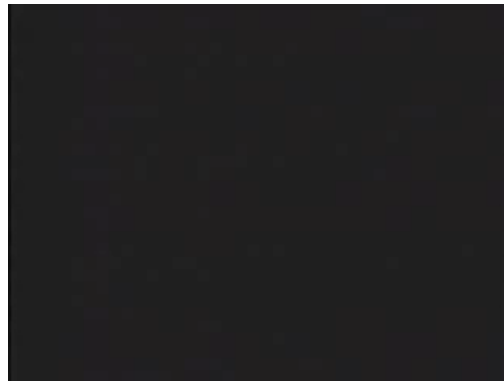


Introducing Orion Health Limited

HEALTH INNOVATORS



Capital Health EHR Video



Harish Panchal – Business Development Director
harish@orionhealth.com

HEALTH INNOVATORS



Electronic Health Record – EHR & Messaging Standards



27th May 2006

Introductions

- Mr. Harish Panchal
Business Development Director – Asia Pacific
- Dr. Sanji De Sylva – MD, DipBusAdmin
Clinical Director – Asia Pacific
- Ms. Mako Cho
Customer Relations – Japan

HEALTH INNOVATORS



Agenda

- Company Overview
- Case Study – Australia – NSW State – EHR Solution
- Case Study – Large Scale Rhapsody Solutions
- Proposed Solution for the Super Dolphin
- Conclusions

HEALTH INNOVATORS



About Orion Health

- New Zealand's largest health software company
- Customers in 20 countries
- Head office in Auckland, New Zealand
- Presence in Australia, USA, Canada, UK and Japan
- 100% New Zealand Owned Company

HEALTH INNOVATORS



Orion Solutions

- Healthcare Integration – Interface Engine
- Integrated Care & Chronic Care - Hospital, Medical Center, Doctor, Patient
- Facility Electronic Medical Records (EMR)
- Regional Electronic Health Records (EHR)

HEALTH INNOVATORS



Recent Large-scale Orion Projects

- Capital Health – EHR – Canada
- NSW Health e link – EHR – Australia
- CDC (Center of Disease Control) – Integration – USA
- HIMSS – HL7 Booth Interoperability – HL7 CDA Rel. 1/XML – USA
- MOH – National Immunisation Register – New Zealand

HEALTH INNOVATORS



Three Key Products

- Integration Broker
 - Rhapsody™ Integration Engine
- Medical Applications Portal
 - Concerto™
- Clinical Workflow/Process Management
 - Soprano™ Clinical Workflow Suite



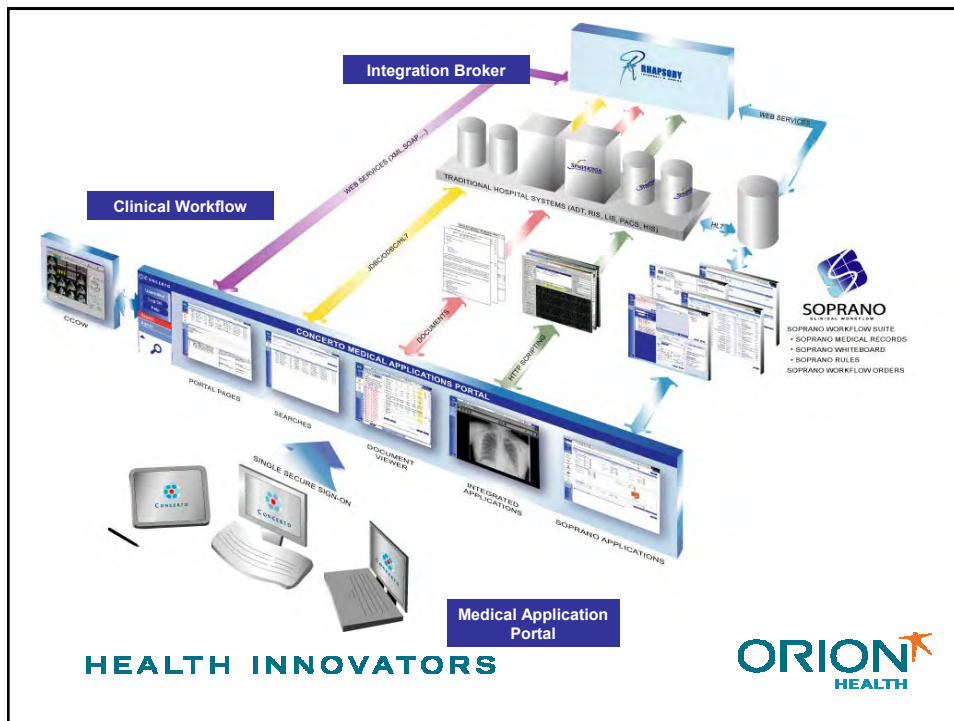
CONCERTO



SOPRANO
CLINICAL WORKFLOW

HEALTH INNOVATORS

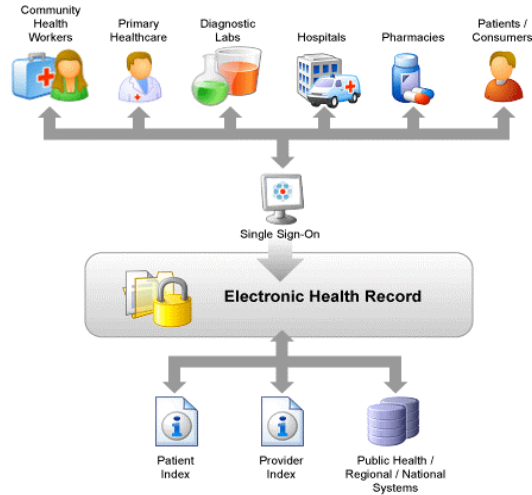
ORION
HEALTH



HEALTH INNOVATORS

ORION
HEALTH

Regional Electronic Health Records (EHR)



HEALTH INNOVATORS

ORION
HEALTH

Orion Industry Awards



2005 Rhapsody Interface Engine
Rated No#1 by KLAS in USA



2004 TUANZ – Innovation Award for Healthcare
For Soprano Workflow Engine



2003 TUANZ - Innovation Award for Healthcare
For the Rhapsody Integration Engine



2002 Technology NZ Commendation
For Innovative Technology



2001 Hi Tech Supreme Award
New Zealand IT Company Of The Year

HEALTH INNOVATORS

ORION
HEALTH

Orion Customer Awards



2005 Peninsular Health Victorian State
Innovation Award, Australia



2003 Harogate Award - Wallsall Community
Trust, UK
Healthcare IT Effectiveness Awards " Most Innovative
Use of Information Technology"

HEALTH INNOVATORS

ORION
HEALTH

health *eLink*

NSW HEALTH

ORION
HEALTH

New South Wales EHR – Australia



HEALTH INNOVATORS

ORION
HEALTH

health eLink

- Orion is implementing an Electronic Health Record (EHR) named "Health e-Link" for the state of New South Wales, Australia
- Goal: Longitudinal EHR combining information from hospital, community, and primary care systems, available statewide to authorized providers and patients
- Pilot involving 11 hospitals (3 tertiary) – Go live 2006
- Statewide rollout will encompass 6.5 million citizens and 20,000 providers

HEALTH INNOVATORS

ORION
HEALTH

health^elink **Objectives of the NSW EHR**

- Improve the quality and safety of care by providing secure access to information at the point of care. Achieved by implementing an EHR that summarizes the patient's longitudinal medical history.
- Improve service to patients and lower costs by reducing redundant administration, duplicate services and diagnostic tests.
- Encourage greater patient involvement in their own or their children's health care management – by having access to their own record.

