

Optimizing Manufacturing Data Exchange

Data-Driven Digital Transformation

Pervasive Datacenter Architecture (PDx[™])

SOLUTION BRIEF



Optimizing Manufacturing Data Exchange

Over our 15+ year history, we have assembled the largest global platform of multi-tenant datacenter capacity¹, while operating the second largest carrier neutral interconnection platform in the world.²

We are privileged to serve more than 4,000 customers across 23 industries, representing some of the largest and most innovative companies globally.³

These customers continue to solve the most complex infrastructure, connectivity and workflow use cases across technologies like network peering, hyperscale, low-latency, HPC/Big Data and artificial intelligence. We witnessed a growing trend among the multi-national customers, each deploying and connecting large private data infrastructure footprints across multiple global sites. This drove us to understand more.

We conducted research, built a global database and cracked the code on how to measure, quantify and

forecast the growing intensity of the enterprise data creation lifecycle and its gravitational impact on IT infrastructure. We published our findings as the Data Gravity Index™, an annual report to facilitate industry dialogue and assist both our Enterprise and Service Provider customers as they shift their infrastructure strategies to address challenges presented by Data Gravity.⁴

Today, we are taking the next step, by publishing our "Pervasive Datacenter Architecture (PDx™) Solution Brief – Optimizing Manufacturing Data Exchange" – a solution strategy for manufacturing companies to address both industry specific business challenges and overcome Data Gravity barriers.

The solution brief provides manufacturing business and technology leaders a codified strategy and solution approach to implement data driven digital transformation, obtain competitive advantage and unlock new growth opportunities.

#optimizingmanufacturingservicesdataexchange #datagravity #platformdigital #aibasedbanking #aibasedinsurance #aibasedinsurance #aibasedrading #centersofdata

^{1. 451} Research, Market Forecast, Leased Datacenter Global Providers, 2020. Capacity measured in terms of operational square footage.

^{2.} Synergy Research Group; Second largest carrier neutral interconnection global

^{3.} Digital Realty Trust, Inc. Form 10-K 2022, filed in 2022

 $^{4.\} Digital\ Realty\ Market\ Intelligence\ \&\ Analytics,\ The\ Data\ Gravity\ Index\ DGxTM,\ Vol.\ 1.5,\ Dec.\ 2020$

Strategy Model – Optimizing Manufacturing Data Exchange

Industry challenges

Data-driven business strategies

Data infrastructure barriers

How optimizing data exchange strategy helps

Growth & Competition



- Margin pressures continue
- Short term shutdowns due to part shortages and pandemic illnesses
- Competing with Direct-to-Consumer (D2C) and subscription services
- Shifting to Direct-to-Customer and experiences
- Building interconnected Manufacturing **Execution Systems (MES)**
- Customer-centric Al-based personalization
- Dynamic omni-channel data creation/usage
- Proper data ingress/egress controls
- Being Al/machine learning ready
- Global Manufacturing Data Gravity



- Differentiates buying experience
- Secures MES data
- Localizes Al-augmented supply chain
- Enforces local data compliance

Complexity & Cyber Risk



- Workforce shortages, talent scarcity
- Supply chain instability
- Legacy system vulnerabilities
- Digitalizing manufacturing work
- Implementation of automation
- Reducing production downtime using Al for visibility and planning
- Data synchronization between Operational Technology (OT) platforms
- Proper data ingress/egress controls
- Being Al/machine learning ready
- Global Manufacturing Data Gravity



- manual work
- Secures third-party data integration
- chain efficiency, visibility and planning

Regulations & Compliance



- Regulatory deluge continues
- Shift to data-centric regulations
- Compliance lengthens production time and cost
- Implement data security and hvbrid-IT controls
- · Managing sourcing information provides chain-of-custody for traceability
- Al-based monitoring & reporting
- Dynamic omni-channel data creation/usage
- Proper data ingress/egress controls
- Being Al/machine learning ready
- Global Manufacturing Data Gravity



- Ensures traceability throughout the production for safety
- Secures third-party data integration
- Provides scalability without compromising security
- Enforces local data compliance

Smart **Factories**

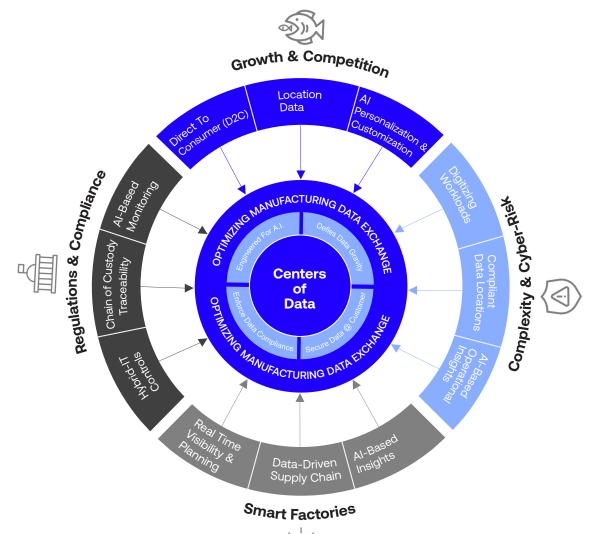


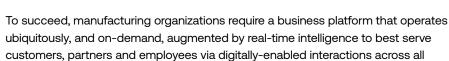
- Analyzing massive volumes of data
- Integrating and interoperability of new technologies and applications
- Technical workforce skills gap
- Smart manufacturing improves quality and reduces costly errors
- Enabling data-driven physical/digital resource planning
- Al-based personalization and customization
- Dynamic omni-channel data creation/usage
- Proper data ingress/egress controls
- Being Al/machine learning ready
- Global Manufacturing Data Gravity



- Enables real-time insights improving quality
- Optimizes physical/digital resource planning and logistics
- Localizes Al-based decisions in real-time
- Enforces local data compliance

Solution Model - Optimizing Manufacturing Data Exchange





channels, business functions and points of business presence.

Manufacturing Data Exchange

PDx™ Solution Model For Optimizing

To enable this business platform requires a data-centric infrastructure architecture designed to:

The digital economy is remaking manufacturing organizations, transforming how they

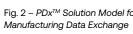
· Defy Data Gravity;

create and deliver value.

- Secure data near the customer;
- Enforce data compliance:
- Be compatible with Al architecture

When implemented on PlatformDIGITAL®, manufacturing companies can realize their target state architecture, optimize data exchange and achieve unique value including:

- REDUCING RISK with secure data exchange
- LOWERING COSTS reduction of bandwidth and duplicated infrastructure
- GROWING REVENUE through unbounded data analytic performance



Appendix

Global Data Gravity Intensity Forecast: Manufacturing

Global Data Gravity intensity

Manufacturing

144%

CAGR through 2024

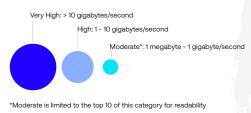
Learn More datagravityindex.com







2024 Forecasted Data Gravity Intensity



About Digital Realty

Digital Realty brings companies and data together by delivering the full spectrum of data center, colocation and interconnection solutions. PlatformDIGITAL®, the company's global data center platform, provides customers with a secure data meeting place and a proven Pervasive Datacenter Architecture (PDx™) solution methodology for powering innovation and efficiently managing Data Gravity challenges. Digital Realty gives its customers access to the connected data communities that matter to them with a global data center footprint of 310+ facilities in 50+ metros across 25+ countries on six continents.

To learn more about Digital Realty, please visit **digitalrealty.com** or follow us on **LinkedIn** and **Twitter**.



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