RESPONSESYSTEMS

# Web Services from CA Gen

## Relevance in a Microservices world

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# Who we are and what we do

**Application Modernization**
- Migration into CA Gen
- Platform switch with CA Gen
- Web and Mobile delivery

**CA Gen Upgrades**
- Upgrades to CA Gen
- All platforms, all versions
- Extensive experience

**CA Gen Development**
- Development teams
- Onsite CA Gen resources
- Offsite CA Gen development

**CA Gen Consulting**
- Performance tuning
- Technical configuration
- Architecture and Processes

**Two companies, separate brands**
Common ownership and control

**CA Gen services** (FACET)
- ❑ Application modernisation
- ❑ Australian private company
- ❑ Established 2002

RESPONSESYSTEMS

**CA Gen productivity tools**
- ❑ APM and Web Service tools
- ❑ UK private company
- ❑ Established '96, acquired '07

- ❑ Global CA Gen services partner
- ❑ Global CA Product reseller
- ❑ Technology partner

ca technologies

**Web Services GENius**
- CICS web services for CA Gen mainframe applications

**APMConnect**
- CA Gen application monitoring

**Upgrade Console**
- Automation for accelerating CA Gen upgrades

**QA Console**
- Automated QA for CA Gen – Accelerates DevOps

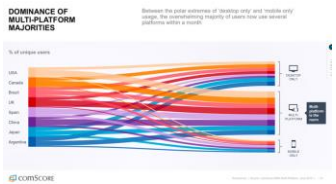
**Access Gen**
- CA Gen developer productivity acceleration

# What is driving change in Enterprise IT

Digital disruption

Cloud platforms

Multi-channel




DevOps

# Cloud platforms

## Commoditisation

- Competition goes up
- Price goes down
- Complexity goes down

## Pricing

- Usage-based
- Instantly elastic

## Challenges for

- Application scaling
- Organisational security
- Vendor-based hardware.

# DevOps

## Rapid and repeatable

- Quality baked in
- Automation based
- Scalable and scoped
- Service “ownership”

## The Build-Run anti-pattern

- Connects Dev and Ops
- Requires collaboration

## Conway’s Law

- Structural change
- Mindset change.

# A multi-channel world

**DOMINANCE OF MULTI-PLATFORM MAJORITIES**

Between the polar extremes of 'desktop only' and 'mobile only' usage, the overwhelming majority of users now use several platforms within a month

## It's all about mobile

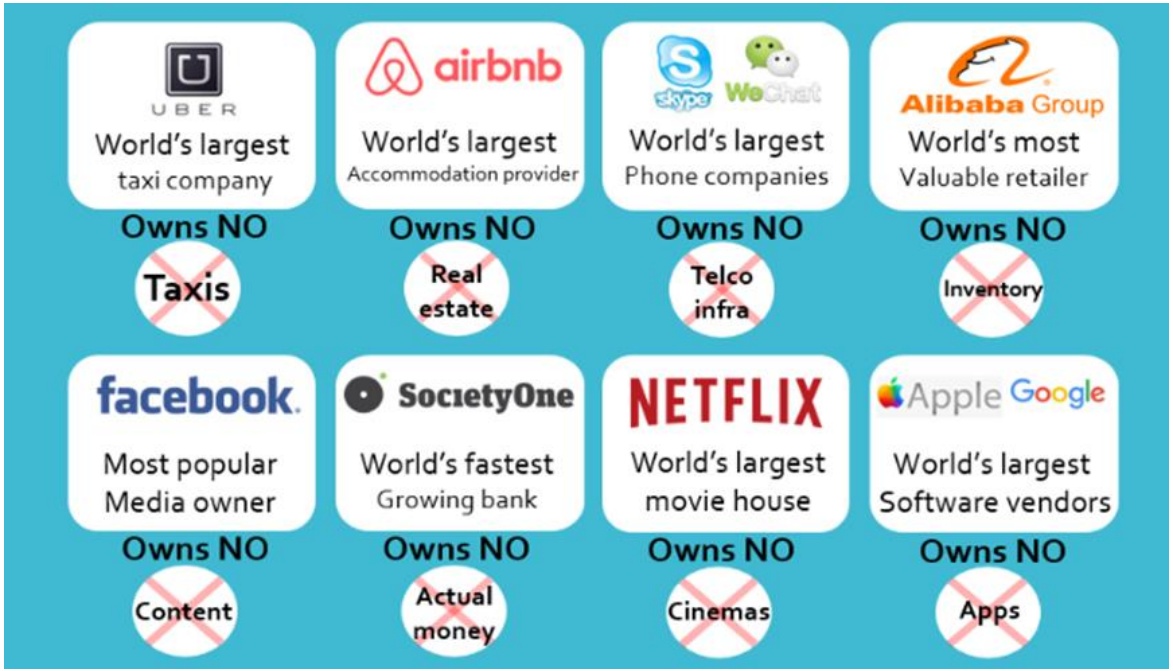
- Majority of internet
- Growing since 2013
- Emerging economies ++

