## UNITE 2008 Technology Conference

### User Case Studies - Building Real Time Applications with Web Services

F. Guy Bonney MGS, Inc.

Session MCP4045 2:45pm – 3:45pm Monday, October 20, 2008



## MGS, Inc.

- Software Engineering, Product Development & Professional Services firm founded in 1986
- We provide products and services to solve business problems:
  - Software Engineering Services
  - Professional Services
    - Management Support Services
    - Consulting and Technical Services
    - Application Development Services
  - Product Development
    - Performance/Capacity Management
    - Web Services
    - MCP Terminal/Client Access with encryption
    - MCP service utilities



# Web Services - Case Studies

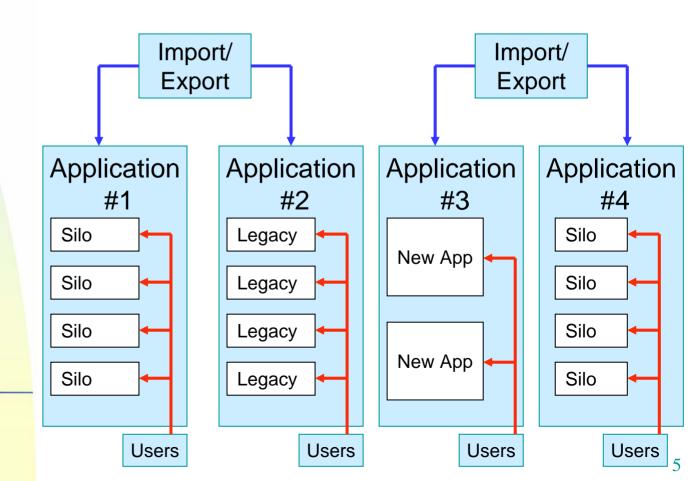
- In this presentation you will learn about ...
  - Services Oriented Architecture based on Web Services
  - MCP systems participation in an SOA
  - Examples of actual solutions
    - Customer examples of MCP based Web Services servers
    - Customer examples of MCP applications accessing data from external Web Services

# **Services Oriented Architecture**

- Services Oriented Architecture (SOA)
  - Componentize new Enterprise business
     functions
  - Encapsulate existing business functions for easier access
  - IT Functionality now available as a set of objects that can be mixed and matched as needed
  - Application development done by architecting service consumers
  - Avoids tying a user to a specific application implementation
  - Avoids tying data to a specific application implementation

