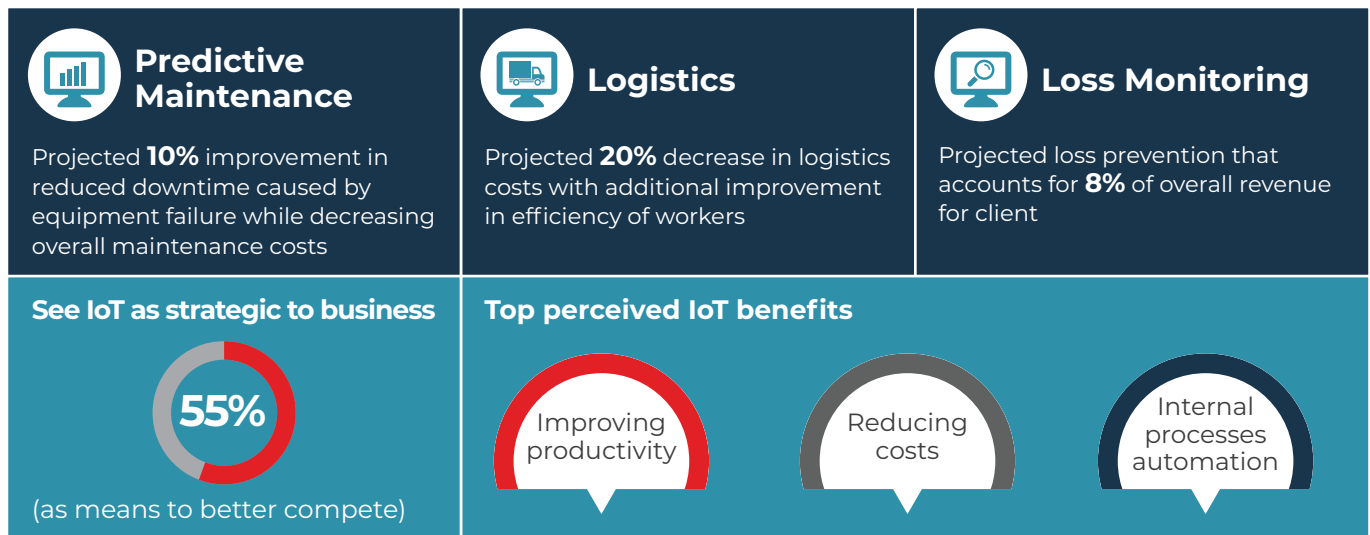


Oil and Gas- a connected Ecosystem from depot to Forecourt



Bringing together Logistic operations and Forecourt processes for efficiency.



Legacy systems in Fuel logistics fail to realize anywhere near full operational efficiencies from depot to forecourt creating frustration for operators. Advancements in the form of IoT and a multitude of sensor technologies available has resulted in a fundamental shift closing the gap between the edge and the core of organizations, adding intelligence in the process to further streamline the relevance of interpreted data.

Correctly implemented, our solutions can increase a company's efficiency, productivity, and overall market performance. IoT.nxt offers companies the ability to create interconnected and interoperable business operations and improve overall performance.

When combined with a well-designed and executed solution, these technologies can address the following industry challenges:

- **Lack of visibility across the downstream supply chain-** Poor visibility into balance of mass flow of product from depot to bulk storage and forecourt are detrimental to efficient managing of these processes.
- **Legacy systems are dated and proprietary-** Modern methods seem out of reach because legacy systems are entrenched and often proprietary.
- **System downtime is crippling-** Downtime caused by equipment failure is causing excessively high overtime and maintenance costs.

IoT.nxt, Dell and Microsoft technologies have combined to create an IoT solution that transforms the ecosystem, creating a horizontal interconnectedness with Dell Raptor intelligent edge gateway and Commander platform visualization, Dell gateway hardware and the ability to integrate into all existing sensors, PLC's and enhance these with new technologies available.

The solution enables business to fully leverage off all critical data points with the purpose of improving the ecosystem in which it operates, improvement in knowing where all assets and people are deployed and what functions they are carrying out. Data also brings about learnings of processes and efficiencies.

