

Standards in Action; An Industry Perspective

**Presented to: ISO TC211 Meetings
Montreal, Quebec Canada,
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Agenda



- Company Background
- Solution Challenges
- Key Market Trends
- OGC & ISO
- Standards Development & Implementation
- The Value of Standards

PCI Geomatics Profile



Privately held Canadian corporation

A world leading geomatics technology developer

More than 50,000 licenses installed in over 100 countries

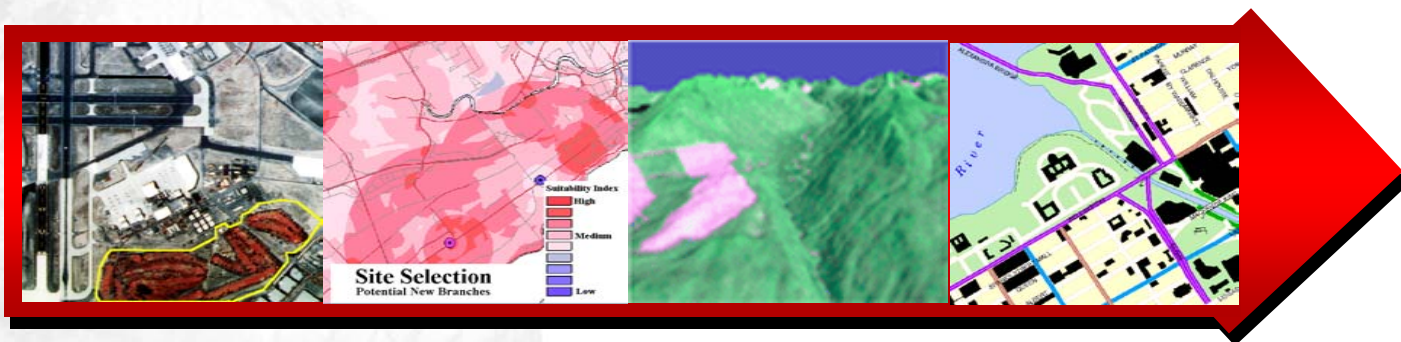
80+ resellers worldwide

PCI Geomatica Technology Platform



Complete geospatial processing solution

- Image Processing
- Photogrammetry
- GIS
- Cartography
 - Web Information Services



Solution Challenges



Requirements in Distributed Processing Production Environments:

- Heterogeneous OS & Hardware Platforms
- Heterogeneous Application Environment
- Heterogeneous Data Environment

- Unified Information Access

- Workflow-oriented Function Delivery

Key Industry Trends



EO Data supports Decision Making & Planning:

EO data complements existing data sets for update, validation or analysis purposes

High-resolution EO data can provide a basis for topographic infrastructure inventories where base line surveying data is missing, outdated or not obtainable

Large amounts of new satellite imagery by 2011

Additional 5-6 medium resolution platforms to be launched

(note: EO is Earth Observation)

Key Industry Trends



Geomatics supports Mainstream IT:

Vertical Integration:

Data-centric to Information-oriented

One-Stop-Shopping Solutions =

Needs oriented Solutions

IT Infrastructure Integration

Information need accelerates connection to
enterprise wide solutions and enabling technologies

OpenGIS Provides Interoperability



- OpenGIS Specifications have been agreed to by a broad swath of the community and are supported by most of the geoprocessing software vendors.
- OpenGIS links geographic data with mainstream IT via the geospatial architecture in which geospatial components from multiple sources can plug-and-play through standard interfaces.
- OpenGIS maintains a leading technical architecture made up of the suite of interfaces for the benefit of the industry and its customers and works to minimize greed, parochialism, and lethargy in the market.
- Vendor implementation in products enables the customer to directly access and use data produced by programs from many vendors -- not just one.

Our Commitment to Standards



Driving Interoperability through Standardisation:

Founding sponsor of the OpenGIS Consortium

Dr. Robert Moses, President of PCI,
is a Member of the OGC Board of Directors

Strong working relationship with OGC Europe

PCI is dedicated to OpenGIS engineering approaches

Significant on-going research and development efforts

Leading developer for raster aspects of interoperability

Our Commitment to Standards



PCI Interoperability Projects Involvement:

Critical Infrastructure Protection Initiatives

GeoConnections Canada OWS, WFS, WCS

Operational demonstration for Police and
Local Government in UK.