## Oh wait, no it's not!

- Desktops haven't gone
- They're here to stay
- Along with tablets
- … and mobiles

## A multi-channel world.

# Digital disruption




## All the disrupters

- Little infrastructure
- Reactive and rapid
- **Not** capital-intensive

## All the disrupted

- Significant infrastructure
- Organic, cyclical change
- Significantly invested

## Sound familiar?

# Where does that leave CA Gen applications?

**They're legacy systems!**

Slow to change

Locked in workflow

Testing is impossible

Monolithic applications

**They're huge assets!**

Encapsulate our business

Safeguard our data

Stable and reliable

Proven implementation.

Customers use **Microservices Architecture** to leverage their assets.

# Microservice architecture

## Microservice architecture has evolved from SOA

- Finer grained services
- Messaging enabled
- Lightweight communications mechanisms (typically http resource APIs)
- Autonomously developed and independently deployable
- Help drive application coupling DOWN, and drive application cohesion UP

## Driven…. by the need to deliver more features, more quickly

- New application technologies and platforms lend themselves to this

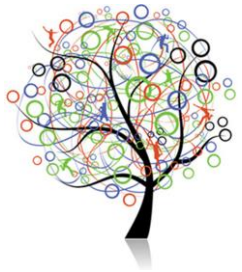
## So applying Microservice architecture patterns to monolithic applications

- Enables leveraging their proven functionality
- Requires exposing those granular function points easily, quickly and seamlessly.

# Web Services GENius

## Designed for use with large existing CA Gen applications

- Pick any action block or Pstep or Process
- Define and customize it's external service interface
- Expose it as a Web Service – either RESTful or SOAP… or both



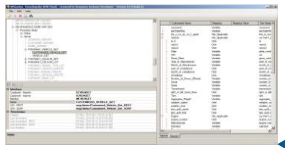
## But, remembering the typical constraints

- Change and the testing implications is increasingly what "kills us"
- We need to work with (lots) of other application technologies
- The Consumer(s) of these Microservices are likely *not* to be in CA Gen

## This is what Web Service GENius does.

# Web Services GENius – Solution architecture

**Developer workstation**



Define Web Services from any CAB/Pstep in the HE/CSE

HE/CSE WSG DB

**z/OS Mainframe**

**Generation**

- Cobol wrapper
- Import/Export Copybooks
- Compile&link Cobol Wrapper
- Build REST Service: JSON Schema+
- Build SOAP Services: WSDL

**Consumer**

Consuming application

WSDL

JSON Schema

**CICS**

CICS Web (Pipeline)