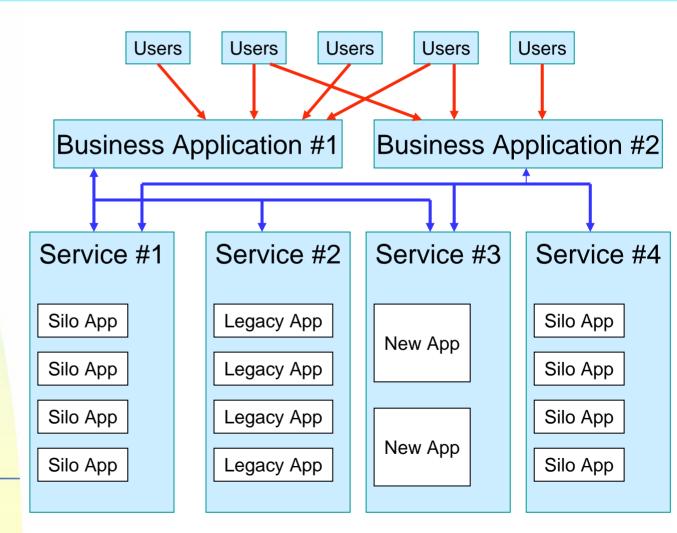
## **Services Oriented Architecture**

### Traditional IT Architecture

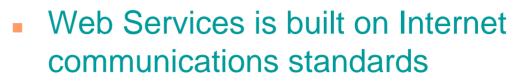




## **Services Oriented Architecture**



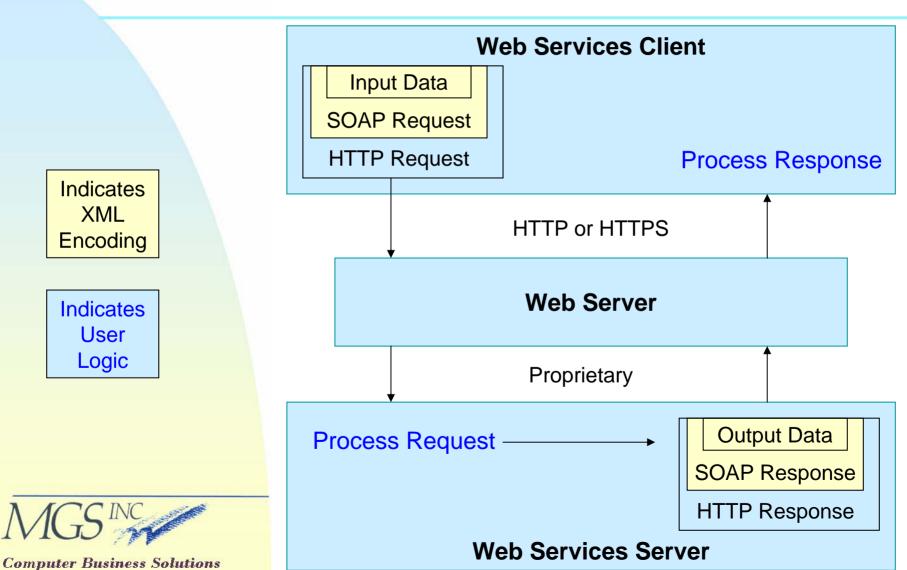
# Web Services - Technology



- **HTTP** HyperText Transfer Protocol
- SOAP protocol
- XML eXtensible Markup Language
- Server and Client communication done by generated/managed code synchronized through the WSDL
  - Web Services Description Language
- Web service is addressed with the server's URI obtained from the WSDL



# Web Services - Technology



# Web Services - MCP

### MCP Web Services Server

- Allow MCP functionality to be easily accessed from the rest of the Enterprise
- Can be done with minimal/no MCP application code changes
- Extends value of corporate investment in MCP environment
- Allows MCP applications to directly participate in a Service Oriented Architecture (SOA)

### MCP Web Services Client

• Web Services Client interface allows MCP environment to use existing Enterprise SOA functionality



# Web Services - MCP Server

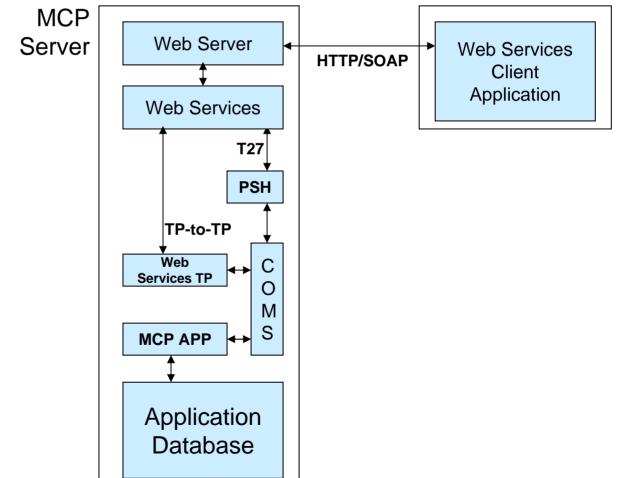
### MCP Based Web Service

- Web Service Server runs under MCP control
- Routes to MCP App via COMS station or COMS TP-to-TP
- T27 interface (COMS station) requires no changes to existing code
- TP-to-TP is more efficient (no screen scraping), allows for larger data interchange, fosters transaction recombination



# Web Services - MCP Server

### MCP Based Web Service





# Web Services - MCP Client

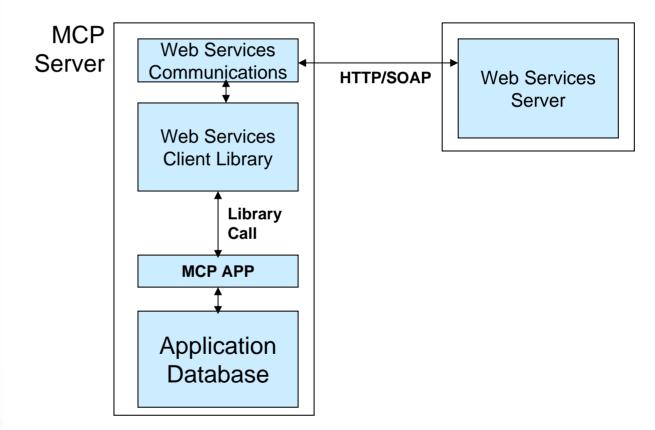
### MCP Based WS Client

- Allows MCP applications to make a Web Services call on another server
- MCP Application does a simple library call to make the outbound WS Client call