HEALTH INNOVATORS

ORION^{*}
HEALTH

health^elink **Driving Factors**

- In 2000, the Department of Health in NSW identified IT as a key to improving healthcare services
- Disparate "islands" of information and a lack of integration prevented them from improving the delivery of health care
- The Solution – Statewide Electronic Health Record (*Health e link*)

HEALTH INNOVATORS

ORION^{*}
HEALTH

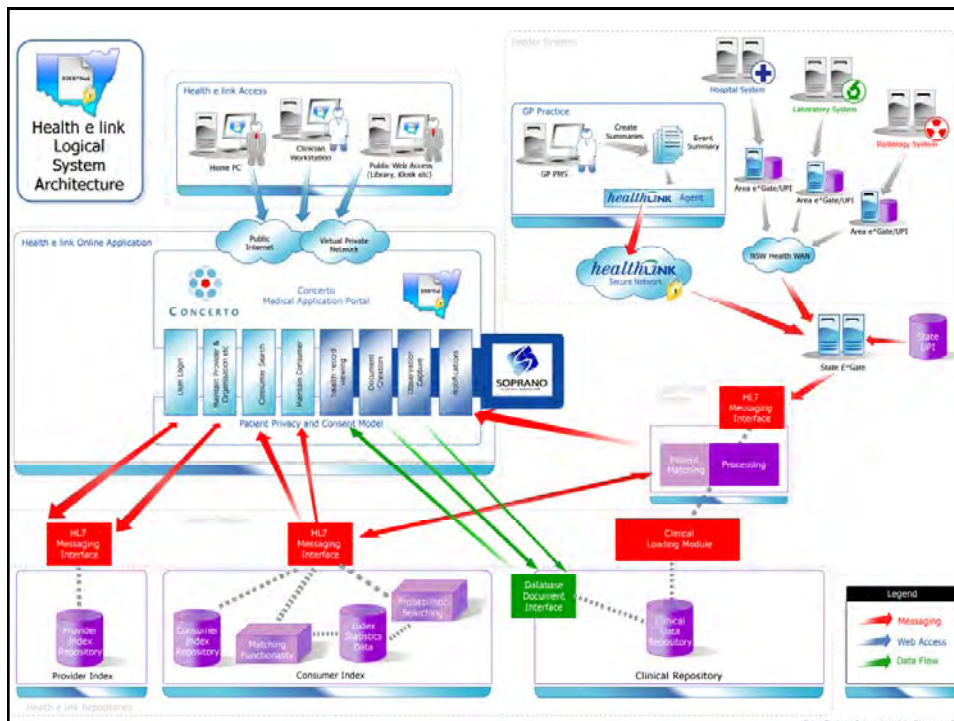
Solution

The Electronic Health Record will provide:

- A summary view of patient information at the point of care
- Information on each treatment provided for each patient
- Patient access to their own health record

Key functionality:

- Patient search
- Doctor's Patient lists
- Online data entry
- List of diagnoses
- Notifications based on abnormal test results
(e.g. blood test)

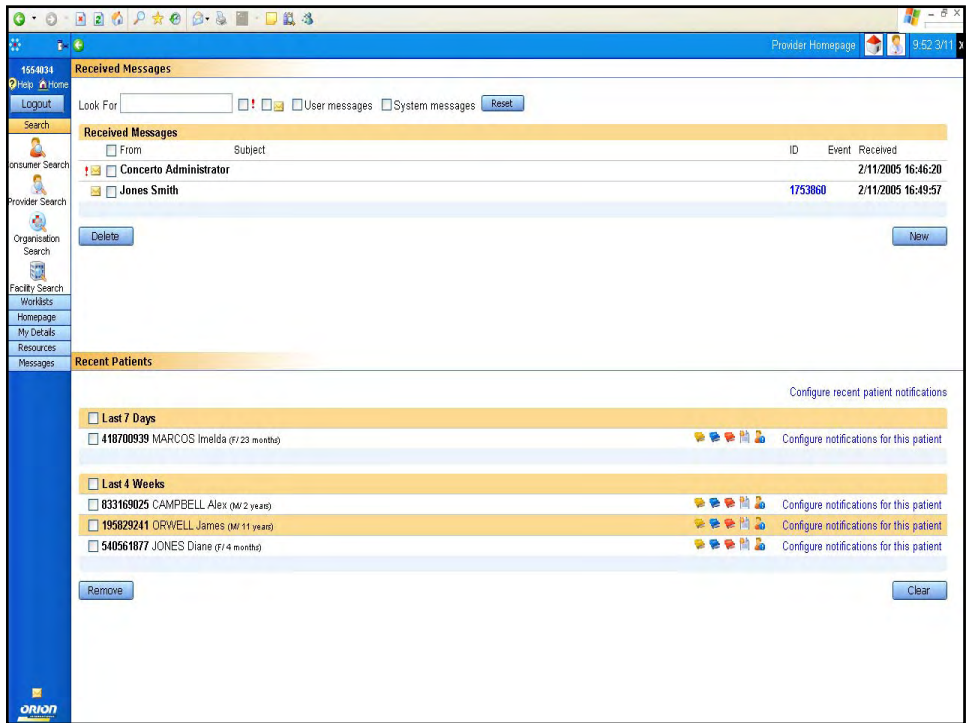
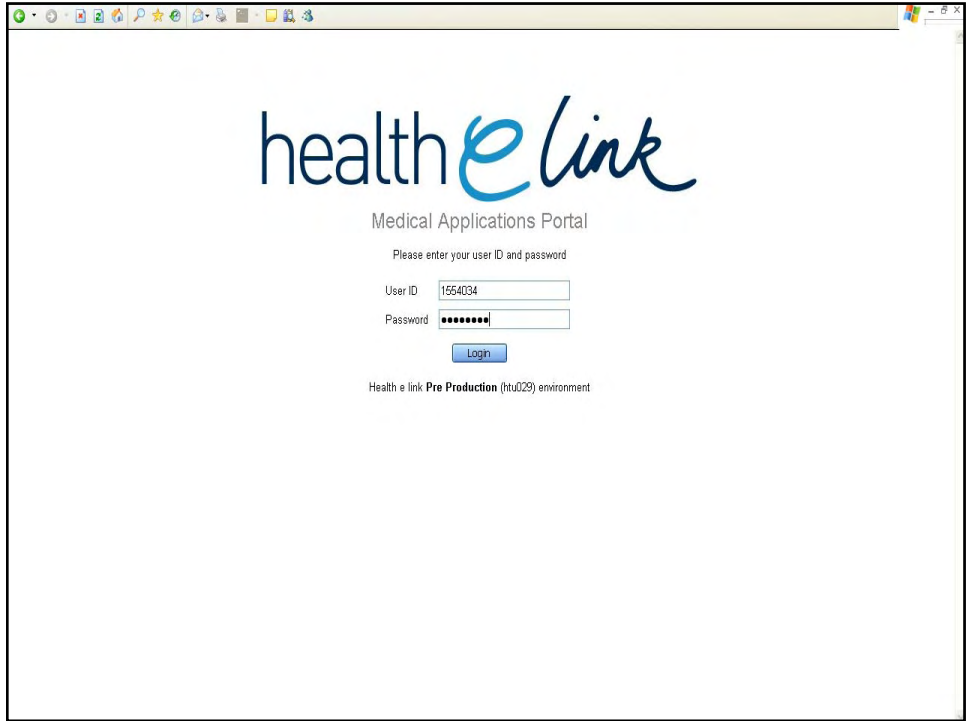


