Optimizing Manufacturing Data Exchange

Data-Driven Digital Transformation

Pervasive Datacenter Architecture (PDx™)

SOLUTION BRIEF
Over our 15+ year history, we have assembled the largest global platform of multi-tenant datacenter capacity, 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.

2. Synergy Research Group; Second largest carrier neutral interconnection global
3. Digital Realty Trust, Inc. Form 10-K 2022, filed in 2022
### Strategy Model – Optimizing Manufacturing Data Exchange

#### Industry challenges
- Margin pressures continue
- Short term shutdowns due to part shortages and pandemic illnesses
- Competing with Direct-to-Consumer (D2C) and subscription services

#### Data-driven business strategies
- Shifting to Direct-to-Customer and experiences
- Building interconnected Manufacturing Execution Systems (MES)
- Customer-centric AI-based personalization

#### Data infrastructure barriers
- Dynamic omni-channel data creation/usage
- Proper data ingress/egress controls
- Being AI/machine learning ready
- Global Manufacturing Data Gravity

#### How optimizing data exchange strategy helps
- Differentiates buying experience
- Secures MES data
- Localizes AI-augmented supply chain
- Ensures local data compliance
- Automation reduces reliance on manual work
- Secures third-party data integration
- Enables operational insights for supply chain efficiency, visibility and planning
- Ensures local data compliance

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

#### Complexity & Cyber Risk
- Regulatory deluge continues
- Shift to data-centric regulations
- Compliance lengths production time and cost
- Implement data security and hybrid-IT controls
- Managing sourcing information provides chain-of-custody for traceability
- AI-based monitoring & reporting
- Dynamic omni-channel data creation/usage
- Proper data ingress/egress controls
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#### Regulations & Compliance
- Ensures traceability throughout the production for safety
- Secures third-party data integration
- Provides scalability without compromising security
- Enforces local data compliance
- Enables real-time insights improving quality
- Optimizes physical/digital resource planning and logistical
- Localizes AI-based decisions in real-time
- Enforces local data compliance

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The digital economy is remaking manufacturing organizations, transforming how they create and deliver value.

To succeed, manufacturing organizations require a business platform that operates ubiquitously, and on-demand, augmented by real-time intelligence to best serve customers, partners and employees via digitally-enabled interactions across all channels, business functions and points of business presence.

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

• Defy Data Gravity;
• Secure data near the customer;
• Enforce data compliance;
• Be compatible with AI 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

144% CAGR through 2024

Learn More
datagravityindex.com

2024 Forecasted Data Gravity Intensity

Very High: > 10 gigabytes/second
High: 1 - 10 gigabytes/second
Moderate*: 1 megabyte - 1 gigabyte/second

*Moderate is limited to the top 10 of this category for readability
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.