# Web Services - MCP Client

### MCP Based WS Client





# Web Services – Case Studies

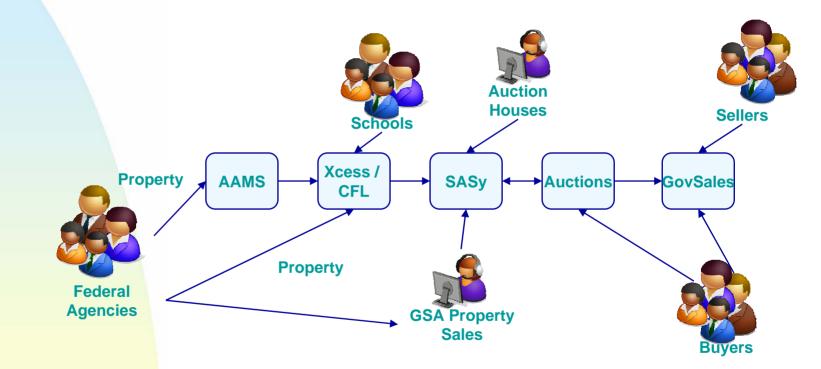
- GSA Federal Acquisition Service
  - Property Disposal
  - Transportation
- Harmon
  - Auto Claim Entry System
  - On-Line Invoicing
- Global Companies
  - Product Distribution Data
  - Trade Orders
- IRD NZ
  - Call Out Adapter



## **GSA** – Federal Acquisition Service

- Property Disposal Solutions
  - Helps GSA and other Federal agencies dispose of property that is no longer needed
  - Property can be reused by other Federal agencies, State agencies, schools, etc or public auction
  - Property can be entered and inventory accessed via Web Services









**Computer Business Solutions** 

### Components

- AAMS: Federal agency internal screening and transfer of property for reuse
- GSAXcess: Federal agency external screening and transfer of property for reuse by federal agencies, state agencies, and qualifying organizations
- Computers for Learning: Agencies can donate excess computer equipment to schools
- Sales Automation System: GSA sells surplus property to the public via internet auction, sealed bid, live sales, etc...
- GSA Auctions: Internet auction web site used to sell surplus government property
- GovSales: A portal that lists all of the surplus personal property for sale by the government



#### Vehicle Detail

Vehicle Details (1995HUMMER H1 4 PASSENGER WAGON DSL )

« Back to Search Results



#### Additional Images



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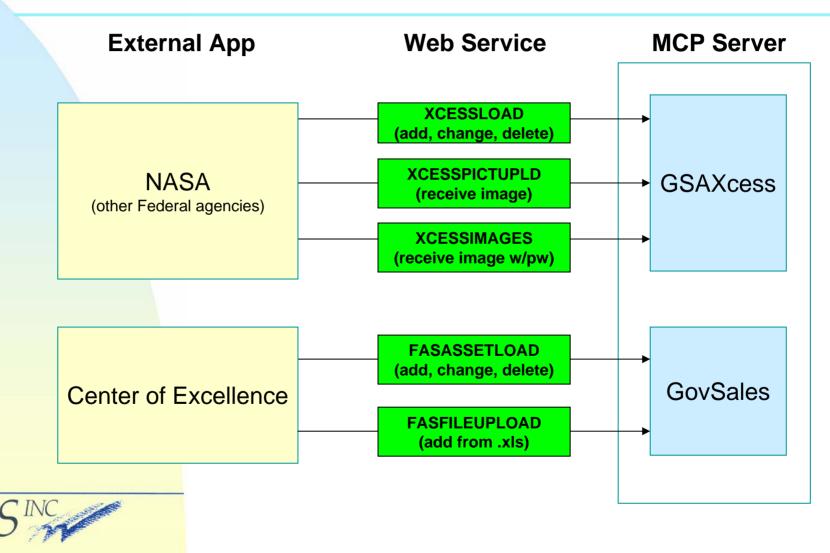