SOAP

REST

**Cobol Wrapper**

"Exposed" CAB

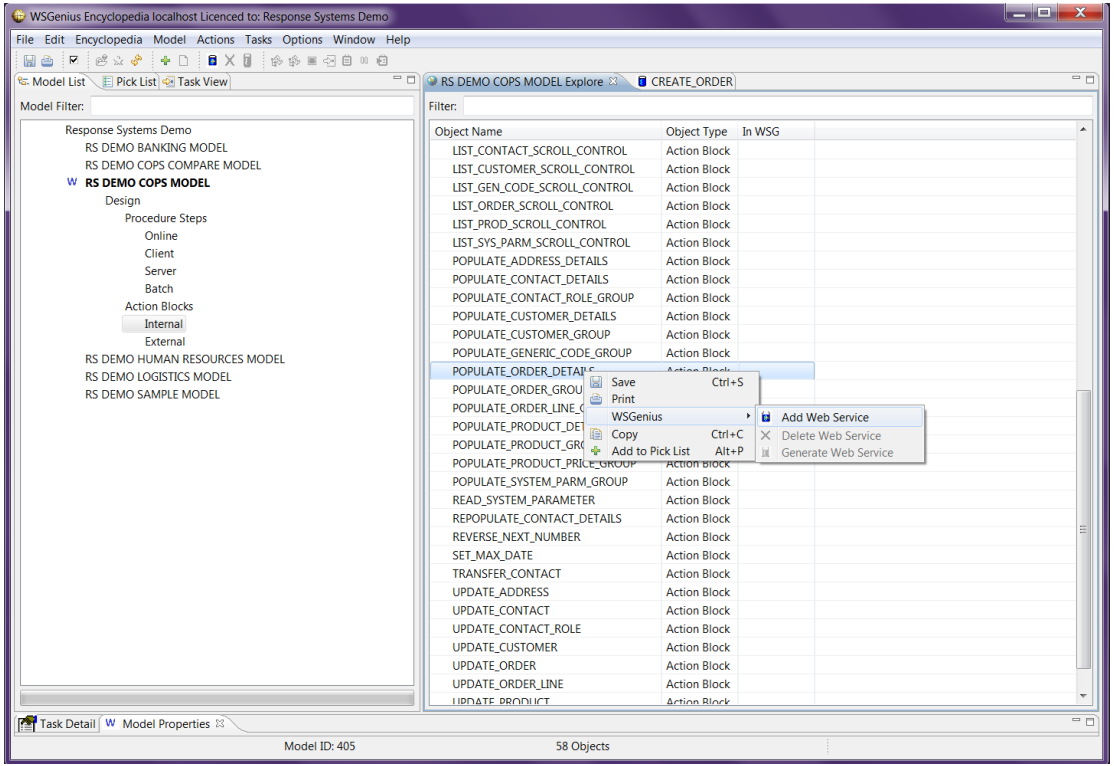
CAB

CAB

CAB

CAB

# Creating Web Services – a new interface

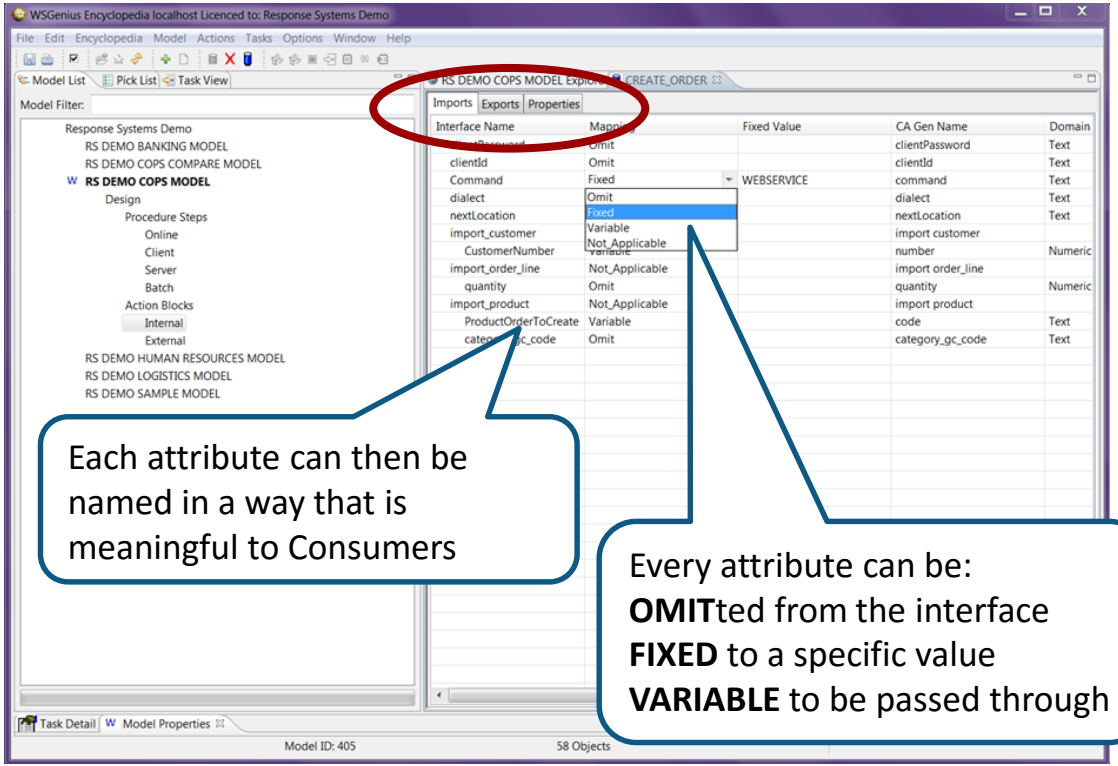



## Create from any candidate

- Any action block
- Any Procedure step
- Supports multiple services