Prototyping of Topographic Mapping, Disaster Management
and Environmental Monitoring for
Canadian Government

Standards support geospatial IT integration:

- OGC develops & validates specifications through the Interoperability Program and Testbed and Pilot Initiatives
- ISO provides long-term stability through standardisation of core specifications
- ISO standards help to bridge the spatial and non-spatial aspects of overall IT solutions

PCI maintains and develops the following services based on OGC Specifications:

Web Map Server

Web Feature Server

Web Coverage Server

OGC Web Map Service:

A Web Map Service (WMS) produces maps of georeferenced data. We define a “map” as a visual representation of geodata; a map is not the data itself. This specification defines three WMS operations:

GetCapabilities returns service-level metadata, which is a description of the service's information content and acceptable request parameters;

GetMap returns a map image whose geospatial and dimensional parameters are well-defined;

GetFeatureInfo (optional) returns information about particular features shown on a map.

OGC Web Feature Service:

The WFS Implementation Specification defines interfaces for describing data manipulation operations on geographic features using HTTP as the distributed computing platform.

Data manipulation operations include the ability to:

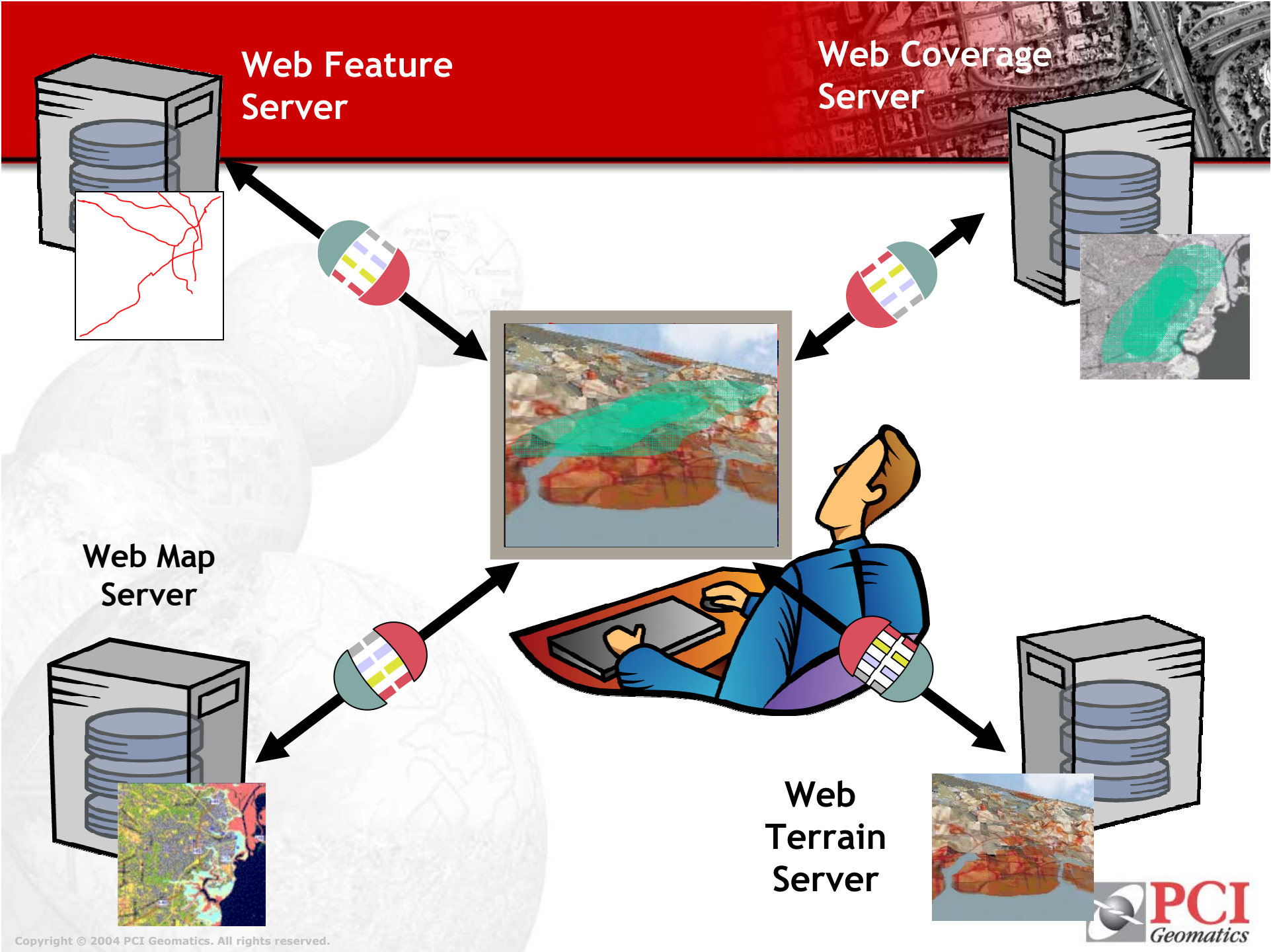
1. Create a new feature instance
2. Delete a feature instance
3. Update a feature instance
4. Get or Query features based on spatial and non-spatial constraints

A Web Feature Service request consists of a description of query or data transformation operations that are to be applied to one or more features. The request is generated on the client and is posted to a web feature server using HTTP. The web feature server then reads and (in a sense) executes the request.