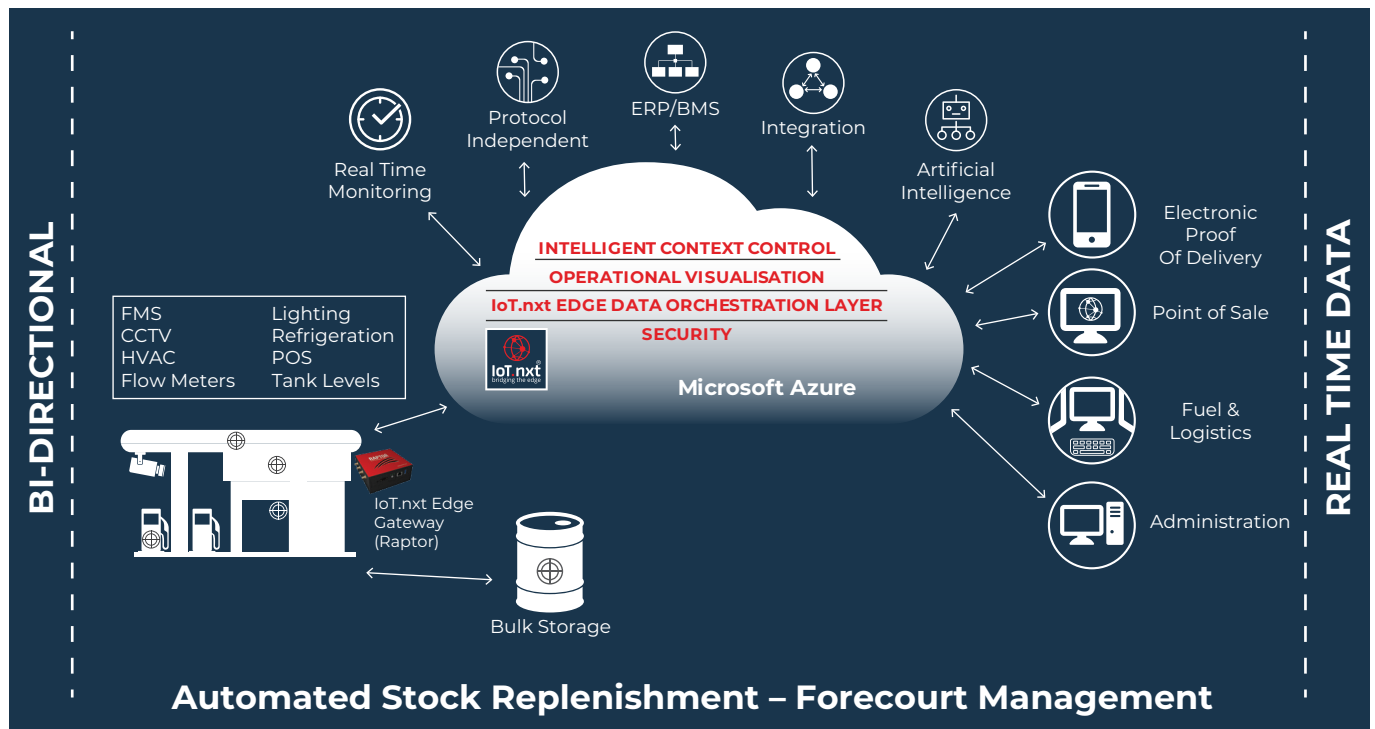
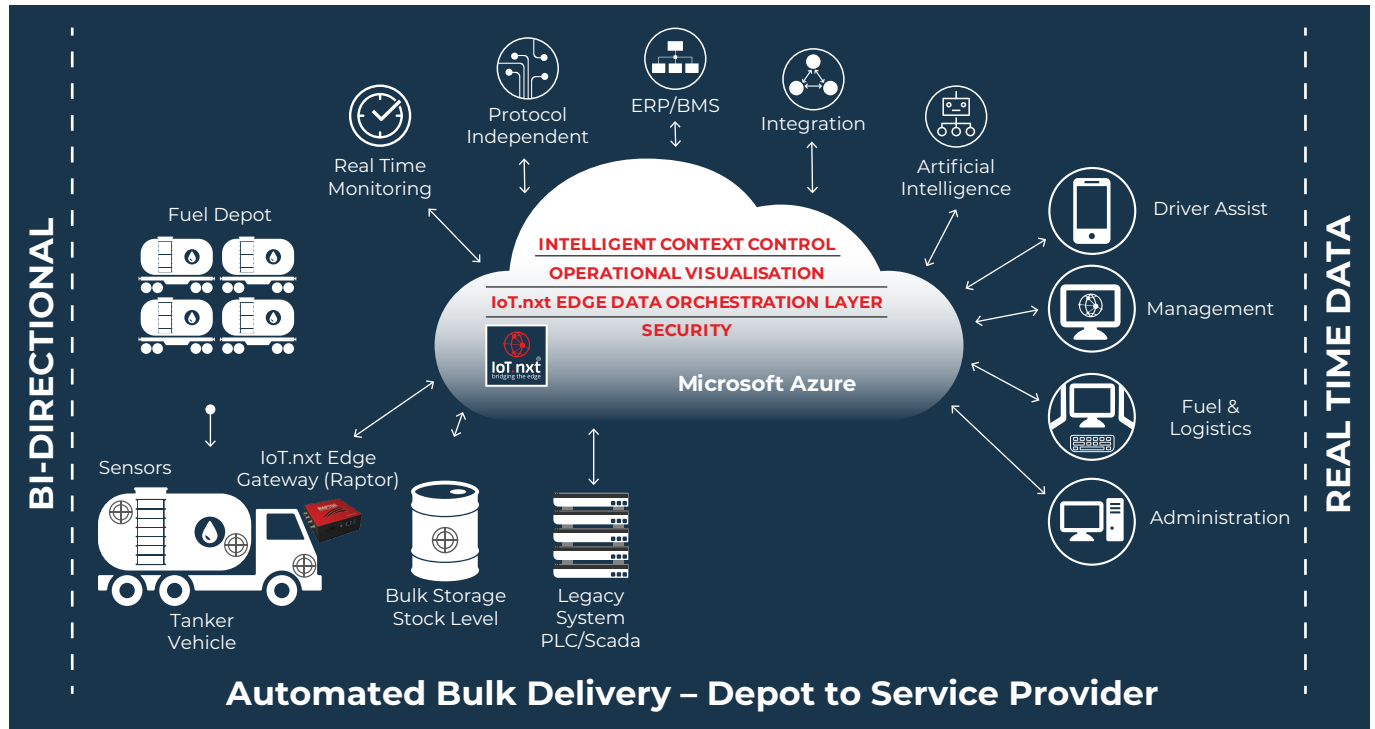
The IoT.nxt solution enhances existing ecosystems and enables companies to experience powerful resurgence with compelling benefits:

