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CHICAGO 2009

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JBoss WORLD CHICAGO 2009

Open Source SOA: Enabler for Smart Energy

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presented by

Introducing Int3s

Consulting & solutions company specialized in Service Oriented Architecture and Business Intelligence

JBoss Advanced Business Partner

Significant contributor to the JBoss ESB code foundation (Rosetta ESB)

Product development using the JBoss components

Implementation partner for Toronto Hydro's SOA and BI programs

Introducing Toronto Hydro

Toronto Hydro is the second largest municipal electricity distribution utility system in North America.

Revenue: $2.3 Billion (Canadian)

Customers

- 678,000 Residential & Commercial
- 250,000 Apartment & Condominium Units
- Population 2.5 Million

Peak Load: 5,000 MW

Employees: 1,700

toronto hydro corporation

Toronto Hydro SOA Evolution

- Strategy to adopt SOA (2006)
- Develop the target architecture
  - CIM standard (IEC 61968) adoption (industry taxonomy)
  - SOA infrastructure (JBoss SOA Platform selected in 2008)
- Identify catalyst project: Smart Meters
- Establish a roadmap to move from the as-is to the to-be state
  - Leverage on large corporate projects
  - Organization structure and culture shift

Toronto Hydro SOA Evolution (cont)

- Funding model
- Develop skill set
- Governance

Delivery

- Foundation infrastructure
- New project enablement
- Retrofit of old systems

Why JBoss SOA Platform?

Toronto Hydro's strategy: focus on integration and not development

2 fundamental elements that constitute most-valuable IT IP: Data (messages, interfaces, Data Warehouse) & Business Processes (application integration, services, orchestration)

Cannot afford vendor/technology lock-in

JBoss offers full suite of technical tools (Hibernate, Rules, jBPM) that can accelerate the service-enabling of legacy applications

Toronto Hydro Smart Meter Project

Smart meters record how much electricity was used and when it was used (typically hourly) and communicates this information automatically via wireless and other technologies.

Smart meters are mandated by the Government of Ontario (by 2010) in an effort to encourage energy conservation and to smooth peak consumption.

Toronto Hydro has taken a leadership position in North America and currently has over 600,000 smart meters installed.

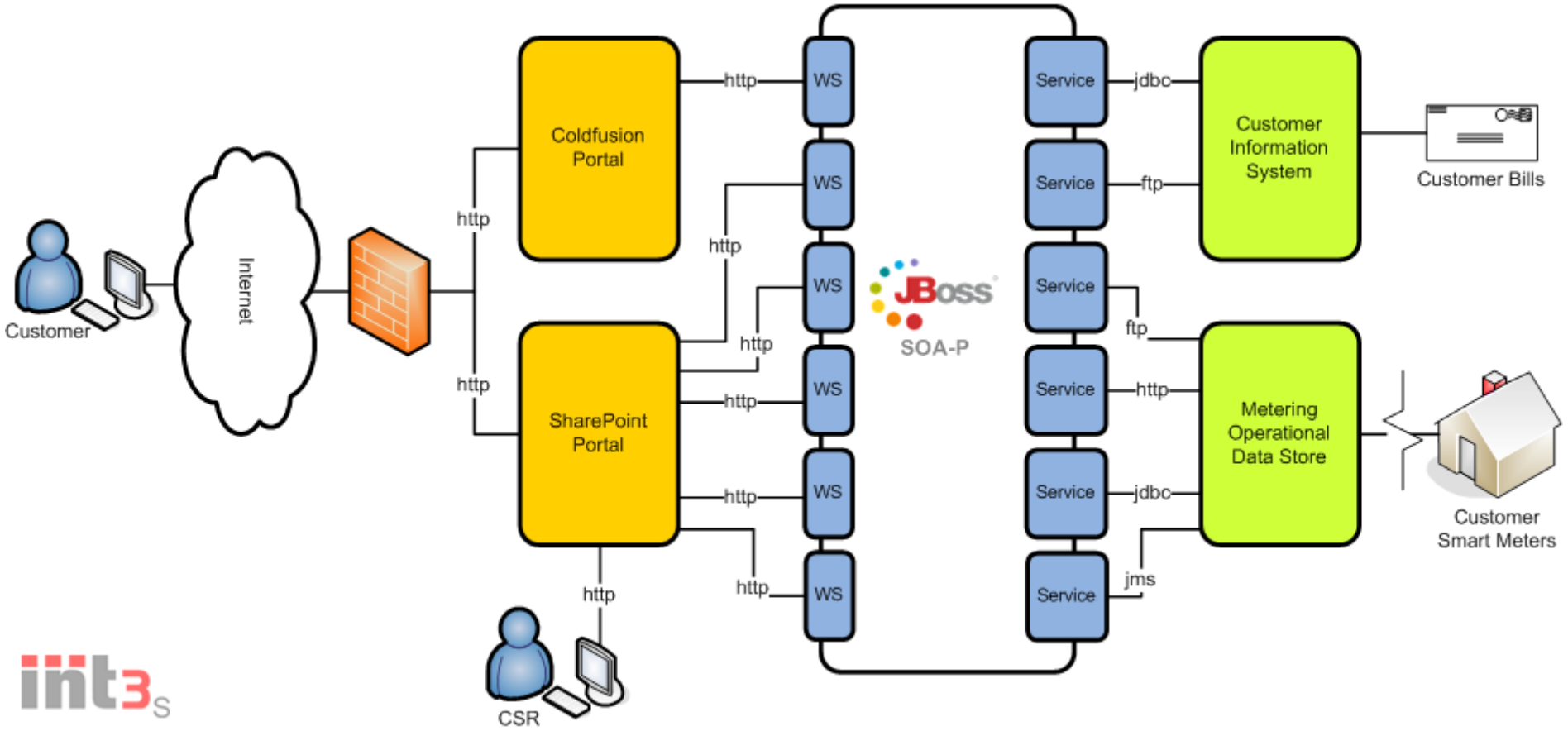
Toronto Hydro Smart Meter Project (cont)