## Creation is a simple click.

# Creating Web Services – Imports – the Request



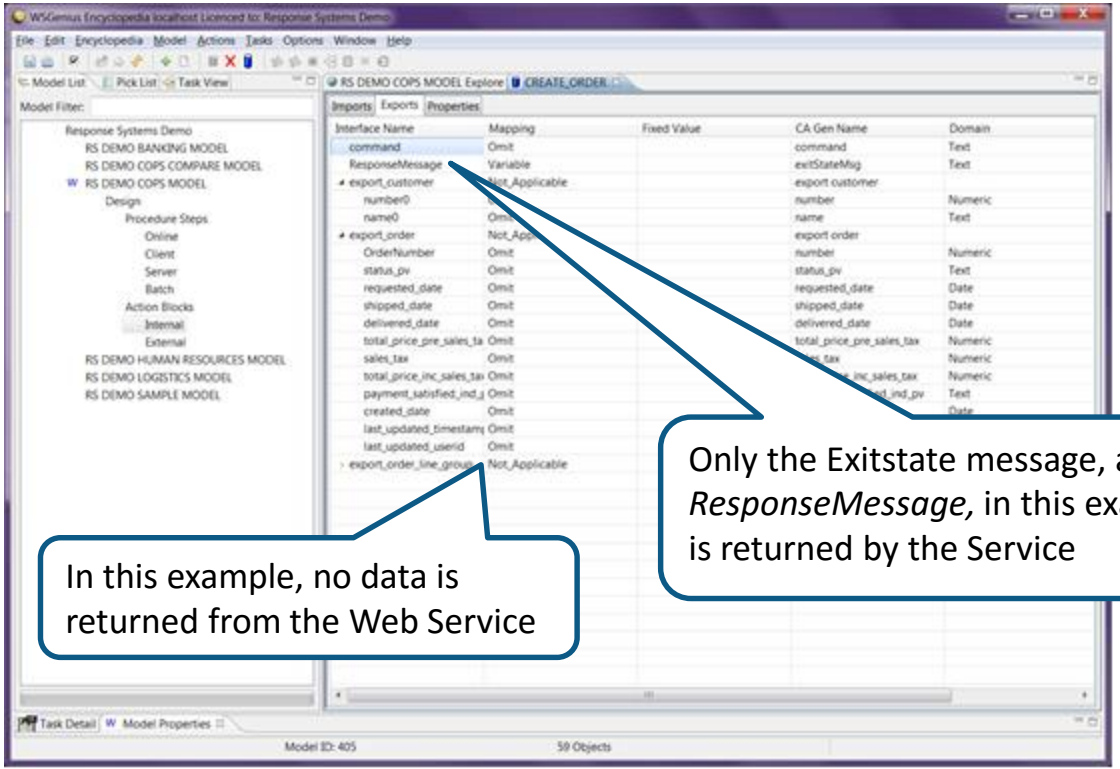

## Every interface has 3 parts

- The imports (Request)
- The exports (Response)
- The Web Service properties

## Interface definitions

- Fully configurable
- Exclude, over-ride, or pass through each attribute