OGC Web Coverage Service:

The WCS supports the networked interchange of geospatial data as "coverages" containing values or properties of geographic locations.

Unlike the Web Map Service (WMS), which filters and portrays spatial data to return static maps (server-rendered as pictures), the Web Coverage Service provides access to intact, unrendered geospatial information, as needed for client-side rendering, multi-valued coverages, and input into scientific models and other clients beyond simple viewers.



The Value of Standards



Customer Benefits:

Improve Sustainability of Investments

Enable full-scale IT Integration

Gain Vendor Independence

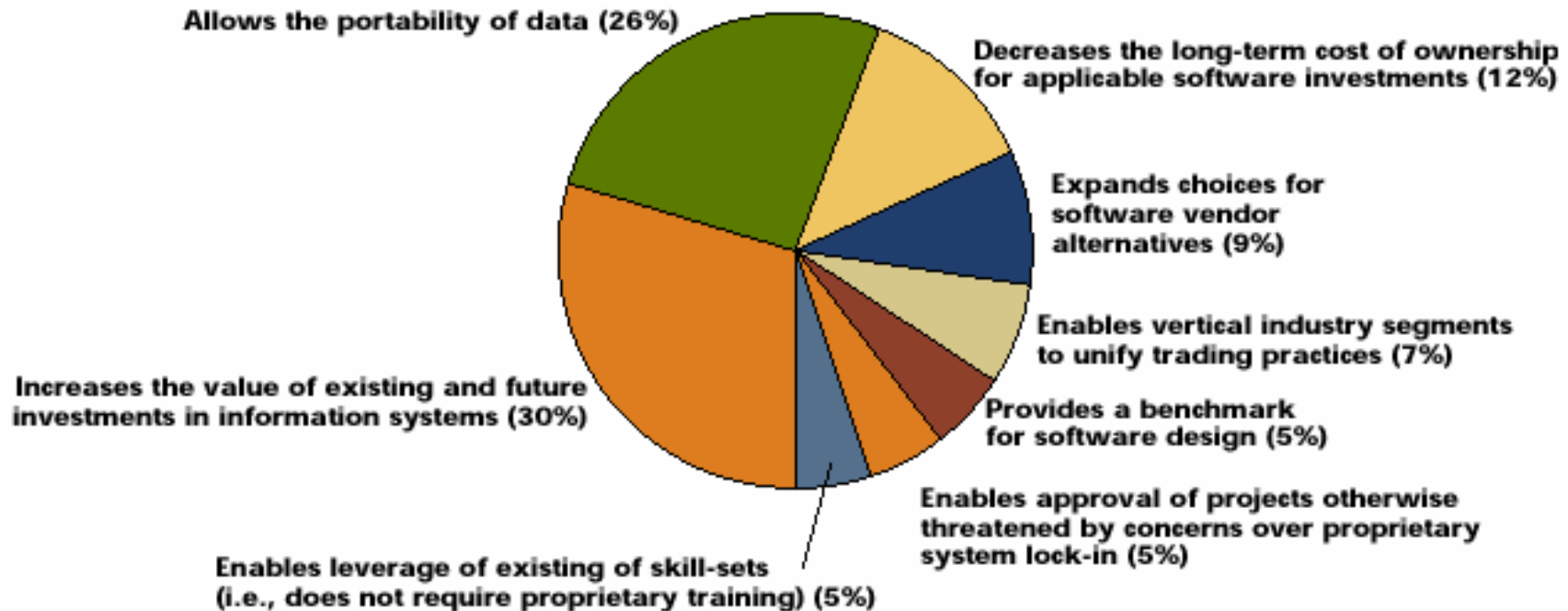
Improve Process Efficiency

Increase Liquidity

The Value of Standards



Which of the following do you believe to be the single greatest benefit offered by approved standards in software development?



