Managing an Internet Data Center (IDC)

Joseph L. Hellerstein*
Distinguished Experts Panel
June 4, 2009
IM 2009

*The opinions expressed are purely my own.
IDC is more than a Cloud
- May host multiple clouds
- Internal applications to support Internet services (e.g. lots of log processing)

What’s difficult?
- Deployment
- Monitoring
- Capacity management

Why difficult?
- Technology gap between development & operations
- Dev lacks integration with operations processes
- Complex dependency tree for applications
Solution 1: Integrate Software Development With Operations

- Visualization, such as source code (and deployment meta-data) overlapped with run-time logs
- Treat management scripts as first order software objects
  - Unit tests
  - Software version control
  - Tool support
Solution 2: Process Engineering for IDC Management

- ITIL for IDC? But ...
  - More detailed than ITIL
  - Better integration between software development and business
  - Need supporting tools
Solution 3: SLA-Enabled Components

- Component must expose interfaces for SLA management to their clients
  - Service level indicator – component’s interface to caller’s SLI
  - Objective – predicate on SLI
  - Exceptions interface – when SLO is unachievable

- Components must request SLAs from its providers