GLOBAL DATASPHERE EXPECTED TO REACH 175ZB IN 2025

Annual Size of the Global DataspHERE

Source: Data Age 2025, sponsored by Seagate with data from IDC Global DataSphere, May 2020
‘The State of Dark Data’ survey of 1,300 IT and business leaders conducted by data management platform, Splunk, revealed:

- 55% of the surveyed organizations’ data is ‘dark’, which is defined as “untapped and, often, completely unknown”.
- Yet, the vast majority of survey participants agreed that data is “extremely valuable for success”.
Is data really an asset?

**Legal rights in data**

- Contract
- Confidential Information
- Property Rights
- Copyright
- EU and UK Database Rights

**Data**

- 100001111
- 10011
- 011110000
- 011

**Hardware**

**Possession/Access**
Automotive Data – What’s the Source?

- **OBD2** – Data Port Access by service technicians

- **GPS** - Vehicle Navigation systems (early 1990s)

- **OEM Safety & Convenience Systems** (cellular)
  - GM On-Star™, Mercedes Connected, BMW ConnectedDrive, FordPass™, Toyota Connected

- **Insurance Systems** – Access through OBD2 – “Driver Behavior Information”

- **V2X** – Vehicle to Everything – WiFi (DSRC) and 5G/CV2X
WHO OWNS THE DATA?

Nest Thermostat Example
“Covered Information”

1 - Driver Behavior Information:
Covered Information about how a person drives a vehicle. Examples are vehicle speed, seat belt use, and information about braking habits. This does not include information that is used only for safety, diagnostics, warranty, maintenance, or compliance purposes.

2 - Geolocation Information:
Covered Information about the precise geographic location of a vehicle.

3 - Identifiable Information:
Information that is linked or reasonably linkable to i) the vehicle from which the information was retrieved, ii) the Owner of that vehicle, or iii) the Registered User using Vehicle Technologies and Services associated with the vehicle from which the information was retrieved.
CONSUMER PRIVACY PROTECTION PRINCIPLES

- **Transparency**: Participating Members commit to providing Owners and Registered Users with ready access to clear, meaningful notices about the Participating Member’s collection, use, and sharing of Covered Information.

- **Choice**: Participating Members commit to offering Owners and Registered Users with certain choices regarding the collection, use, and sharing of Covered Information.

- **Respect for Context**: Participating Members commit to using and sharing Covered Information in ways that are consistent with the context in which the Covered Information was collected, taking account of the likely impact on Owners and Registered Users.

- **Data Minimization, De-Identification & Retention**: Participating Members commit to collecting Covered Information only as needed for legitimate business purposes. Participating Members commit to retaining Covered Information no longer than they determine necessary for legitimate business purposes.

- **Data Security**: Participating Members commit to implementing reasonable measures to protect Covered Information against loss and unauthorized access or use.

- **Integrity & Access**: Participating Members commit to implementing reasonable measures to maintain the accuracy of Covered Information and commit to giving Owners and Registered Users reasonable means to review and correct Personal Subscription Information.

- **Accountability**: Participating Members commit to taking reasonable steps to ensure that they and other entities that receive Covered Information adhere to the Principles.

PRIVACY PRINCIPLES FOR VEHICLE TECHNOLOGIES AND SERVICES - Established: November 12, 2014 - Reviewed: May 2018
IDC used the term “Steward of Data” in its Data Age 2025 study.

With the transition to cloud hosting and data management, more and more consumer data is collected and kept by enterprises, who are tasked with managing/sorting out all aspects of:

- Data Protection: Legal and physical
- Data Privacy: Regulatory (HIPPA, GDPR)
- Data Ownership: can be ambiguous (see next slide)
### DATA MONETIZATION – ACTIVE BUSINESS MODELS

**SaaS and Advertising: “The Status Quo”**

<table>
<thead>
<tr>
<th>B2B</th>
<th>B2C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAAS</strong></td>
<td><strong>DATA MINING</strong></td>
</tr>
<tr>
<td>(Subscription)</td>
<td>(GOV’T, BUSINESS, HEALTHCARE)</td>
</tr>
<tr>
<td><strong>IN-APP PURCHASES</strong></td>
<td><strong>ADVERTISING</strong></td>
</tr>
<tr>
<td>(VIRTUAL GOODS)</td>
<td></td>
</tr>
<tr>
<td><strong>USER PAYING</strong></td>
<td><strong>THIRD PARTY PAYING</strong></td>
</tr>
<tr>
<td>(2-WAY MODEL)</td>
<td>(3-WAY MODEL)</td>
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</tbody>
</table>
**DATA MONETIZATION – ACTIVE BUSINESS MODELS**