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Tsunami Example (Presented IGARRS Korea, 2005)

This scenario describes analysis and decision support tasks for post-Tsunami assessment of existing data and by creating new information about the Tsunami in the Indian Ocean on December 26, 2004

1. Review Common Alert Protocol (CAP) message for Tsunami to begin analysis

- Display GML polygon from CAP message

- Display CAP text as GML Feature Information

2. Review available Tsunami data via WMS and WCS

- WMS layers provided by Asian Institute of Technology (AIT), Chulalongkorn Univ., Osaka City Univ., Univ. of Ottawa, DM Solutions

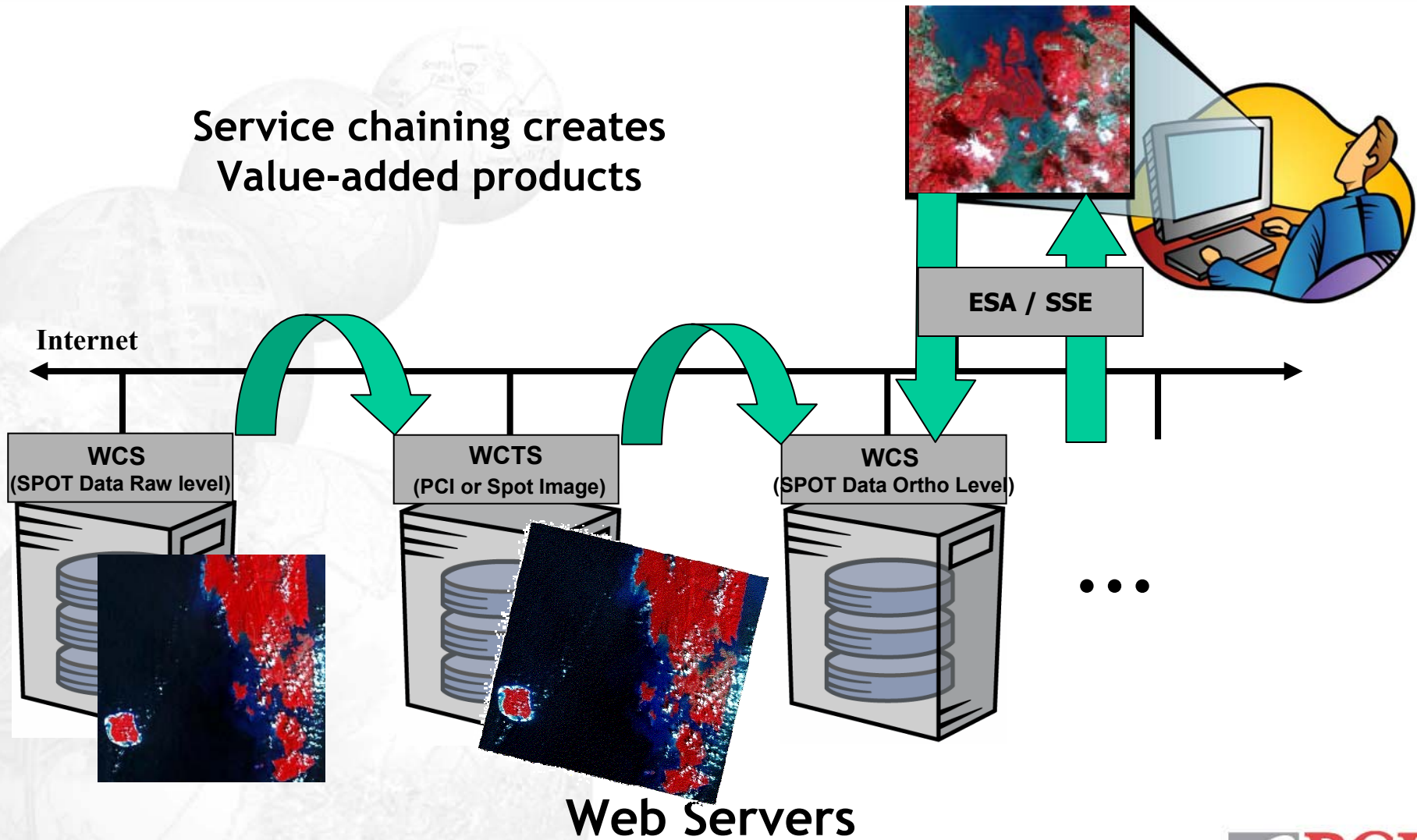
- Access to SPOT 5 images using WCS

3. Create new image product by chaining processing services

- ESA, Spot Image, PCI Geomatics WCTS, GMU

Tsunami Images within SSE

Service chaining creates
Value-added products



OGC Demonstration Participants

OGC members that supported the demonstration:

Boeing S&IS Mission Systems

DM Solutions Group

ESA (Spacebel, contractor to ESA)

George Mason University (GMU)

Intergraph

NASA

PCI Geomatics

Raytheon

Spot Image

USGS



Thank you!

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