



**Information Technology Outsourcing (ITO)
Market Update: September 2008 – Preview Deck**

**Topic: “Fluid IT Architecture” – The Evolution of
Modularity in IT Infrastructure Operations**

Background of the research

- The concept of modularity created revolutions in many industries (e.g., manufacturing) and firmly established itself in IT
- While almost every aspect of IT (e.g., hardware, software) has taken advantage of this powerful concept, IT operations remain monolithic and rarely offered in modules
- This research is a forward-looking analysis of the implication of the modularity concept for IT operations and a presentation of an innovative model of IT operations management based on the modular approach

The scope of analysis includes

- Analysis of modularity as a value driver in IT infrastructure
- Definition of modularity in IT operation
- Conceptual representation of modularity in IT operations through “Fluid IT Architecture” and the likely roadmap of Fluid IT adoption in the industry

Fluid IT concept attribution

- The concepts represented by "Fluid IT" originated with Dell Inc. and were developed with the assistance of Everest Group

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Overview and abbreviated summary of key messages

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Some of the findings in this report, among others, are:

The concept of modularity in IT

- Modularity as a value driver in IT has been around since the early 1980s
- While almost every aspect of IT (e.g., hardware, software) has taken advantage of this powerful concept, IT operations remain monolithic and rarely offered in modules

Catalysts of modularity adoption in IT operations

- Technical innovations and performance improvements created an ideal environment for adoption of modularity in IT operations
- The Infrastructure Management Services (IMS) model was the first attempt to leverage this concept in IT infrastructure
- Remote Infrastructure Management Outsourcing (RIMO) suppliers built their business models on the notion of separating labor from IT assets

Overview and abbreviated summary of key messages

(page 2 of 2)

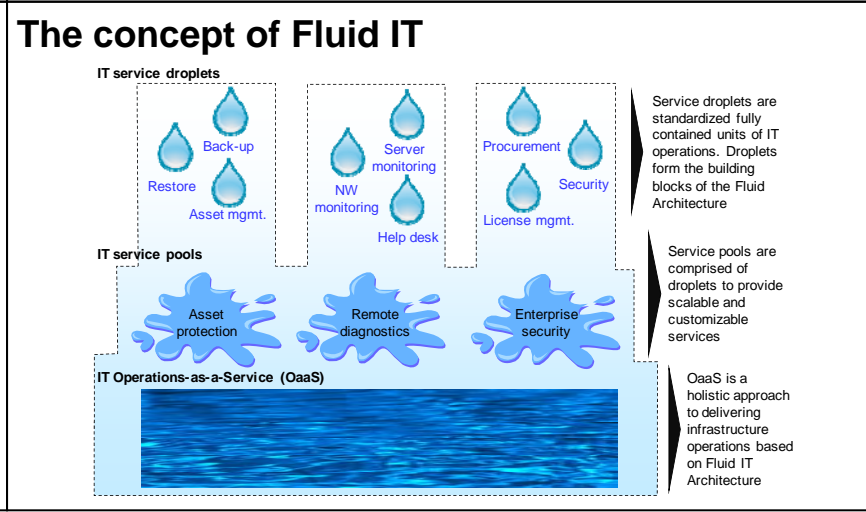
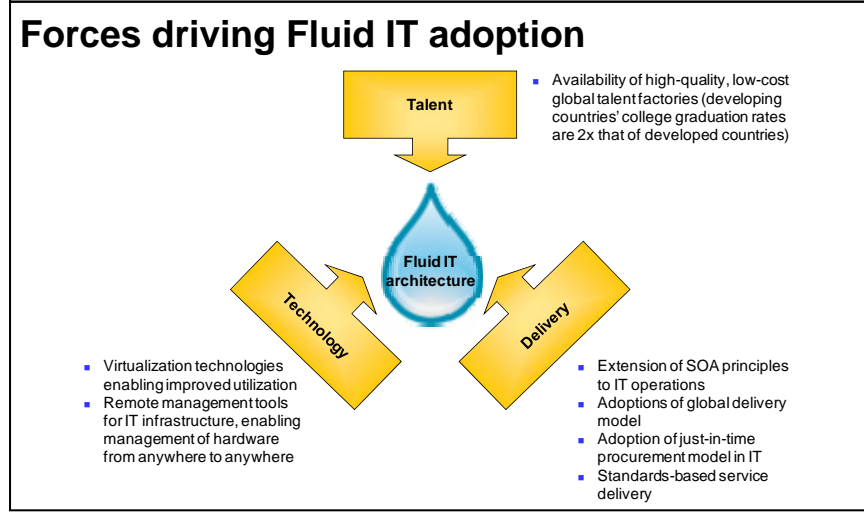
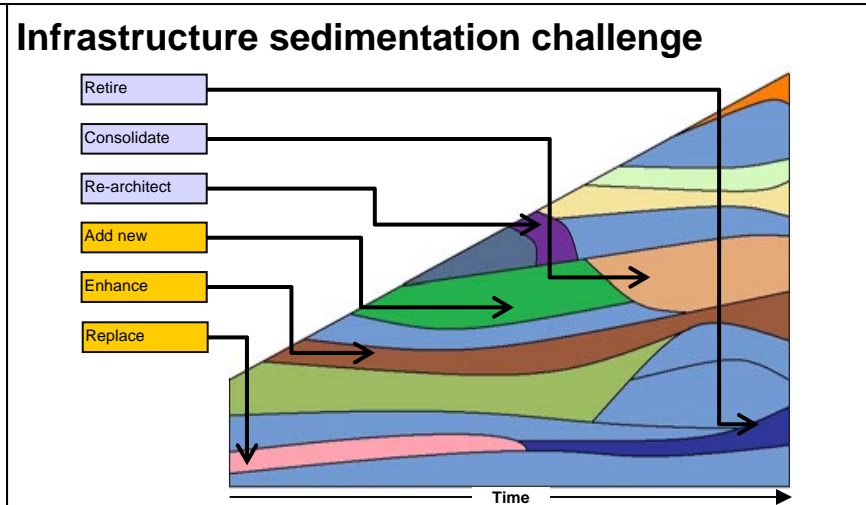
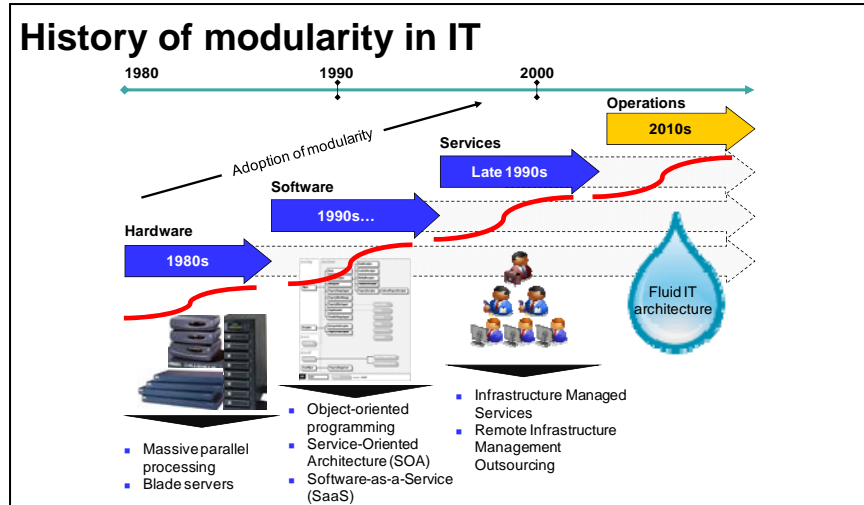