- Name in a meaningful way.

# Creating Web Services – Exports – the Response




## Interface definitions

- Fully configurable
- Exclude, over-ride, or pass through each attribute
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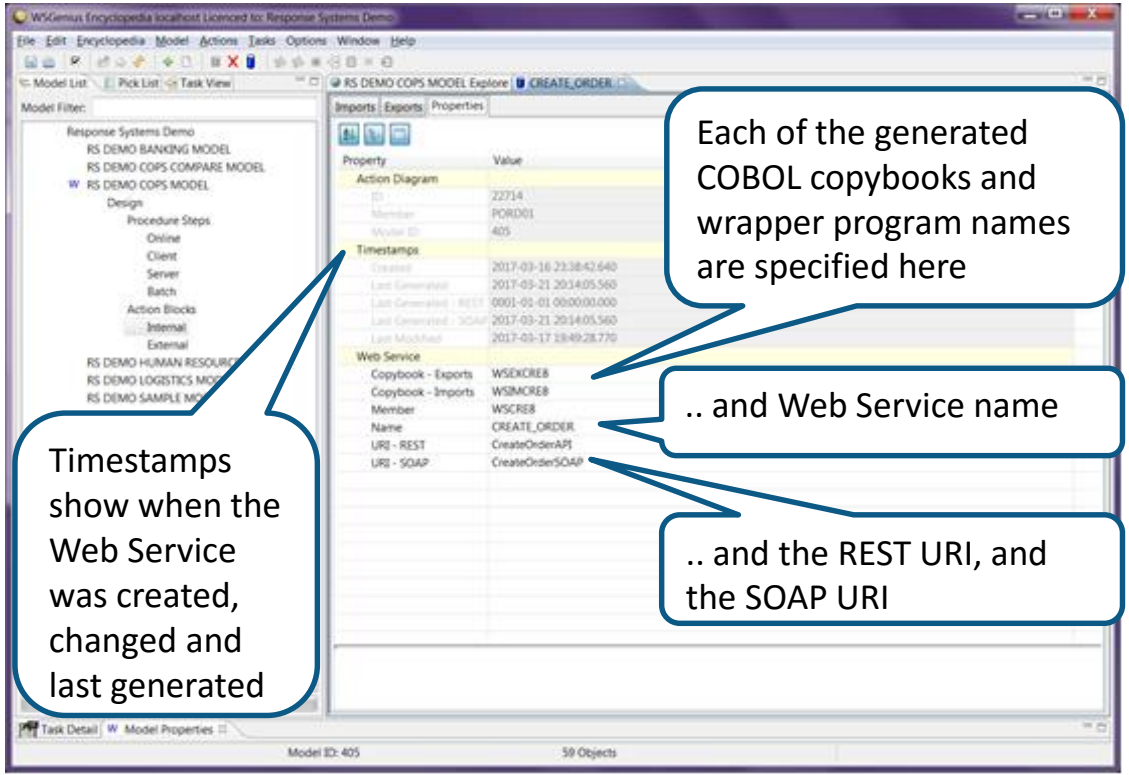
# Creating Web Services – Properties – URI