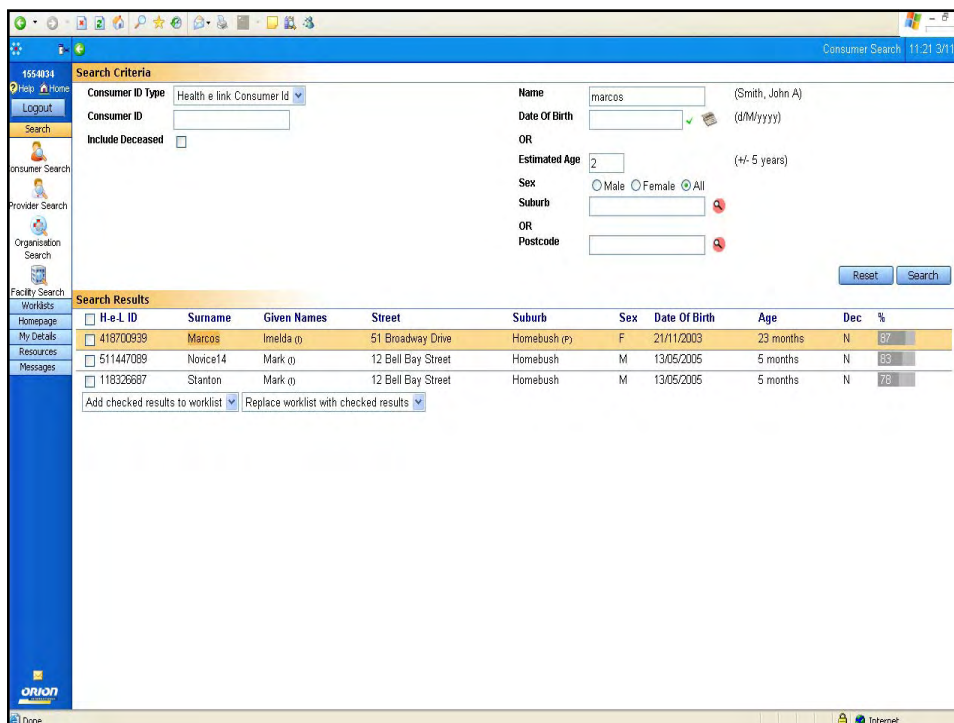
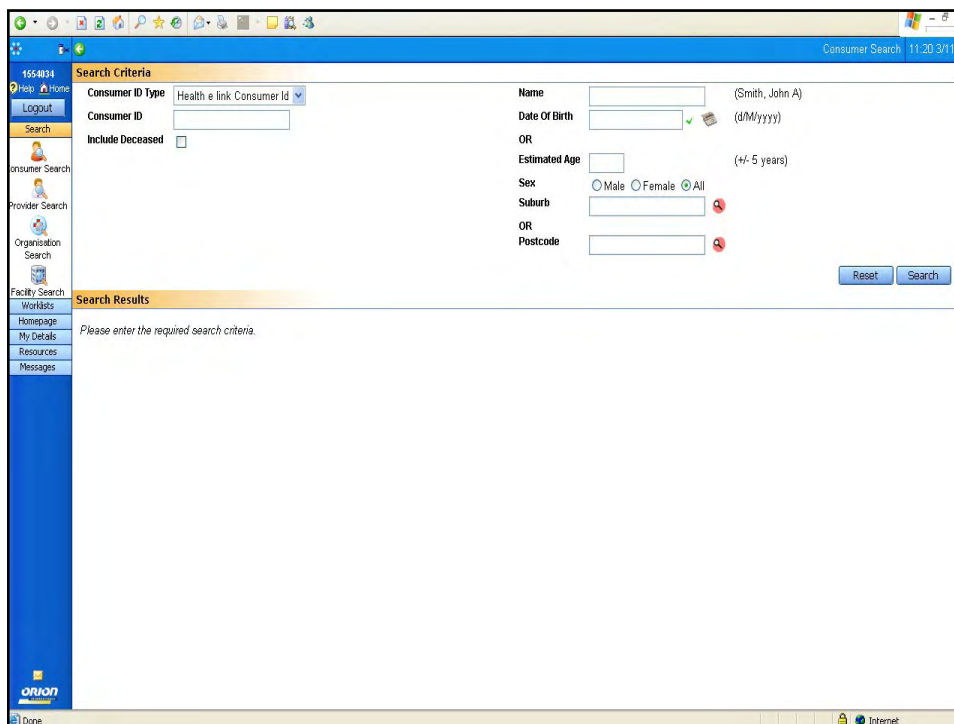
Solution Design

- Initial workshops to confirm understanding of requirements and business process
- Solution design workshops
 - Included key stakeholders (clinicians, system administrators, and NSW Health patient representatives)
 - Ensure solution contains functionality for the whole state
- Two pilot sites
 - Chronic disease population and paediatric population
 - 9000 clinical users
 - 160 000 patients registered

Screen Design

- The following screens are taken from the health e link pilot environment
- Used with permission of NSW Health
- Screenshots show customization of existing software and actual implementation
 - Doctor user scenario
 - Patient consent form
 - List of notifications set up for NSW
 - Patient Audit Report
 - Document tree customization





1554034 410700939 MARCOS Imelda (7/23 months) Main View 10:09 3/11

Showing all documents View By Category Look For Read Unread Clear

Complete Blood Examination

Latest Version **Complete Blood Examination** Messaged

Time Collected 05/02/2004 13:45 Time Received 05/02/2004 15:02
 Time Reported Placer Order Number IMP0112005
 Status Final
 Location Beggs Hospital
 Filter Order Number IMFO11996321

Test Name	Result	Units	Ref. Range	Abnormality	Status
Haemoglobin	123	g/L	115-165	Normal	Final
Red Blood Cell	4.18	E12/L	4.2-5.4	Normal	Final
Platelets Clump Volume	36.4	%	37-47	Normal	Final
Platelets Mean Volume	87.2	fL	80-96	Normal	Final
Platelets	400	E9/L	150-400	Normal	Final
White cell count	9.6	E9/L	4.0-11.0	Normal	Final
Neutrophils%	74	%		Normal	Final
Neutrophils	7100		2000-7500	Normal	Final
Lymphocytes%	13	%		Normal	Final
Lymphocytes	1300		1000-4000	Normal	Final
Monocytes%	9	%		Normal	Final
Monocytes	800		200-800	Normal	Final
Eosinophils%	4	%		Normal	Final
Eosinophils	400		40-440	Normal	Final