- It is preferable to enhance this ecosystem with two-way communications and control that can significantly change the performance of these assets where required using exponential technologies.
- Modern technologies integrated into the IoT platform allows enhancement and new capabilities to legacy and dated systems.
- Knowing the status of all things (equipment, suppliers, people, things) in the eco-system in real time, and building non-discretionary logic into this eco-system fundamentally reduces waste at the source. The impact of this across the expansive value chain can be profound.

Solution Diagram

Offering a solution that has the flexibility to work with existing devices and services, means the customer will derive immediate value. The following diagram illustrates how, correctly implemented, components of this solution can be used to unify an entire business ecosystem to achieve optimal results organization-wide. Our core digitization technologies lay the foundation required for true transformation, obviating risks and potential data overload on networks.

Open IoT and Digital Experience Platform Components



5 Steps: The path to success

1 | Reimagining business processes

Applying business analytical best practice, consider current SOPs, process and workflows that are performed across your business ecosystem to identify areas where standards and processes have not been optimized.

- Provide relevant insights and operational functionality to users.
- Leverage automation and integration to create a complete company overview and reliable, precise data collection.
- Enable primary business functions while accommodating anomalies that can cause down time.

2 | Avoiding an information overload

As businesses digitalize, caution should be paid to not overloading operators with information. Having insight into down-the-line effects of activity may boost efficiency and the business bottom line. To ensure effectiveness, work to provide the right information to the right people to drive better decision making and improve employee accountability.

	IoT	Operational	Transactional
Example	Engine telematics, location, speed, trailer temperature, nozzle status, thermal imagery, temperature/vibration status, Nozzle and boom gate relays, driver status	Routes, stop locations, appointment windows, vehicle ID, Geomap routes	Work order processed, GRS processed. Trip start/end, stop start/end, miles driven, product loaded/unloaded. Position of load/unload.
Sources	Vehicle CANbus, GPS, Temperature/Vibration sensors, Biometrics, gate/boom/nozzle relays	IoT.nxt Commander visualization, ERP integration, Analytics	Fully automated
Destinations	Fleet management, asset management, ERP, Commander visualization and control, analytics	Driver Biometrics, Asset maintenance	ERP

3 | Ready, set, configure

Ruggedized to suit an industrial environment, designed to endure even the harshest condition and proven effective in the fields, the IoT.nxt technology stack is the answer to ensuring competitiveness, and relevance, in the years to come. Quick to install and easily customizable in any industry, an entire business ecosystem is connected into a centralized Commander dashboard and accessible remotely enabling real-time visibility and in-shift optimization without disruption.

4 | Connected your way, from edge to cloud

This flexible end-to-end solution connects non-IP based devices (2-wire and similar) through Raptor, our intelligent edge gateway, and connecting IP enabled devices directly to our IoT platform, Commander. Once connected, data is consolidated from all devices and systems to provide a single horizontal view of your systems and devices entire business ecosystem.

Raptor technology creates a normalized, edge layer of physical and virtual intelligence that can be retrofitted, deployed and connected seamlessly into an ecosystem of existing technologies and things, radically reducing the cost of having to develop multiple edge integrations into disparate cloud applications.

Being able to retrofit onto all deployed devices, whether analog-, or IP-based reduces

- disruption to business processes
- cost of implementation
- cost of training
- cost and impact of enterprise-wide change management
- vulnerability at the edge
- technology disparity at the edge
- data strain on - and therefore costs of - networks
- processing required at the cloud platform level
- cost of edge integrated gateway maintenance

Real-time subsystem integration allows cloud platforms to be leveraged as the up-, and down- stream effects of an event-triggered occurrence are recalibrated throughout all edge-connected devices. The pieces of any business puzzle are in the box, and ready to be pieced together to create a big picture.

5 | Operationalize and reap the benefits

Surpassing industry benchmarks globally, this technology-agnostic solution can be implemented in any industry, on any system and in any process leading to the collection, normalization and aggregation of unbiased, actionable data and real-time business intelligence. The knock-on effect of complete visibility into all operations, the knock-down of operational silos and minimization of down-time and incidents across the business ecosystem can be felt almost immediately.

An entire ecosystem, in your hands

Implemented anywhere, this solution becomes an enabler for optimal results across the rest of your business. Operational requirements, tied in with big data and market shifts unlocks the opportunities for organizations to move into the future - and beyond - with agility, dynamically shifting with supply and demand, resource availability and, ultimately, growth. Watch it all from the palm of your hand.

Demystifying IoT

IoT.nxt is a unique rapid digitization technology enabler that future-proofs enterprises, helping them leverage existing infrastructure investment and integrate into new technologies. The resulting interoperability and interconnectivity break down data silos and cuts out vendor lock-in.

Our IoT solution allows our clients to rapidly transform their businesses and move into the digital age quickly, and without disruption to operations.

Together with our solution partners, we work with businesses to design digitalization strategies that are deployed in line with business goals, harnessing the magic that makes each organisation unique.

It's your business. Only better.

To learn more, visit www.iotnxt.com

Contact IoT.nxt Sales to learn more about our ecosystem and to deploy this solution today.