, it creates thousands of new use cases and applications that require endless combinations of data types. Each use case may require its own data model to support it - but these solutions must be designed to scale. Contemplating each case with its own extraction of data from separate systems and consumption of data in its own bespoke application, is untenable. **The true power of Intelie's Operational AI platform is the ability to expose an extensive set of modular Solution Bricks which empower users to customize their solutions and workflows to deliver even greater value without reinventing the wheel every single time.** Many of the basic general Solution Bricks are generic and can thus be reused and rapidly customized for a variety of problems across different industries.

▸ **Hydraulics model**	▸ **Heat map**	▸ **Rig state**
▸ **Well Parameters**	▸ **WITSML connector**	▸ **Torque & Drag**
▸ **Industry integration**	▸ **Image log**	▸ **Bow-tie**
▸ **Track view**	▸ **Lithology log**	▸ **Equipment Schematic**
	▸ **Formula Language**	

Data Quality Management

The Internet of Things (IOT), combined with advanced analytics, is enabling manufacturers and operators to predict the maintenance needs of their equipment, extending their life and creating a new runway for industrial productivity. Yet quality control of data streaming from IoT and edge devices remains a major challenge. For that purpose, **Intelie has developed a set of cutting-edge functionalities for improving and managing data quality, ensuring trust, and enabling automation** which are shown below:

Clock Sync	**Remote Control**	**Bandwidth & Backlog**

Auto-swith Data Fusion	**Quality Management**	**Normalization & Virtual Sensor**
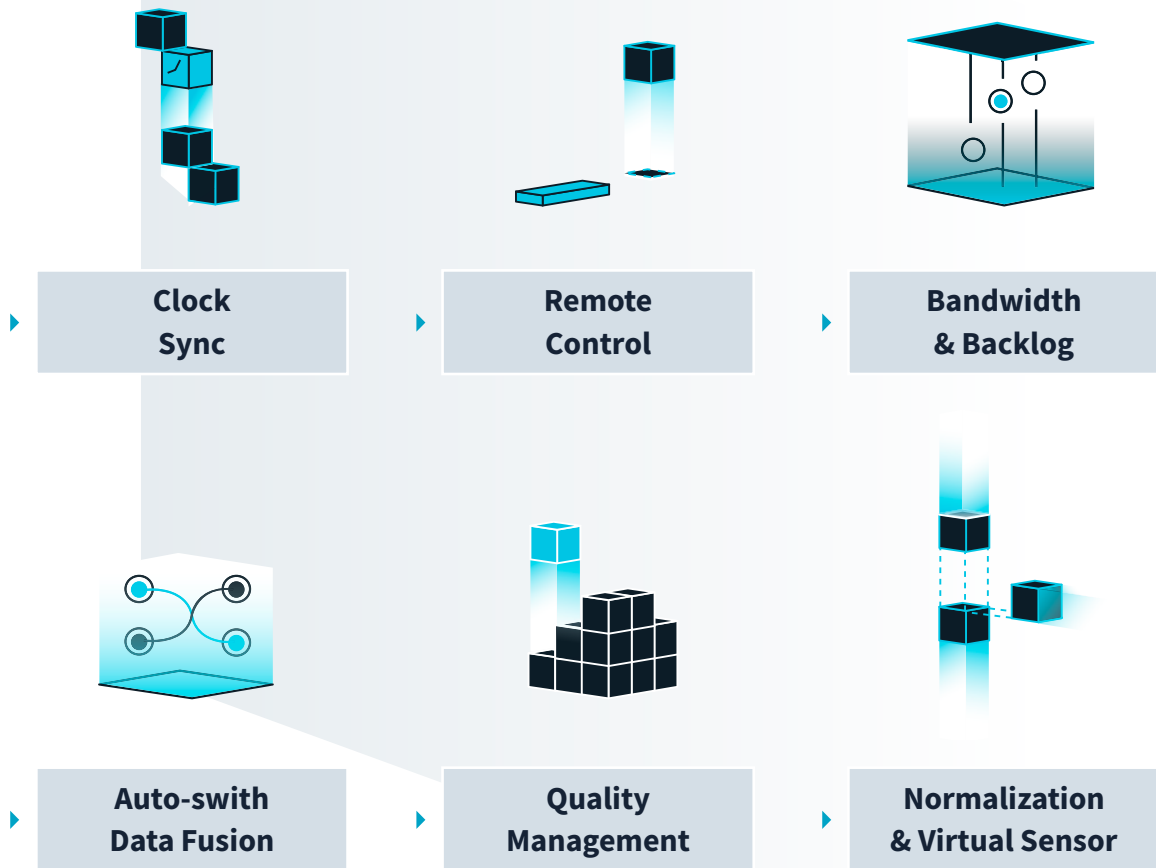
Augmented Intelligence

Many digital transformations fail because they are too focused on tools and algorithms and do not adequately address the people and culture aspects which are key to any transformation. Digital transformation can only take place when technology, process, and people are aligned to impact business models and revenue streams across an organization.