Report Audit History Cumulative

1554034 410700939 MARCOS Imelda (7/23 months) Main View 10:20 3/11

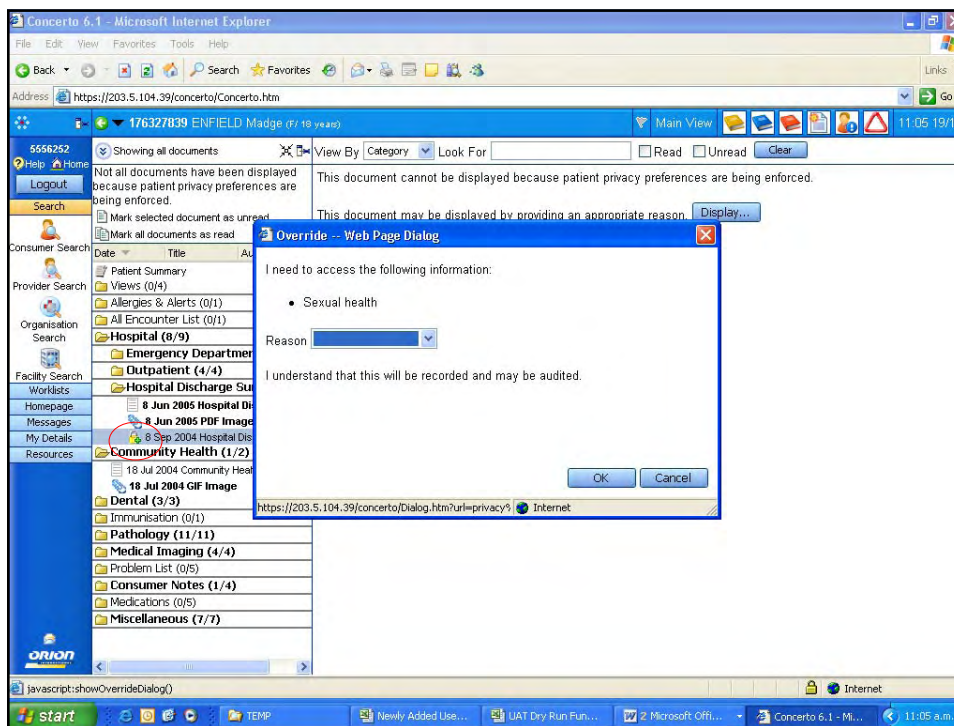
Showing all documents View By Category Look For Read Unread Clear


FBE

Reverse Order **FBE (Cumulative)** Calls 3

Test Description	1	2	3	Units	Ref. Range
Placer Order Number	IMP015U...	IMP017U...	IMP021U...		
Date/Time Collected	08/02/2005 11:30:00	05/02/2005 15:30:00	08/09/2004 11:30:00		
Date/Time Received	08/02/2005 11:30:00	05/02/2005 15:30:00	08/09/2004 11:30:00		
Date/Time Reported					
Source System	Messaged	Messaged	Messaged		
Specimen Source					
<input checked="" type="checkbox"/> Haemoglobin	152	--	123	g/L	115-165
<input type="checkbox"/> Red Blood Cell	-	70	4.18	Differ	4.2-5.4
<input type="checkbox"/> Platelets Clump V...	-	-	36.4	%	37-47
<input type="checkbox"/> Platelets Mean Vo...	-	-	87.2	fL	80-96
<input checked="" type="checkbox"/> Platelets	175	-	400	Differ	150-400
<input checked="" type="checkbox"/> White cell count	6.4	-	9.6	Differ	
<input type="checkbox"/> Neutrophils%	-	-	74	%	
<input type="checkbox"/> Neutrophils	-	-	7100	%	2000-7500
<input type="checkbox"/> Lymphocytes%	-	-	13	%	
<input type="checkbox"/> Lymphocytes	-	-	1300	%	1000-4000
<input type="checkbox"/> Monocytes%	-	-	9	%	
<input type="checkbox"/> Monocytes	-	-	800	%	200-800
<input type="checkbox"/> Eosinophils%	-	-	4	%	
<input type="checkbox"/> Eosinophils	-	-	400	%	40-440
<input type="checkbox"/> Clinical	-	-	Morphol...		

Select All Deselect All Report Audit History





Consent Questionnaire

Health e Link Consent Questionnaire Print

Consent Status: Opt In Partial Opt Out Full Opt Out

Reason: *

Effective Date: 01/09/2005 15:46

Name of person giving or withdrawing consent: *

Relationship to Consumer: *

Document 1 Sighted Type:

Document 1 Sighted Details:



Document 2 Sighted Type:

Document 3 Sighted Type:

Security Question: *

Answer: *

Name of person completing form: Morris Minor

Notifications

The screenshot shows a 'Subscribe to notifications' dialog box with a table of notification types and their corresponding 'Subscribe' checkboxes. A second window shows a notification email from the system regarding pathology information received for patient 415853297 (PREFECT, Ford).

Name	Service Type	Event Type	Subscribe
Consumer Has Been Discharged Following An Inpatient Visit	ADT	Discharge	<input type="checkbox"/>
Consumer Has Been Admitted as An Inpatient	ADT	Admission	<input type="checkbox"/>
Receipt of Any New Information Regarding a Consumer	Any	Any	<input type="checkbox"/>
Consumer Is Deceased	Any	Death	<input type="checkbox"/>
Information Has Been Received Following a Community Visit	REF	Community Visit	<input type="checkbox"/>
Allergy or Alert Information Has Been Received	REF	Allergy	<input type="checkbox"/>
Medication Information Has Been Received	REF	Medication	<input type="checkbox"/>
Information Has Been Received Following an ED Visit	REF	ED Discharge	<input type="checkbox"/>
An Inpatient Discharge Summary Has Been Received	REF	Hospital Discharge	<input type="checkbox"/>
Information Has Been Received Following an Outpatient Visit	REF	Outpatient Visit	<input type="checkbox"/>
Information Has Been Received Following a GP Visit	REF	GP Visit	<input type="checkbox"/>
A Pathology Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Clinical Chemistry Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Haematology Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Microbiology Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Virology Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Histology, Cytology or Anatomical Report Has Been Received	REF	Pathology	<input type="checkbox"/>
An Immunology Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Human Genetics Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Radiology Report Has Been Received	REF	Radiology	<input type="checkbox"/>
An Other Pathology Report Has Been Received	REF	Pathology	<input type="checkbox"/>
A Blood Group Serology Report Has Been Received	REF	Pathology	<input type="checkbox"/>

Notification Email Content:

From: System
 Subject: Pathology information received
 Patient: 415853297 PREFECT, Ford
 Received: 8/09/2005 11:20:39
 New pathology information has been received in Health e link for the above consumer.
 Click on the patient or document link to place the consumer into context and view their record.
 Pathology reports present in the new information are:
 - Haematology

Clinical Data Viewer

- Folders of historical patient information
- Color-coded for easy identification
 - Blue: Static read-only information
 - Green: Patient only may edit
 - Red: Patient and doctor may edit
 - Grey: Doctor only may edit
- Allows patients to create new documents online

The screenshot shows a 'Showing all documents' window with a list of folders and documents. The folders are color-coded: blue for static read-only, green for patient-only edit, red for patient and doctor edit, and grey for doctor-only edit.