**SaaS and Advertising: “The Status Quo”**

<table>
<thead>
<tr>
<th>SaaS Model</th>
<th>Advertising Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B2B</strong>: 2-way model (user pays)</td>
<td><strong>B2C</strong>: 3-way model (3rd party pays, free to user)</td>
</tr>
<tr>
<td><strong>Subscription based</strong></td>
<td><strong>Usage and/or click-based</strong></td>
</tr>
<tr>
<td><strong>Pros</strong>: Ease of cloud delivery, recurring revenues, easy to upsell</td>
<td><strong>Pros</strong>: benefits from advertising technology, runs on auto-pilot</td>
</tr>
<tr>
<td><strong>Cons</strong>: customer acquisition cost, risk of churn (customers leaving)</td>
<td><strong>Cons</strong>: testing the boundaries of consumer privacy</td>
</tr>
<tr>
<td><strong>Example: LexisNexis, Thomson Reuters</strong></td>
<td><strong>Example: Google, Facebook</strong></td>
</tr>
</tbody>
</table>
## DATA MONETIZATION – ACTIVE BUSINESS MODELS

Virtual Goods and Data Mining: “The Next Frontier”

<table>
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<td><strong>SAAS</strong></td>
<td><strong>IN-APP PURCHASES</strong></td>
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<td><strong>DATA MINING</strong></td>
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<td></td>
<td>(GOV’T, BUSINESS,</td>
</tr>
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<td></td>
<td>HEALTHCARE)</td>
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<td><strong>USER PAYING</strong></td>
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<tr>
<td><strong>DATA MINING</strong></td>
<td><strong>ADVERTISING</strong></td>
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<tr>
<td>(GOV’T, BUSINESS, HEALTHCARE)</td>
<td>THIRD PARTY PAYING (3-WAY MODEL)</td>
</tr>
</tbody>
</table>
## DATA MONETIZATION – ACTIVE BUSINESS MODELS

### In-App Purchases and Data Mining: “The Next Frontier”

<table>
<thead>
<tr>
<th>In-App Purchase Model</th>
<th>Data Mining Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B2C</strong>: 2-way model (user pays)</td>
<td><strong>B2B</strong>: multi-party data collection and monetization (gov’t/healthcare are first users)</td>
</tr>
<tr>
<td><strong>Transaction based</strong> (virtual goods)</td>
<td><strong>Customized/contract based</strong> (can be SaaS), new business models still forming</td>
</tr>
<tr>
<td><strong>Pros</strong>: Ease of cloud delivery, no cost of goods, high gross profit margin</td>
<td><strong>Pros</strong>: reaps the full benefits of predictive analytics and other big data tools, intermediary data platforms already exist in the market</td>
</tr>
<tr>
<td><strong>Cons</strong>: reliance on app platforms, cost of distribution is 30%</td>
<td><strong>Cons</strong>: data security, ownership and privacy can be challenging in a multi-party arrangement, expensive service that’s not affordable to SMEs</td>
</tr>
<tr>
<td><strong>Example</strong>: Epic Games (Fortnite)</td>
<td><strong>Example</strong>: Palantir</td>
</tr>
</tbody>
</table>
Automotive Data Rights – What’s Happening in the Industry?

• Rights to automotive data have significant value:
  • “According to a McKinsey Report, “The overall revenue pool from car data monetization at a global scale might add up to USD 450 - 750 billion by 2030.”
    • Using AI to unlock automotive insights from data is in its very early stages
    • Selective vehicle recalls – “smart campaigning”

• What the Vehicle Manufacturers Are Doing? – North America
  • Automotive Manufacturer’s Alliance
    • Automotive Data Rights – Automotive Consumer Privacy Protection Principles – “Covered Information”
      • Provide consumers with clear and meaningful information about the types of data being collected
      • Provide ways for consumers to manage their data
      • Obtain affirmative consent
Alliance of Automobile Manufacturers, Inc. – AutoAlliance (North America)

Membership

- AMERICAN HONDA MOTOR CO., INC.
- ASTON MARTIN LAGONDA OF NORTH AMERICA, INC.
- BMW OF NORTH AMERICA, LLC
- CHRYSLER GROUP LLC
- FERRARI NORTH AMERICA
- FORD MOTOR COMPANY
- GENERAL MOTORS LLC
- HYUNDAI MOTOR AMERICA
- KIA MOTORS AMERICA
- MASERATI NORTH AMERICA, INC.
- MAZDA NORTH AMERICAN OPERATIONS
- MERCEDES–BENZ USA, LLC
- MITSUBISHI MOTORS NORTH AMERICA, INC.
- NISSAN NORTH AMERICA, INC.
- PORSCHE CARS NORTH AMERICA
- SUBARU OF AMERICA, INC.
- TOYOTA MOTOR SALES, USA
- VOLKSWAGEN GROUP OF AMERICA, INC.
- VOLVO CAR GROUP
Global C-V2X Forecast Module Shipments