**Computer Business Solutions** 

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## **GSA** – Transportation

### Components

- TMSS: A facility for booking freight shipments for the federal government.
- FMVRS: The new federal government DMV database, expected to track over 100,000 vehicles
- FLEET: Application for handling vehicles leased by the government agencies



#### **GSA** – Transportation **External App Web Service MCP Server** PC\*Miler PCMII FRWS **TMSS** (commercial transportation routing) **VRSLOADDAT FMVRS Java Server** (registration) **FMVRS** Browser (Federal Agency access) LOADCARDDOC (doc/pic upload) ROADSFLEETSERVICE FLEET (vehicle ordering) ROADS (Windows/JBOSS) **GET CONTRACT NO** ►FSSONLINE



## Harmon - WS Applications

### MCP Web Services Support

- ACES (Auto Claim Entry System)
  - order Entry
  - VB Client
  - Converted from T27 screen scraping
- On-Line Invoicing
  - Originally no validation, many rejects
  - MCP web services provided validation data



## Harmon - ACES

MGS

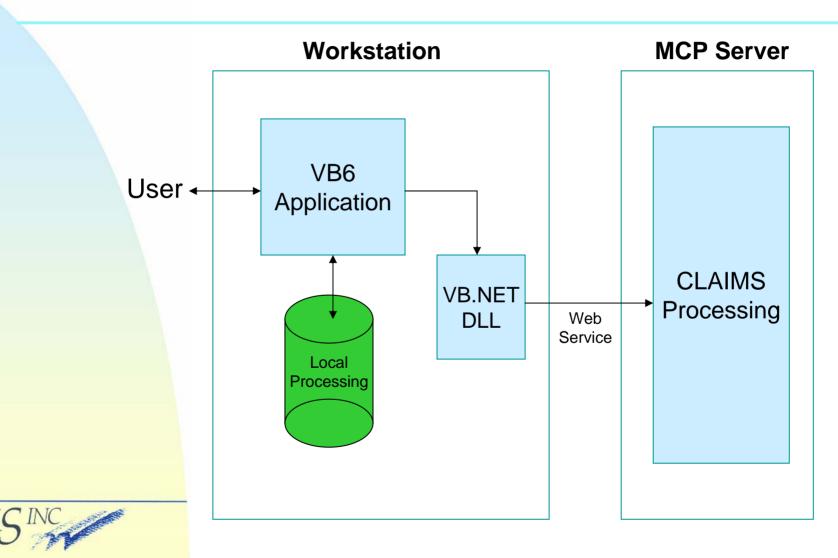
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## Harmon - ACES

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### Harmon - ACES

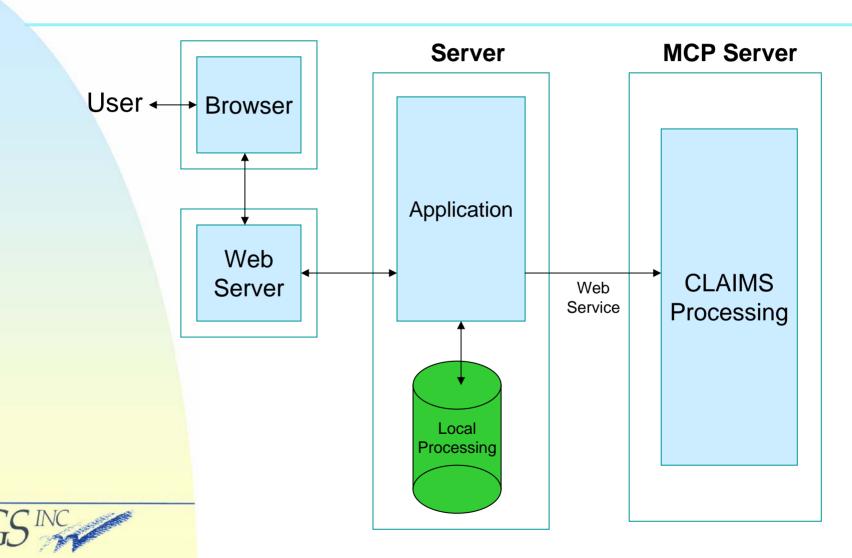


### Harmon - On-line Invoicing

Proprietary Screen shots unavailable at this time



## Harmon - On-line Invoicing



# **Global - WS Applications**

### Product Distribution Data

- Product availability
- Terminal schedules
- Other information

### Trade Orders

- Windows based order management and fulfillment
- Account and financial validation