Date	Title	Author
Child 0-5		
	Add New Document	
	Useful Information (3)	
	NSW Health Useful Information Health e link	
Wed 08:39	My emergency contacts and	
Wed 08:34	Health service contacts and e	
	Allergies & Alerts (1)	
	Allergies & Alerts Health e link	
	Health History (5)	
	My Family Health History Health e link	
	My Health History and Risk Factors Health e link	
	Birth Details Health e link	
	Newborn Examination Health e link	
	Statewide Infant Screening - Hearing (SV)	
	Health Diary (3)	
	Child Health Checks (31)	
	Growth Charts (5)	
	Observations (3)	
	Medications (1)	
	Immunisation (3)	

Access to Patient Data - Audit Report

Search Criteria		
From	29/08/2005	To 30/08/2005
<input type="button" value="Reset"/> <input type="button" value="Search"/>		
Search Results		
Date/Time	User's Full Name	Description
30/08/2005 13:34	Dr Mark Perez	Health e link, Encounter History
30/08/2005 13:34	Dr Mark Perez	Health e link, GP Details
30/08/2005 13:34	Dr Mark Perez	Health e link, Patient Summary
30/08/2005 13:34	Dr Mark Perez	Health e link, Main View
30/08/2005 13:24	Dr Mark Perez	Soprano Workflow Medical Templates, Create Document - Discharge Summary
30/08/2005 13:24	Dr Mark Perez	Soprano Workflow Medical Templates, Create Document - Discharge Summary
30/08/2005 13:24	Dr Mark Perez	Health e link, Patient Demographics
30/08/2005 13:24	Dr Mark Perez	Health e link, Alerts
30/08/2005 13:24	Dr Mark Perez	Health e link, GP Details
30/08/2005 13:24	Dr Mark Perez	Health e link, Prescribed Medications
30/08/2005 13:24	Dr Mark Perez	Health e link, Encounter History
30/08/2005 13:24	Dr Mark Perez	Health e link, Create Documents
30/08/2005 13:24	Dr Mark Perez	Health e link, Standard
30/08/2005 13:14	Dr Mark Perez	Health e link, Immunisations
30/08/2005 13:14	Dr Mark Perez	Health e link, GP Details
30/08/2005 13:14	Dr Mark Perez	Health e link, Encounter History
30/08/2005 13:14	Dr Mark Perez	Health e link, Prescribed Medications
30/08/2005 13:14	Dr Mark Perez	Health e link, Patient Summary
30/08/2005 13:14	Dr Mark Perez	Health e link, Alerts
30/08/2005 13:14	Dr Mark Perez	Health e link, Patient Demographics

Printer friendly version [Download CSV results](#)

HEALTH INNOVATORS

ORION
HEALTH

healthelink

Challenges Faced

- Patient registration model (opt-out vs opt-in)
- Consensus on designing the system and UI
 - System for doctors vs for patients
- Sharing Information between multiple hospitals
- Access to data
 - Should patients be able to view all their data
 - Should doctors be restricted from viewing data

HEALTH INNOVATORS

ORION
HEALTH

EHR Experience

- The process for patient registration, whilst conforming to privacy legislation (enrolled manually vs. enrolled via messaging)
- Obtaining and managing consent (e.g. opt-in vs. opt-out model, explicit vs. implicit consent)
- Using consent to restrict access to the EHR (e.g. full consent, partial consent or no consent, break-the-glass functionality).
- Managing patient access to their own record (read-only vs. updating personal and clinical information)

Solution Capabilities

- Orion's portal functionality, workflow and look and feel has been co-designed by clinicians, and optimized for an EHR solution
- We can use our experience to help you design your EHR solution
 - Dynamic Patient Summary is a snapshot view of the latest data about a patient
 - Clinical Data Viewer organizes historical information into clinically-relevant folders
 - Filtered by date, time, encounter, location, author, type and service
 - Abnormal, unread, and urgent flags reduce search time
 - Work lists for managing groups of patients of interest
 - Notifications "push" important information to clinicians
 - User messaging to improve collaboration among providers

Since Go-Live in March 2006...

- Of the patients registered in the system
 - 1% have asked for access to their own record
- Rollout to 2nd Pilot area to commence September 2006
 - Greater Western Sydney
 - Rollout is across 4 hospitals (based on hospital location- ED, Inpatient, Outpatients at each hospital)
 - Also, includes data from community clinics in the area (approx 15 clinics)
 - Much larger population so expect greater number of registrations and higher % of patients wanting access to their own record
- GP Conference

HEALTH INNOVATORS

ORION
HEALTH

Large Scale Messaging Projects



UCDAVIS
HEALTH SYSTEM

CDC, USDA, UC Davis Health...

HEALTH INNOVATORS

ORION
HEALTH

Large Scale Messaging Projects - USA

- CDC has standardised on Rhapsody as the core messaging facility to receive data from 50 states
 - All hospitals in USA will have runtime Rhapsody to send de-identified data
 - Geographical distribution of diseases
- USDA – United States Department of Agriculture has standardised on Rhapsody to monitor Animal Health diseases, Bird Flu, BSE, etc
- US Davis – Disease Surveillance – Tuberculosis, Cancer, Immunisation information is sent

HEALTH INNOVATORS



Rhapsody – Interface Engine

- Delivers Patient Demographics and Clinical Information from multiple Systems
- Performs Message Mapping Between Formats
- Wide range of connection capabilities
- Provides Interfaces to Existing Vendor Systems
- Provides Simple, Easy-to-Use Mapping and Routing Toolkit
- Participant at HL7 booth for Interoperability Solution
- Rated #1 Interface Engine in KLAS

HEALTH INNOVATORS





Rhapsody Advantages

- Build easier endpoint communications
- Build easier data mapping
- Many built-in filters, qualifiers, conversions, translation
- Easy deployment of interface projects
- Easy to use and robust monitoring tools
- Flexibility to meet complex business rules

HEALTH INNOVATORS



Different Messaging Standards

EDI

- HL7 2.1, 2.2, 2.3.1, 2.4, 2.5 & draft version 3
- DICOM support, image and data extraction
- X.12, ranging from 2001-4041
- HIPAA 837, 997, 277, 275, 835 V. 4020
- EDIFACT ranging from 901-I03A
- HCFA X.12 837A
- UB92 V.4.1 and V.5.0
- ASTM
- NCPDP
- Custom fixed width formats, csv, etc...