<table>
<thead>
<tr>
<th>Year</th>
<th>APAC</th>
<th>North America</th>
<th>EMEA</th>
<th>Total C-V2X Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>0.08</td>
<td>0.01</td>
<td>0.01</td>
<td>0.1</td>
</tr>
<tr>
<td>2021</td>
<td>0.2</td>
<td>0.08</td>
<td>0.02</td>
<td>0.21</td>
</tr>
<tr>
<td>2022</td>
<td>1.26</td>
<td>0.14</td>
<td>0.05</td>
<td>1.4</td>
</tr>
<tr>
<td>2023</td>
<td>3.84</td>
<td>0.72</td>
<td>0.24</td>
<td>4.8</td>
</tr>
<tr>
<td>2024</td>
<td>5.76</td>
<td>1.08</td>
<td>0.36</td>
<td>7.2</td>
</tr>
<tr>
<td>2025</td>
<td>9.17</td>
<td>2.62</td>
<td>1.31</td>
<td>13.1</td>
</tr>
<tr>
<td>2026</td>
<td>11.4</td>
<td>4.75</td>
<td>2.85</td>
<td>19</td>
</tr>
</tbody>
</table>

Million Units
• **Map the data ecosystem** to understand value flows and incentives for a data sharing arrangement

• **The value may lie in the outcomes** of sharing data, not in the data itself

• **No one size fits all:** the business should ensure policy and technical stacks evolve synergistically to support different data governance models to facilitate responsible data sharing and innovation
The digitization journey

**Change and project management**

<table>
<thead>
<tr>
<th>Inception</th>
<th>Business Strategy</th>
<th>Regulatory</th>
<th>Digital Strategy</th>
<th>Management</th>
<th>Technology</th>
<th>Value Creation</th>
<th>Capital Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>What assets do we have and what can we do with them?</td>
<td>What do we want to do with our digital assets?</td>
<td>What are we allowed to do?</td>
<td>How should we build, grow and protect our digital assets?</td>
<td>How should we organize ourselves and our digital assets?</td>
<td>What technology can support us?</td>
<td>How will we create business value from our digital assets?</td>
<td>How will we realise the capital value of our digital assets?</td>
</tr>
</tbody>
</table>

- Digital asset Inventory Assessment
- Digital boost for business strategy
- Regulatory assessment
- Digital strategy development + execution
- Effective digital asset management
- Tech for digital assets
- P&L value of digital rights and assets
- Balance sheet value of digital rights and assets
The CDDI is advancing biomedical research through data science

New Cascadia Data Discovery Initiative accelerates health innovation

Jul 12, 2019 | John Kahen - Chief Data Analytics Officer

The Cascadia Innovation Corridor is home to some of the world’s leading technology, research and medical organizations. In December of last year Microsoft and Fred Hutchinson Cancer Research Center together started a new chapter for our region when Microsoft President Brad Smith announced a $4 million challenge gift focused on accelerating cancer research. Today, in collaboration with Fred Hutch, we’re proud to welcome four key players as part of the Cascadia Data Discovery Initiative (CDDI): BC Cancer, University of British Columbia, University of Washington eScience Institute and the Knight Cancer Institute at Oregon Health & Science University.
How to make progress

Improving the legal framework for data sharing

Advancing privacy preserving technologies

Building modern software tools to enable data sharing
Take-aways

**Know your data**
- Knowing your data and knowing what rights attach to your datasets is vital to your data strategy

**Treat your data with care**
- When contracting, don't treat data assets as a commodity

**Keep up with the regulations**
- Data governance on a country-by-country basis and rules on data localisation are increasing issues and will impact your data strategy

**Get involved**
- There are numerous consultations on going – take the opportunity to [try to] shape a coherent regime for data
Key Take-aways – Automotive Data

• Your vehicle already shares data

• That data has significant value to a variety of parties

• V2X will dramatically increase the amount of vehicle data available

• Vehicle makers understand the need to protect the consumer
## KEY TAKEAWAYS:
**GET YOUR DATA MONETIZATION ACTION PLAN**

<table>
<thead>
<tr>
<th></th>
<th>Protection/Compliance</th>
<th>B2B Space</th>
<th>B2C Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Keep your corporate data well protected</td>
<td>You should already be thinking about data monetization!</td>
<td>Do not be deterred from engaging in data monetization!</td>
</tr>
<tr>
<td></td>
<td>Review your trade secret protocols and contracts</td>
<td>Explore existing data platforms for insights</td>
<td>Think beyond advertising: virtual goods, other digital intangibles</td>
</tr>
<tr>
<td></td>
<td>Ensure compliance with jurisdictional privacy laws (GDPR, etc)</td>
<td>Package data you can extend via a SaaS model</td>
<td></td>
</tr>
</tbody>
</table>

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(650) 561-3374
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