Project represents significant investment in new IT infrastructure in order to handle over 700x more metering data volume.

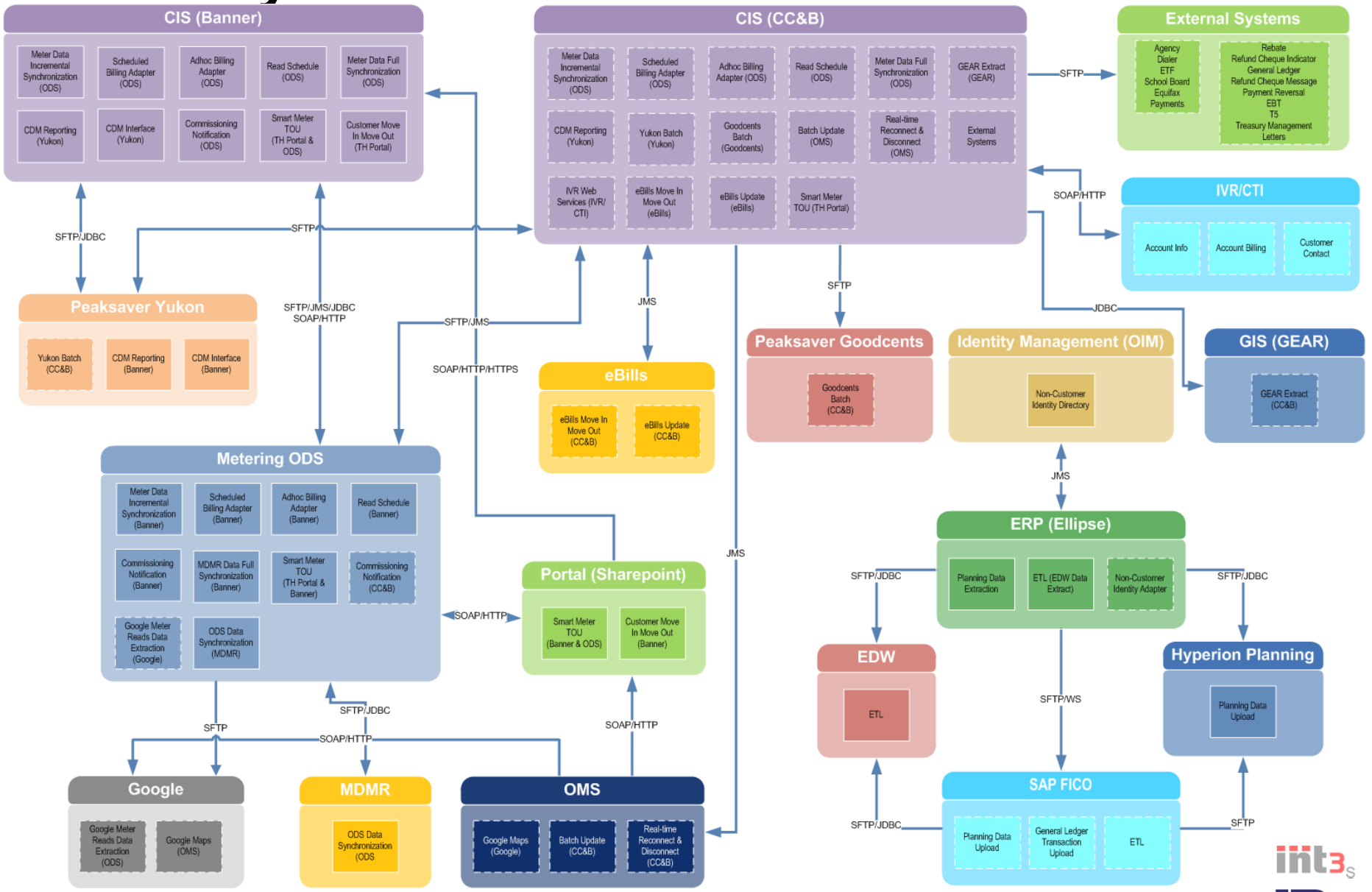
Data flow between systems was identified as a major challenge especially considering other IT initiatives focused on modernizing applications.