XML

- W3C DTD compatible
- W3C schema compatible
- Microsoft schema compatible
- ebXML

HEALTH INNOVATORS



Different Connection Protocols

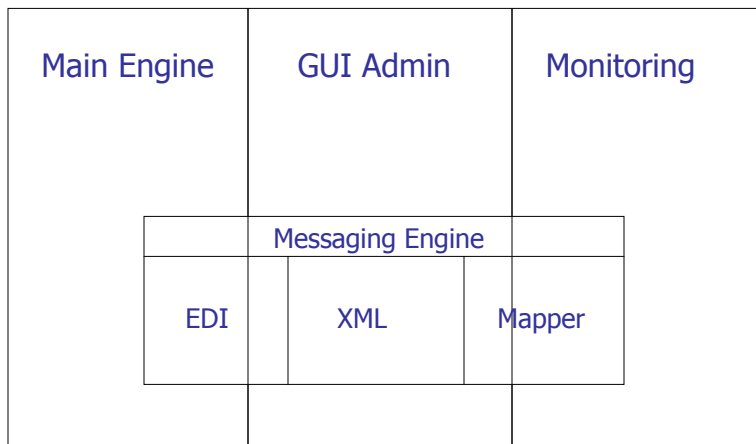
Comm. Points

- TCP/IP
- HTTP(S) server and client
- Database (input and output)
- File read-from, write-to directory, batching and de-batching to disk, zip support
- E-mail (input and output)
- HylaFAX (output only)
- Printing
- Java RMI
- JMS (input and output)
- Serial (RS-232) with user defined header and/or trailers
- FTP client
- SFTP client
- COM
- MQ Series, MSMQ (native)
- IBM MQ Series
- Systems Network Architecture (SNA)
- Notifications

Filters

- Apply XSLT Stylesheet
- XML Signing / Verifying Filter
- XML Cryptography Filter
- XML to PDF
- XML to RTF
- XSD Validator
- Cryptography
- Batching/Debatching
- Character Encoding Translator
- Database Lookup
- ebXML Filters
- DICOM JPEG Extraction Filter
- DICOM to XML / XML to DICOM Filter
- EMPI Enterprise ID Query Filter
- EMPI Patient Details Query Filter
- EDI Message Validator
- Code Validation & Translation Filter
- Content Population
- Symphonia Mapper
- Provider Index Query Filter

HEALTH INNOVATORS



HEALTH INNOVATORS





The Administration Application

- Build interfaces using drag-n-drop technology
- Wizards for new communication points and routes
- Check-in/check-out procedure
- Mapping and translation filters
 - Encryption (certificate authentication – CA), validation, content extraction, transformation e.g. XML->PDF, database lookup,
 - Library of HL7 mappings built-in
- All user activity tracked in an Audit Log

HEALTH INNOVATORS



The Administration Application

It is an easy to use Windows application...

The screenshot shows the Rhapsody Administration application window titled "Rhapsody Administration - [Route NewRoute1]". The interface includes a menu bar (File, View, Rhapsody, Window, Help), a toolbar, and a main workspace. On the left, a "Workspace" pane shows a tree view of "Engine Components" including Comm Points, EDI Dir, Email Staff, VB EDI Server, XML Dir, Routes, and NewRoute1. The main workspace is divided into three vertical sections: "Input", "Filters", and "Output". In the "Input" section, a "VB EDI Server" component is connected to "Symphonia Mapper" and "Content Population" in the "Filters" section. These filters are then connected to "Email Staff", "XML Dir", and "EDI Dir" components in the "Output" section. A "Route Workspace" label with an arrow points to the main workspace area. At the bottom, a "Properties" window is open, showing a table of properties for the "VB EDI Server":

Property	Value
Local Port	1001
Local Address	127.0.0.1
Maximum Conn...	10
Listen Backlog	10

A "Comm point Properties" label with an arrow points to the Properties window. The status bar at the bottom indicates "For Help, press F1" and "NUM".



Monitoring Tools

- Web-based monitoring of engine performance
 - Determine status of each route and communication point
 - Start/stop communication points
 - Message tracking
 - View error, hold and delete queues
 - Edit and resend messages with errors
 - Retrieve messages from archives
 - Analyze performance with reports, statistics and graphs

HEALTH INNOVATORS



Web Monitoring Tools

Main Rhapsody Monitoring Page

Total Count - 15 (6)

Queues

Error Queue - 3 Delete Queue - 0 Hold Queue - 0

- [Freeze Window](#)
- [View Log](#)
- [Routes Summary](#)
- [View Audit Events](#)
- [Tracking](#)
- [View Archives](#)
- [Configure Views](#)
- [View Statistics](#)

Routes

Name	State	Waiting	Current	Processed	
EDI Validate					
Database Filter					
Code translate		0	0	3 (0)	
cryptography		0	0	3 (3)	

Communication Points

Name	State	Type	Received	Sent	Waiting	
EDI Validate						
Database Filter						
email		E-mail	0 (0)	0 (0)	0	
Input TCP		TCPServer	3 (3)	0 (0)	0	
Output TCP		TCPClient	0 (0)	3 (3)	0	
Dir In		Directory	0 (0)	0 (0)	0	
Dir Out		Directory	0 (0)	0 (0)	0	

[Error Log](#)

HEALTH INNOVATORS





Monitoring Statistics

Folder Info

Routes Database Filter

Folders				
Routes				
State	Name	Waiting	Current	Processed
■	Code translate	76	0	0 (0)

Chart Displaying time series chart showing today's minutely message throughput

Generate Statistics

Time Since: 4 Oct 2004 00:00:00 Before: Unit Time: Minute

Chart: Message count time series chart Message elapsed time chart Message counts per origin chart **Generate**

KLAS Report

PRIMARY INDICATORS

QUESTION	RHAPSODY	QDX INTEGRATOR (CLOVERLEAF)	DATAGATE*	SIEMENS OPENLINK	EGATE	ALL PRODUCTS
Lived up to expectations	8.47	6.95	7.88	6.92	6.82	6.93
Vendor is improving	8.07	6.00	6.50	6.84	6.29	6.79
Proactive service	8.20	6.24	6.38	6.35	5.24	6.53
Money's worth	8.73	7.19	8.50	6.77	7.28	7.07
Enterprise commitment to technology	8.60	7.48	7.38	7.19	7.24	7.29
Vendor executives interested in you	8.57	6.05	4.75	6.38	5.24	6.93
Contracting experience	8.36	6.12	6.25	6.08	6.35	6.82
Product works as promoted	8.67	7.38	8.00	7.68	7.14	7.10
Quality of training	8.43	6.25	7.25	6.68	6.70	6.83
Quality of implementation	8.31	7.25	7.14	6.48	6.35	6.95
Quality of telephone/web support	8.43	7.30	7.00	7.08	6.61	7.08
Quality of interface services	8.79	8.29	8.63	7.92	7.93	7.17
3rd party prod. works w/ vendor prod.	8.08	7.40	7.57	7.50	7.00	6.89
Helps Your Job Performance	8.73	7.37	7.75	7.38	7.34	7.07
COLUMN AVG.	8.46	6.93	7.21	6.95	6.68	6.96