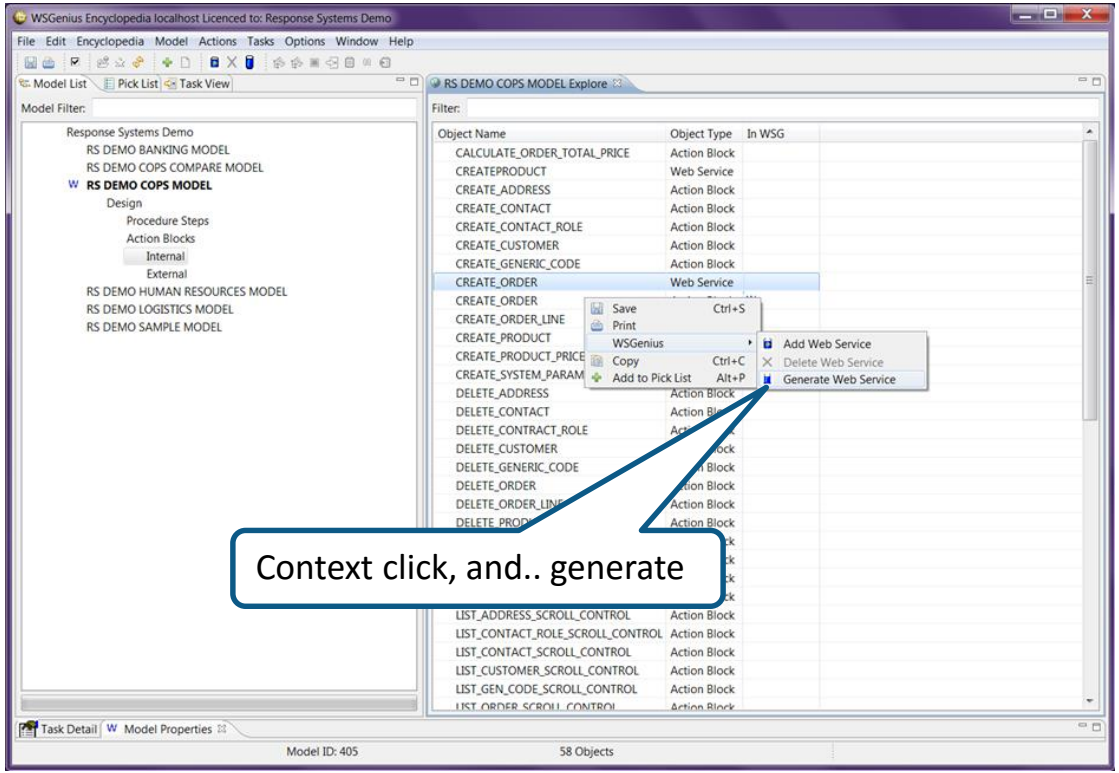

## Properties show information

- About creation time
- About modification time
- When last generated

## They also allow configuration

- The interface name
- The REST URI, and
- The SOAP URI.

