Cloud Computing is Ideal for “Loosely Coupled” Applications

- Collaboration
- Business Intelligence
- Web 2.0
- SME ERP
- Application Test
- Data Archive
- LE ERP
- Web Scale Analytics [Enterprise Data]
- On-Line Storage
- Transactional Content
- Situational Apps
- European Situational Awareness
- Application Development

Higher Gain From Clouds
Lower Pain To Cloud Delivery

Higher Pain To Cloud Delivery
Lower Gain From Clouds

“Loosely Coupled” Architecture
“Content-Centric” Architecture
“DB-Centric” Architecture
Storage and Data Integration Architecture

Courtesy IBM
**Information Assurance Risk Factors by Domain**

- **Least Degree of Trust** (Authentication, Information Validation & Privacy)
  - Police, Fire, EMT Non-secure Communications
  - State/Provincial & Local Alerts & Warnings
  - Law Enforcement COI Secure Communications
  - National Government CBR Alert to Local & Regional ER/LE OR ISO SECRET or HIGHER GOVERNMENT Communications

- **Highest Degree of Trust**
  - US Navy ELF Submarine Communications System
  - Air Traffic Control
  - US National Command Authority Networks

**International Cloud Data Environment**

- Browser-based applications
- Ubiquitous data access
- Global compatibility
- Reduced capital requirements
- “Frictionless” Environment (Viral Applications)
- International marketplace of ideas
International Disaster Response: InRelief.org

United Nations Organizations
* Logistics Cluster (World Food Program)
* One Response
* ReliefWeb
* UN Population Fund (UNFPA)
* UNICEF
* UN Spatial Data Infrastructure
* UN World Food Programme

International Organizations
* CARE International
* Disaster Charter
* Doctors Without Borders
* International Rescue Committee
* Oxfam International
* Red Cross
* Save the Children
* Ushahidi

United States Organizations
* AmeriCares
* Direct Relief Person Finder
* Project Hope

Scientific Collaboration: NASA & Japan NII

* Jointly served publicly-available selections of Mars Orbiter data sets
* First step in NASA’s efforts to demonstrate how cloud standards can facilitate interoperability and data portability for the benefit of the international science community
* NASA and NII will collaborate on open source reference implementations of interoperable cloud services
Market Collaboration: EuroCloud

“The cloud model stands for global reach, ecosystem partnerships and integration. Our goal in developing EuroCloud is to promote SaaS and cloud services and applications across Europe and encourage its take up. EuroCloud will be an accelerator of business, of technological relationships and application integration. It will represent the cloud industry in Europe -- taking into account local differences -- and be an excellent platform for exchanges with America or Asia,”

*Pierre-José Billotte, EuroCloud

Challenges

Legal Issues
- Differences in consumer protection laws
- Management of transborder data flows
- International data privacy and security safeguards
- Cross border regulatory enforcement
- Electronically Stored Information / E-Discovery

Interoperability, Portability
- Use and consistent implementation of open standards.
- Market consolidation on a limited number of proprietary protocols/interfaces

Increase “Digital Divide”
- Dependency on high broadband speeds at affordable prices
- Reduced incentive for the development of locally-based internet computing expertise and capability
Data Confidentiality, Privacy, Integrity

- Data stored, transmitted and processed outside of the organization
- Shared computing environments
- No physical control of data
- Physical and logical access managed by provider
- No controls to prevent data modification
- No logging events on data (access, modification, transmission)

Regulation and Compliance

- Data subject to new laws
- Exposure to foreign governments and subpoenas
- Retention requirements vary among jurisdictions
- Audit of provider’s environment
- Increased complexity to comply with standards
Thank You!

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