HEALTH

DETAIL INDICATORS

QUESTION	RHAPSODY	QDX INTEGRATOR (CLOVERLEAF)	DATAGATE*	SIEMENS OPENLINK	EGATE	ALL PRODUCTS
Worth the effort	8.33	7.67	8.50	7.31	7.82	7.30
Real problem resolution	8.47	7.14	7.13	6.81	6.21	6.98
Good job selling	8.13	6.26	5.50	6.32	6.00	6.71
Product quality rating	8.67	7.30	8.13	7.38	7.14	7.23
Implementation on time	8.64	7.05	8.00	7.04	6.04	7.20
Implementation within Budget/Cost	8.57	7.17	7.71	7.20	6.52	7.52
Quality of implementation staff	8.71	7.22	7.14	6.64	6.83	7.25
Quality of documentation	8.07	6.22	6.88	6.00	6.64	6.70
Quality of releases & updates	8.20	6.60	7.38	6.92	6.74	6.87
Production errors addressed quickly	8.42	6.63	7.50	7.12	6.55	6.79
Interfaces met deadlines	8.50	7.75	7.75	7.75	6.72	7.08
Quality of custom work	8.71	7.33	7.00	7.12	6.16	6.97
System response times	8.40	7.47	7.86	7.88	7.54	7.24
Technology easy to implement & support	8.60	7.29	6.17	6.91	6.59	7.09
COLUMN AVG.	8.46	7.07	7.34	7.03	6.69	7.07

HEALTH



Super Dolphin Project

HEALTH INNOVATORS





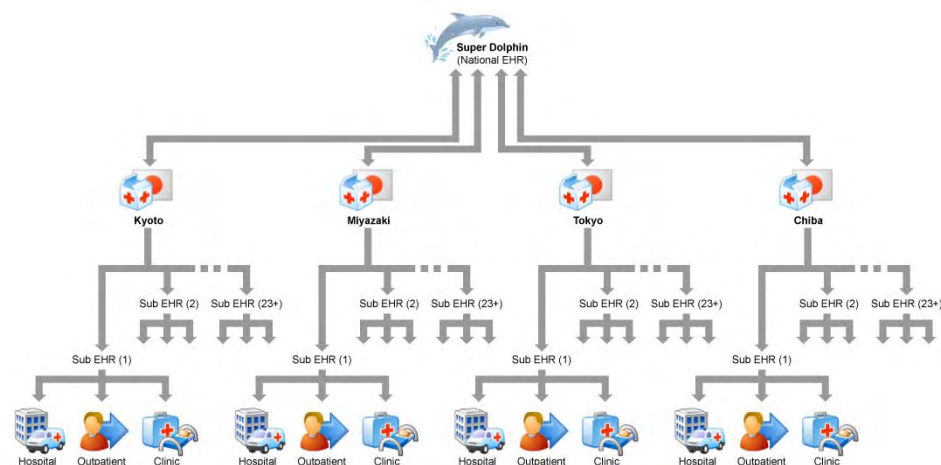
Japan Health IT objectives

- Manage Life cycle records – Health Record – Physical/Mental/etc...
- Electronic Medical Record – Government initiatives
 - 200+ beds must have EMR by 2010
 - 400+ beds must have EMR by 2008
- Track patient information between prefectures
- Effective communication using Industry Standards e.g. ebXML, HL7 CDA, MML, etc...

HEALTH INNOVATORS

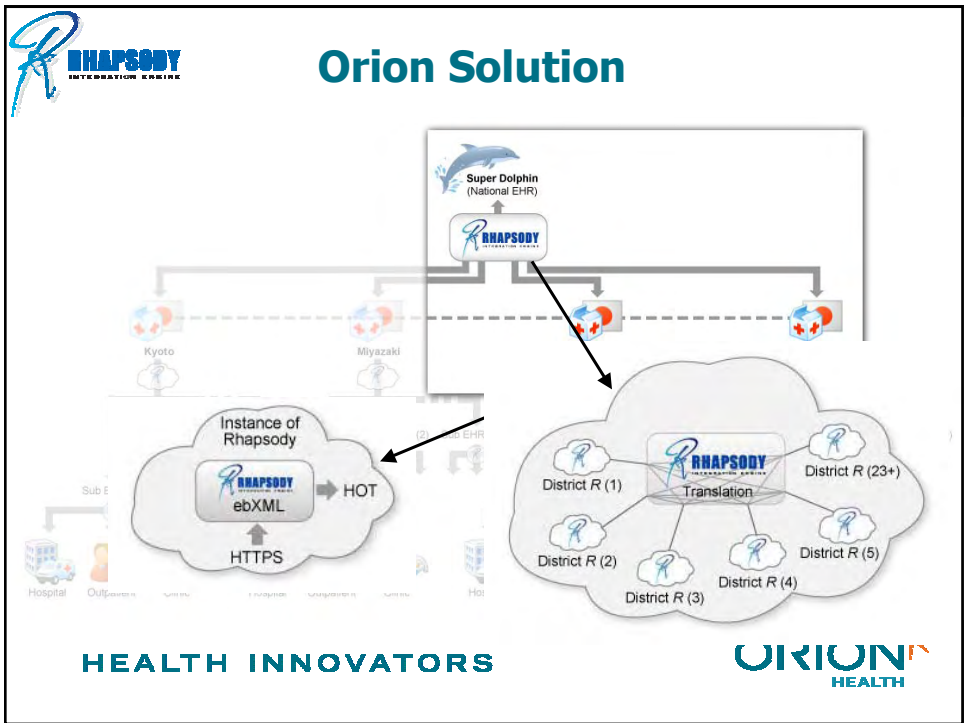
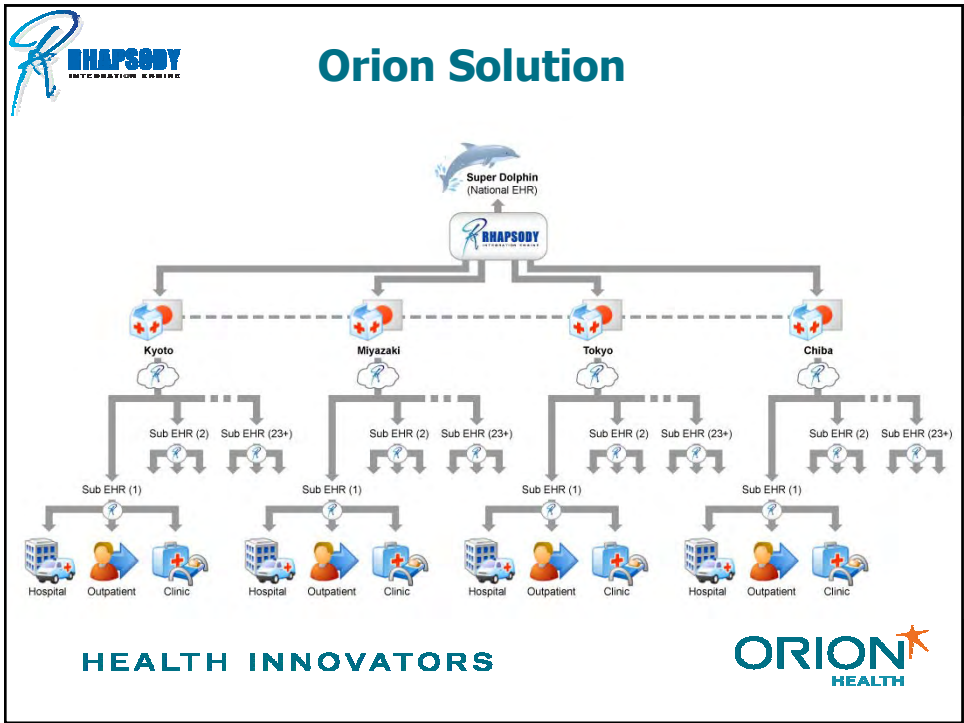


