Data Gravity Index DGx™

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Data Gravity Index DGx™ v1.5 – Executive Summary

Data Gravity inhibits enterprise workflow performance, raises security concerns, and increases costs, all complicated by regulatory requirements and other artificial constraints.

We are publishing our findings as an annual report to facilitate industry dialogue and to assist both our Enterprise and Service Provider customers as they shift their infrastructure strategy to address this emerging megatrend. Introducing the Data Gravity Index DGx™ v1.5 — an expanded global forecast that measures the intensity and gravitational force of enterprise data growth for 53 metros and 23 industries.

HIGHLIGHTS

1/ Accelerating growth across all regions and metros.

Data Gravity Intensity, as measured in gigabytes per second, is expected to grow by a compound annual growth rate of 139% globally through 2024 as data stewardship drives global enterprises to increase their digital infrastructure capacity to aggregate, store and manage the majority of the world's data.

2/ Permeating across all industry segments.

No industry is immune to the effects of Data Gravity. Through 2024, Data Gravity Intensity* is expected to grow by a compound annual growth rate of 144% across almost three quarters of the 23 industry segments analyzed. Global Mergers & Acquisitions activity is expected to return to pre-Covid levels and drive accelerated growth of global enterprises[1], including increasing the number of enterprise data sources participating in data exchange.

3/ Pairs of metros share unique attraction rate.

Specific metro pairs were identified as having flows between each other, directly increasing their Data Gravity Intensity both within their metro and their high attraction between metros. This shift in importance towards digitally-enabled interactions across global enterprises will increase data exchange volumes exponentially.

4/ Approaching quantum computing levels of data creation, processing & storage.

By 2024, it is estimated G2000 Enterprises across 53 metros will create data at a rate of 1.4 million gigabytes per second and will require nearly 20,000 petabytes of additional data storage annually. Data location matters to global enterprises as they look to meet compliance requirements by maintaining local copies of critical data.

5/ Requires data-centric enterprise architecture & connected community approach to address.

Current backhaul architecture cannot address enterprise Data Gravity needs, including data exchange across multiple internal/external platforms, local data copies, and ability to run performant analytics across each global point of presence. Data Gravity requires a connected community approach between enterprises, connectivity, cloud and content providers integrating core, cloud and edge at centers of data exchange, implementing a secure, hybrid IT and data-centric architecture globally at points of business presence.

The Data Gravity Index DGx™ is a global forecast that measures the intensity and gravitational force of enterprise data growth for 53 metros and 23 industries.

1. Goldman Sachs, BRIEFINGS Newsletter June 16, 2020

*Defined as meeting a threshold of 1 gigabyte of data per second or greater

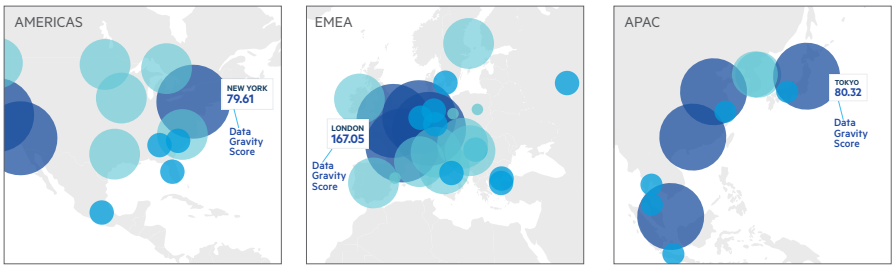
$$\left(DM \times DA \times BW\right) / L^2$$

DATA MASS | DATA ACTIVITY | BANDWIDTH | LATENCY

Solving for Data Mass and Data Activity.

The size and attraction of data for each metro was created by solving for a Data Mass number and a Data Activity number. The result was then multiplied by the average Bandwidth and divided by the average Latency squared.

The Data Gravity Index Score measures the intensity and gravitational force of enterprise data growth across **53 metros and 23 industries globally.** The score provides a relative proxy for measuring data creation, aggregation and processing.