According to Gartner, augmented intelligence is a design pattern for a human-centered partnership model of people and artificial intelligence working together to enhance cognitive performance, including learning, decision making and new experiences. **Intelie's Operational AI platform also operationalizes augmented intelligence by allowing humans to make the machine better by validating alerts, correcting KPI tags or manually annotating events to enable better machine learning at scale.** It also allows machines to make humans more intelligent and efficient by providing smart alarms and robotic process automation of mundane, repetitive, or time-consuming tasks, and by surfacing the exact data or knowledge that a user needs just in time. It is also about humans collaborating more effectively with other humans through data virtualization, visualization, and workflow orchestration combined with powerful knowledge base search and retrieval functionalities.

Process

SUCCESS

People   **Technology**
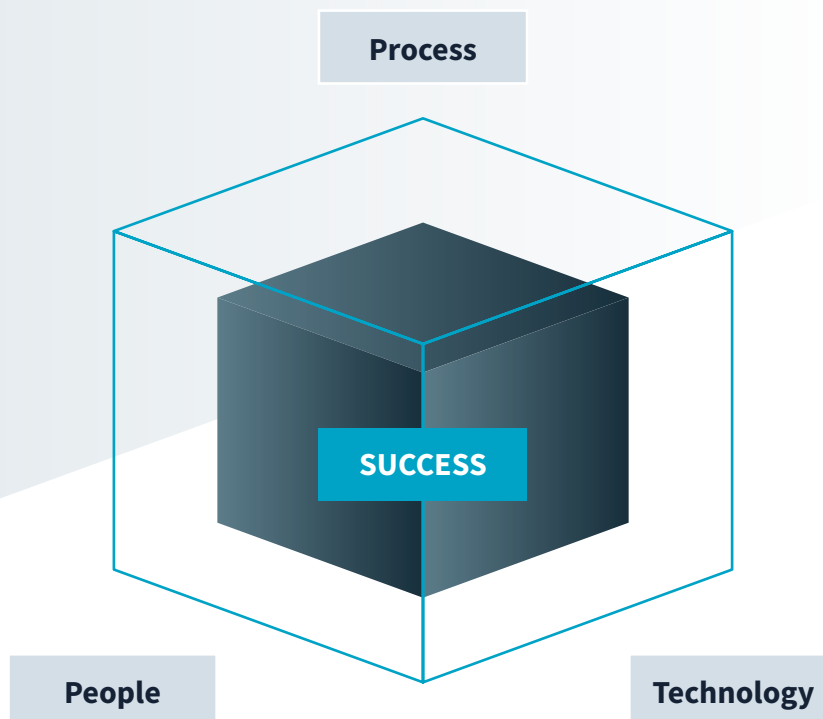
Conclusion

Digital is not new nor is technological change, but the exponential nature of change that is the hallmark of digital transformation is unprecedented. The energy industry has been relying on digital technologies for many years, from processing seismic data in the 1980s to monitoring and optimizing critical production processes in the 1990s, but the industry is now facing unprecedented changes: **more competition, more complexity, and less predictability making digital transformation an existential choice.** Profit margins are under pressure, and the margin of error for survival is shrinking.

These changes affect every player in the industry:

▸ Oil and gas producers are facing price volatility, demand destruction, energy transition, etc.

▸ Utilities face distributed generation, more complex grids, and evolving customer expectations.

▸ Refineries must adapt to global uncertainty over new sources of feedstock and new patterns of demand.

▸ Renewables developers must survive and grow amid intensifying competition and potential commoditization.

▸ Service companies must remake their delivery models to meet customers' new expectations about digital efficiencies.

▸ Engineering, procurement, and construction companies that struggle to deliver the types of capital projects that matter for the future.

▸ The big crew change has already happened.

This is why **Intelie** is now leveraging its **Operational AI platform to help transform the industry.** Value is certainly the ultimate goal for any digital transformation, but it is easy to get lost in the journey. All companies have experienced really good software projects, solutions, prototypes, researches, that never made their way into the operations, and therefore, despite all potential, generated no value. **If digitalization is not adopted at scale, and on a daily basis, by the people working in the core of the business, i.e., operations, it will fail.** For that reason, Intelie measures the success of its Operational AI platform based on **user engagement, operational adoption, and ultimately value delivery.**

If engineers, managers and field personnel that are close to operations are not using the solutions every day, that is a sign that the solution does not add value. For that reason, **Intelie's Operational AI platform is built with engaging UI/UX designs** and interfaces and designed around intuitive workflows and interactions.

Intelie's Operational AI platform is **key to digital transformation** - allowing enterprises to fully leverage their data and knowledge assets and to standardize, automatize, optimize, customize, prophesize, and ultimately monetize their operations.

In 2021, **Intelie** merged its capabilities with **Viasat, Inc.** to become **Intelie by Viasat**, combining a global Operational AI platform with a leader in innovative satellite technology.

Now powered by connectivity anywhere, the team at Intelie expertly designs intelligent solutions that accelerate operational efficiencies, from real-time data to predictive analysis, and automation to deliver optimized results.

Thank **you!**

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Contact us in **contact@intelie.com**

Discover more solutions in **www.intelie.ai**

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