**TRANSNETWORKING** embodies a new architecture approach to achieve highly generic, interoperable computer networking by exposing data transfer, storage and processing resources of the intermediate node through a common interface at a new layer of the network stack, called the Transit Layer.

**LOGISTICAL NETWORKING** implements the Transnetworking architecture in overlay for storage and processing services that adhere to the Internet's end-to-end principle. Applications of Logistical Networking include content distribution, remote visualization, video transcoding and data mining.

**PIPELINING & CACHING** extends the IBP protocol to overcome the cost of fine-grained control, optimizing the performance of IBP to lay a foundation for constructing end-to-end protocols and tools to meet performance requirements of Logistical Networking applications.

- Later operations can be issued before earlier operations have completed;
- Out-of-order response from the depot can be supported;
- Data dependency is detected dynamically and enforced by depot;
- Control dependency can be overcome by techniques from processor pipelining.

- Labelled IBP instructions can be cached at the depot;
- Control over the execution of fine-grained operations can be delegated to the depot explicitly and reverted to the endpoint as needed;
- Degree of autonomy (credits) granted to the depot at any time is under the complete control of the endpoint, and can be modified dynamically.

**IBP**: The Internet Backplane Protocol provides a primitive mechanism for managing network storage in a scalably sharable way. It implements the Transit Layer functionality of the Transnetworking stack. The processing dimension of the Transit Layer has been added to IBP through a modular extension to the protocol called the Network Function Unit (NFU), which provides an abstraction of processor resources of intermediate node.

**L-Bone**: The Logistical Backbone is a directory and resource discovery service for an international deployment of 320 depots that serves 37 TB of storage as a shared resource for the scientific community.

**LoRS**: The Logistical Runtime System is an API and associated set of software tools that use IBP, the ex-Node, and the L-Bone to implement end-to-end services, such as checksums and encryption.