Figs. 1, 2 and 3. *Data Gravity Index*, Dec. 2020

G2000 Enterprise IT Composite Profile [1,2,3,4,5,6,7,8]

- **13+** Countries w/Business Presence (Average per Enterprise)
- **19K** Business Units in 53 Metros
- **36+** Points of Presence (PoPs)
- **7K+** Datacenter PoPs
- **100M+** Employees
- **11M+** Applications
- **57K+** SAAS Applications
- **$2.6T+** Annual IT & Network Spend
- **$18B+** Annual IAAS Spend
- **$8B+** Annual PAAS Spend
- **$40B+** Annual SAAS Spend
- **$7B+** Annual Colocation Spend

As a cohort, Global 2000 Enterprises

have the greatest propensity to need to address data gravity. This segment **spends $2.6T annually on IT Infrastructure & Networking**, operating the most complex systems and serving millions of users and endpoints, with coverage across many points of presence globally.

1. Gartner; 2. HG Insights; 3. Intricately; 4. Synergy Research; 5. Gartner; 6. IDC; 7. Telegeography; 8. Digital Realty Market Intelligence & Analytics

Data Gravity Intensity Global Forecast[1,2]

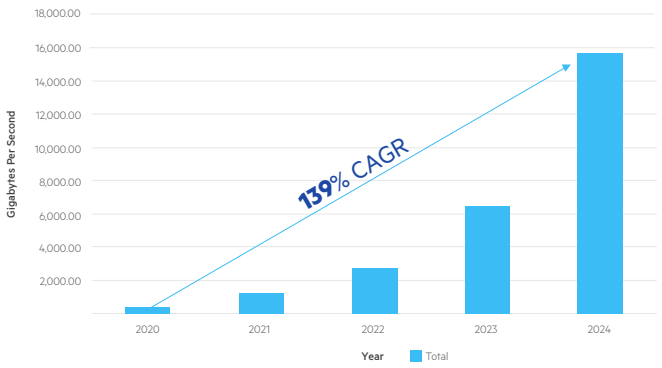


Fig. 8. *Data Gravity Index*, Dec. 2020

1. Data Gravity Intensity is calculated across 53 metros using the Gravity Index Formula: (DM x DA x BW) / L^2
2. Data Gravity Intensity is defined by the Data Gravity Index Score. See Methodology for scoring and data.

Data Gravity Intensity Metro Forecast[1,2]

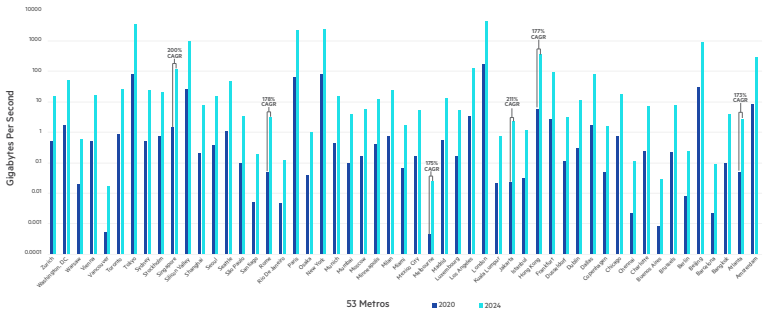


Fig. 10. *Data Gravity Index*, Dec. 2020

1. Data Gravity Intensity is calculated by the Data Gravity Index Formula: (DM x DA x BW) / L^2
2. Data Gravity Intensity is defined by the Data Gravity Index Score. See Methodology for scoring and data.

Global Data Gravity Forecast

Data Gravity Intensity, as measured in gigabytes per second, is expected to grow by a compound annual growth rate of 139% globally through 2024.

Metro Data Gravity Forecast

From 2020 to 2024, the top 6 metros with the highest CAGR (in descending order) are:

Jakarta, Singapore, Rome, Hong Kong, Melbourne, Atlanta.

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ACCESS THE FULL DATA GRAVITY INDEX DGx™ REPORT

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