Key principles of “Fluid IT Architecture”

- IT service droplet is a key component of the Fluid IT Architecture model. The droplets are supported by the backbone that supports integration of the droplets and governs them
- Fluid IT Architecture is different from other infrastructure delivery models (e.g., virtualization, utility computing)
- Fluid IT Architecture will offer significant improvement opportunities to IT buyers

This study offers three distinct chapters providing a deep dive into the concept of Fluid IT; below are four charts to illustrate the depth of the report

ILLUSTRATIVE



Source: Everest Research Institute (2008)

The ITO report also features several case studies of the Fluid IT implementation

ILLUSTRATIVE

Dell is offering a set of modular offerings that can be combined and configured to meet unique client needs



Modular offerings

- Initial offerings include most end-user services¹
 - Help desk
 - Self help
 - Asset management
 - License management
 - Image management
 - Device monitoring
 - Vulnerability scanning
 - Usage monitoring
 - Antivirus
 - Backup/archive
 - Data encryption
 - Data restore
 - Patch management
- Expansion to data center and targeted services is underway (continuity)

SAP finds Fluid IT principles complementing its platform-based approach



Modular offerings

- Help desk and support
- Production planning/scheduling
- A/P
- A/R
- G/L
- Recruiting
- Capacity planning
- Purchasing
- Etc.

Amazon's evolving niche infrastructure offerings with several fluid principles



Modular offerings

Amazon Elastic Compute Cloud (EC2) presents a virtual computing environment, allowing use of Web-service interfaces to requisition servers of needed capacity and use as many or few systems as needed

- **Elastic** – enables easy increase or decrease in capacity
- **Controlled** – allows complete control of the instances
- **Flexible** – choice of several instance types
- **Integration** – works with other Amazon Web Services
- **Building Failure Resilient** – features include: multiple locations, elastic IP Addresses, security features,
- **Subscription-based** – avoids significant up-front investments and up-front capacity planning

Offering assessment

- Amazon's Web services exhibit many features of Fluid IT, e.g.,
 - The offerings are highly modular and consist of standardized elements (e.g., SimpleDB)
 - Amazon offers subscription-based pricing
- Shortcomings of Amazon's solution are:
 - Key solution elements are end-to-end services, which consist of multiple service elements (e.g., droplets in Fluid IT terminology)
 - Standardization is applied on the service pool level (e.g., server on demand) instead of service element level (e.g., monitoring), hence allowing a low degree of end-user customization
 - The Amazon solution is "closed" at this point, i.e., only Amazon EC2 services can be integrated to build the solution

The following documents are recommended for additional insight on the topic covered in this Research Report. The recommended documents either provide additional details on the topic or complementary content which may be of interest

1. **Infrastructure Outsourcing Roadmap** (ERI-2007-4-R-0124); 2007. This research includes comprehensive overview of the IT Infrastructure Outsourcing market, current trends and growth scenarios. In particular, this market update analyzes emergence and growth of the IMO model
2. **Asset-light outsourcing model. The role of asset ownership in the Infrastructure Outsourcing** (ERI-2007-4-R-0125); 2007. This research includes in-depth analysis of the role of assets in supporting and enabling benefits of the outsourcing engagement. It investigates emergence and growth of the asset-light model of infrastructure outsourcing

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