



Big Futures Data and iOra

BENEFITS

DATA DELIVERY IN DDIL ENVIRONMENTS

Disrupted, Disconnected, Intermittent and low-bandwidth

MASSIVE SCALABILITY

We work with companies large and small, supporting small installations and tens of thousands of users and terabytes of replicated content.

INTEROPERABLE INFORMATION SHARING

Consistent enterprise-wide information management is enforced by ensuring that all users, irrespective of location, have access to the same information and data.

CYBER SECURE

Managed release of information to interested parties without the requirement to open network access to users outside of your domain

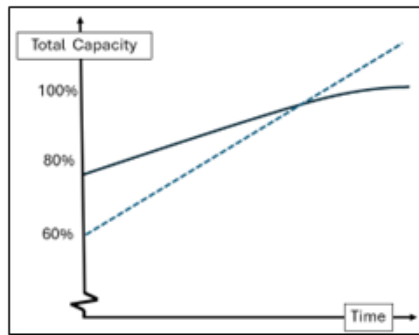
MORE

INFORMATION

For more information on any of our products or services please visit our website

www.iOra.com
contact: sales@iOra.com

IDC recently announced a jaw dropping increase in the estimated quantity of data now stored globally – jumping to 175 zettabytes by 2025 that constitutes a 33 zettabyte increase from the current year or a staggering compound annual growth rate of 61%. Clearly good news for hard disk manufacturers but worrying implications for network providers as real concern is now being expressed that limited network capacity will be outstripped by actual data demand on the network that is expressed as a measure of the data available. The graph below provides an indication of the potential issue, where network capacity begins to flatten where maximum connectivity is achieved, and data demand continues to rise.



What appears to be behind this dramatic data requirement is the emergence of a whole set of technology platforms that can only exist on the availability and update of critical data. These edge-based applications and algorithmic systems are wholly reliant on the access to data to re-tune their operational behavior to the latest real-world trend and conditions. This data dependency is a hard-wired aspect of their operation and without access they quickly become redundant processes. Modern connected automobiles now are equipped with up to 200 on-board sensors and increasing that number on each release of a new vehicle.

These sensors track everything from engine temperature to seatbelt tension and status. As the autonomous driving revolution accelerates, the data produced by connected cars could reach an estimated 10 exabytes per month that would constitute a thousand-fold increase over current data volumes.

The surge of investment in Artificial Intelligence and Machine Learning technologies is also contributing to this data explosion. Generative AI models, such as language models and neural networks, learn from data. The more diverse and representative the data, the better the model's understanding of patterns, semantics, and context. Data provides the foundation for the model's knowledge and ability to generate meaningful content. During training, the model adjusts its internal parameters based on the input data. It learns to predict the next word in a sentence, generate coherent paragraphs, or even create images. Once deployed the models need to be constantly fed with data to tune and re-tune the model so that they are an accurate reflection of the real world.

Data-driven digital twins can simulate and predict behavior. They offer insights into how an object functions, enabling improvements and optimizations. A digital twin is a virtual counterpart of a physical object, system, or process. It behaves as closely as possible to its real-world counterpart. The digital twin is continuously updated using data collected from its physical counterpart, allowing it to simulate and predict real-time behaviour. Data serves as the brain of a digital twin. It provides the necessary intelligence for modelling, optimization, and early warnings. Organizations implementing the Internet of Things (IoT) are already using digital twins or planning to adopt them. These twins significantly enhance data-driven decision-making processes.

Consequently, we need think smart in terms of data management, transfer and storage to continue to operate over an ultimately limited network resource. Where we are experiencing dramatic growth in network capabilities, including global satellite networks, these resources will be ultimately limited to provide only a finite capacity. The expansion of data, both generated and stored, does not have any form of limitation and is therefore set to eventually exceed the network capacity.