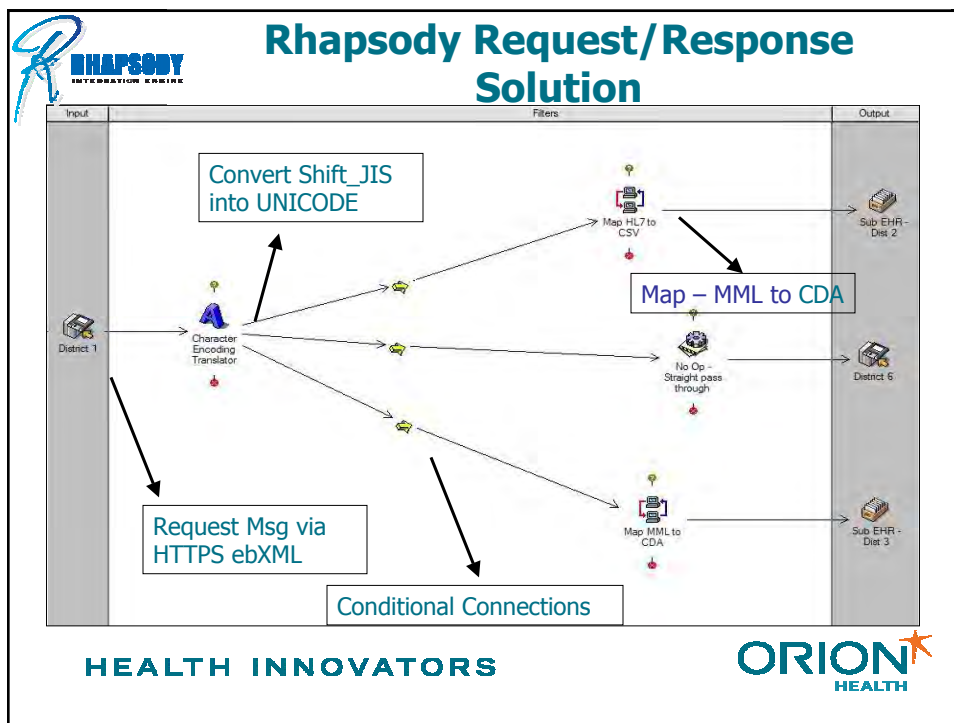
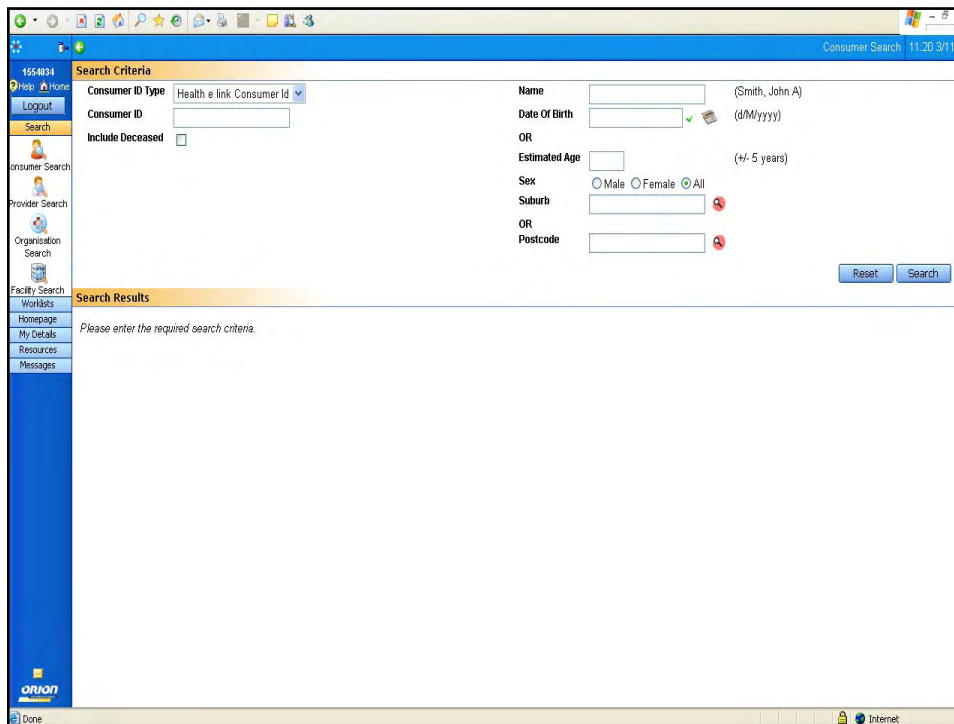
National EHR



HEALTH INNOVATORS









Rhapsody Mapping Solution

- Built incoming definition – use MML sample file provided by Nakashima-san
- Built outgoing definition – use HL7 CDA rel. 2 W3C download directly from website
- Apply mapping rules

HEALTH INNOVATORS



Incoming/Outgoing Definition

Import MML
DTD using DTD
importer

The screenshot shows the 'Document' window in Rhapsody. It features a table with columns 'Name', 'Datatype', and 'R'. Below the table is a tree view labeled 'Children' showing a hierarchical structure of XML elements.

Name	Datatype	R
xmlns-cda	String	<input type="checkbox"/>
xmlns-clinical	String	<input type="checkbox"/>
xmlns-xd	String	<input type="checkbox"/>
xmlns-invoice	String	<input type="checkbox"/>
xmlns-transaction	String	<input type="checkbox"/>
xmlns-transaction	String	<input type="checkbox"/>

The screenshot shows the 'Composer for XML' window in Rhapsody. It features a table with columns 'Name' and 'Datatype'. Below the table is a tree view labeled 'Children' showing a hierarchical structure of XML elements.

Name	Datatype
xmlns	String
xmlns:voc	String
xmlns:ksi	String
xmlns:schemaLocation	String

Import HL7
CDA W3C
using Schema
Importer

Mapping Business Rules

Drag and Drop to create code automatically

HEALTH INNOVATORS UNION HEALTH

Mapping Solution

Incoming Msg - MML

Map to HL7 CDA rel.2

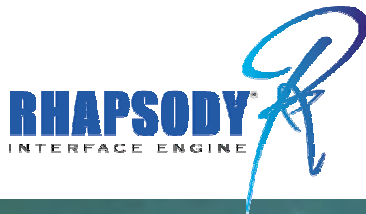
HEALTH



Conclusions

- Company focus purely on Health
- Expertise and Experience in deploying EHR's around the world
- Understand challenges faced – opt-in/out, multiple ID, etc...
- Software – Rhapsody, Concerto, EMPI – can handle Japanese text
- Commitment to Standards
- Ability to grow and satisfy future requirements
- Happy to discuss in detail about specific requirements

HEALTH INNOVATORS



Thank You