### **Global - Product Distribution**

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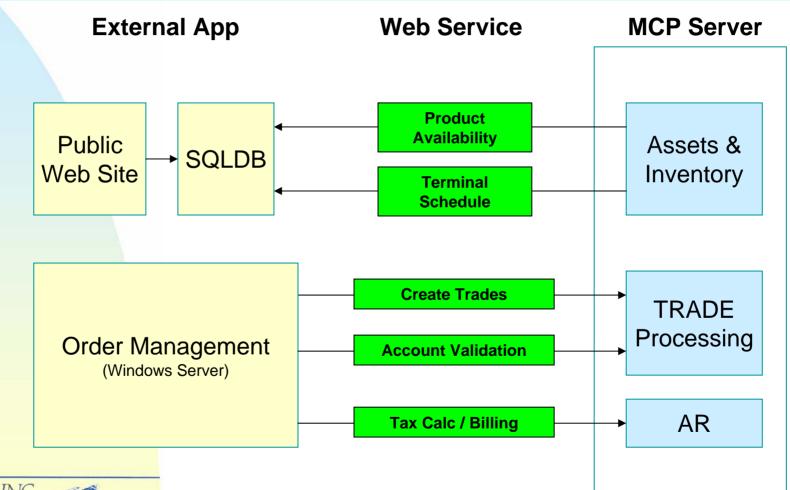
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> 2007 Annual Review > Home		-		



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# **Global – WS Applications**



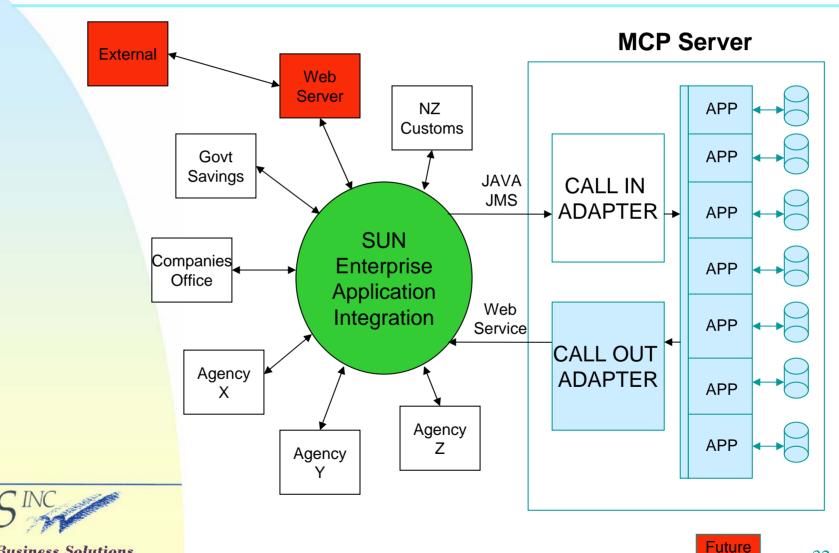


# IRD NZ - Call Out Adapter

- Integration to other Government Computer Systems
  - COBOL library interface to COA
  - COA connects to SUN Enterprise Application Integration (EAI) product
  - EAI acts as an inter-system hub



## IRD NZ - Call Out Adapter



# Some Lessons Learned

- WSDL and SOAP have many structural options – not all are implemented by all Web Services development and service environments
- A good XML editor is real handy
- "Modern" data structures don't always map easily to COBOL data structures
- Web Services is not usually a good method for processing large batches of transaction data in a single call
- If you build it, they may not come... (have a business case for a web service)
- Web Services really are easy to use



# **Additional Questions?**

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