Risk mitigation strategy: SOA through an ESB with loosely coupled application integration

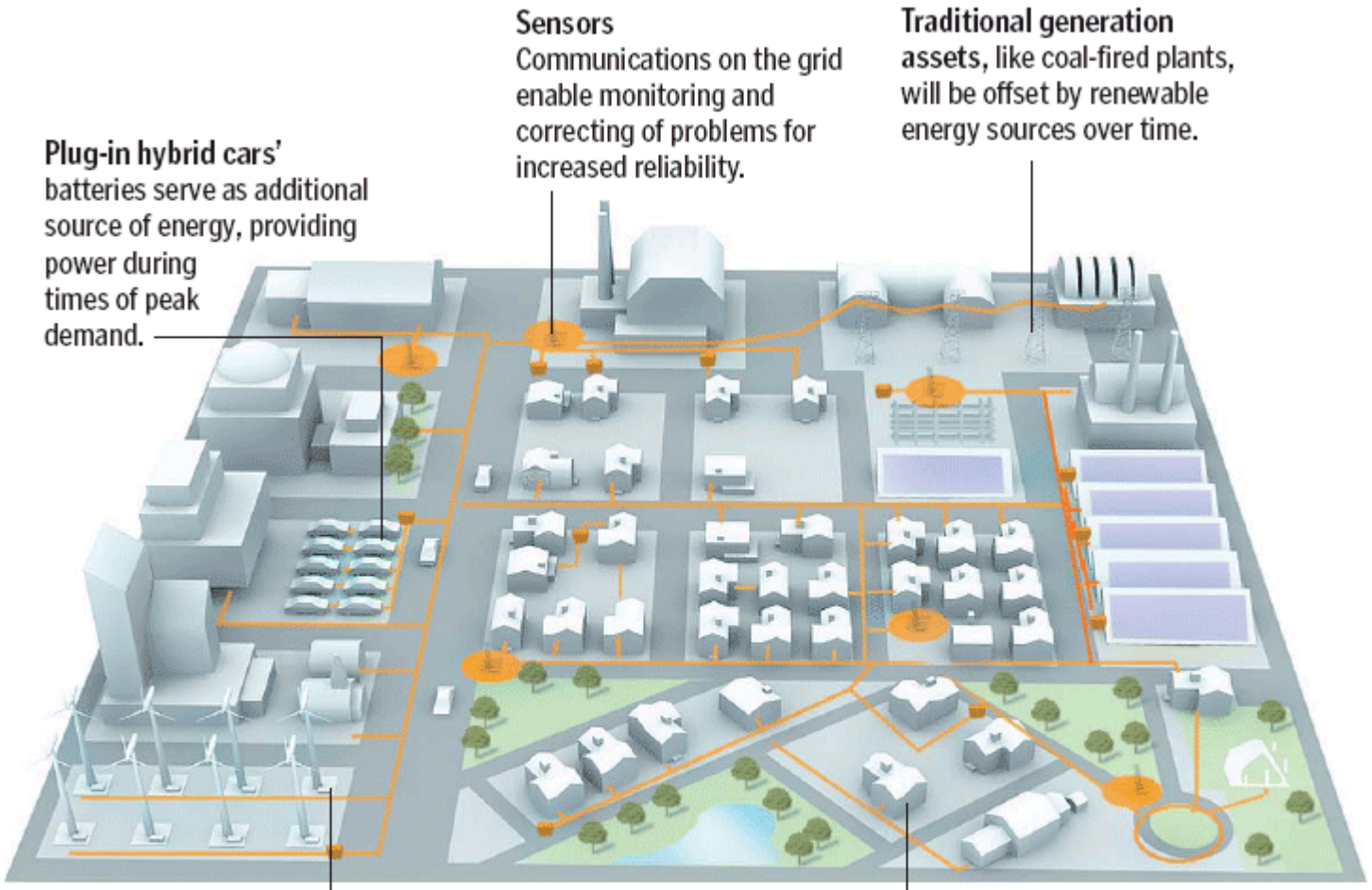
Toronto Hydro Smart Meter Solution Architecture



Toronto Hydro: Current State of SOA



What's next: Smart Grid



Why is SOA critical to Smart Grid?

Smart Grid is as much about energy transmission/distribution capabilities as data interchange

Electric grids will extend beyond generation, transmission and distribution: micro-grids surrounding homes and businesses

Direction of the industry is to shift from proprietary protocols to Internet Protocol for data integration

QUESTIONS?

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