# Generating Web Services




## Simple click-to-generate

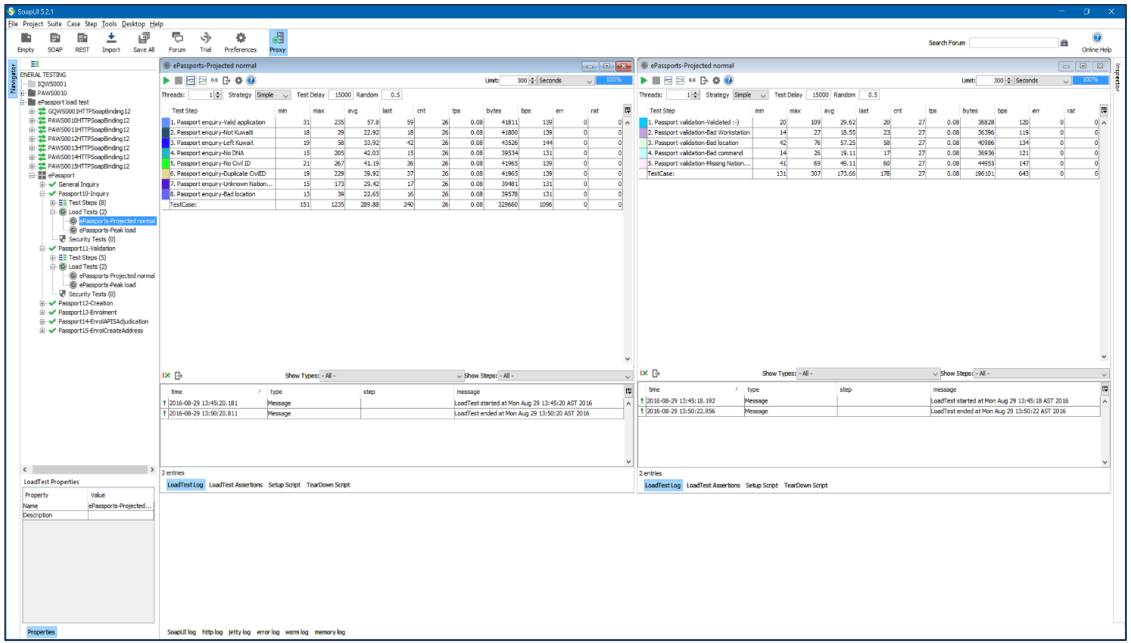
- Generate a single Web Service
- Generate multiple Services
- Creates your WS interface

## Creates all artefacts

## Remote file ready to upload

- Contains all Web Services
- Contains all control info
- Ready to build and deploy.

# Testing Web Services



## Many tools available

- Free and flexible
- Focused on Web Services
- Both REST and SOAP
- Rapidly evolving
- Easy to use

## SoapUI from Smartbear

- Functional
- Load and Performance
- Brilliant starting point!

# Web Services GENius at Border Force

## Australian Border Force is building 21st century capability for their workforce

- Access to the necessary information at the required time requires mobile delivery
- Lots of existing application capability and function exists – but locked in monolithic apps
- Needing to simplify infrastructure, not add to it, and categorically requiring RESTful APIs

## By using *Web Services GENius,* Border Force are able to

1. Avoid deploying new layers of hardware or middleware infrastructure
2. Avoid requiring changes to existing, proven and stable, CA Gen applications
3. Avoid training staff in new technologies and platforms to deliver Web Services
4. Quickly deploy RESTful Web Services from any existing application function

## Key benefits to Border Force

✓ Accelerate the rollout of new mobile capability for frontline Customs officers.

# Web Services GENius at MOI

## Ministry of Interior needed to expose services for integration and consumption

- Web Services were being manually created via four different teams and products
- Dozens of new Web Services required for inter-agency integration and emerging mobile

## By using *Web Services GENius,* Ministry of Interior (MOI) have been able to

1. Quickly and easily create new Web Services in hours rather than months
2. Deploy SOAP Web Services now, and RESTful Web Services in the future
3. Define, test and deliver Web Services solely from their CA Gen development team

## Key benefits to MOI

- ✓ Reduced delivery time from months to hours
- ✓ Definition, testing and delivery all from the team that understands the applications
- ✓ Accelerated delivery of new business integration and eServices for the Government.

# Key benefits of Web Services GENius

## Publish CICS Web Services directly from CA Gen mainframe applications

- New and unique capability to deploy SOAP or RESTful Web Services on Gen applications
- Create Web Services from any Pstep or CAB **without change** to the Gen applications

## Web Services GENius simplifies your application delivery

- Exploits TCP/IP and IBM's CICS Web Services infrastructure
- No new layers of middleware  or hardware – leverage what you've got
- Insulates developers from underlying technologies to accelerate Web Service delivery

## No need for re-training development teams or new skill sets

- Seamless integration with CA Gen and IBM technologies
- Existing development teams can quickly deploy new Web Services.

# More information

## For further information

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## To discuss a demonstration or software trial

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