ICE 2011
COIN: Healthcare case; results and benefits
Track 1 Session 2,
June 22\textsuperscript{nd} - Aachen, Germany
Contents

• Motivation
  – Ecosystem
  – Problem area

• Building the Service Model
  – Healthcare and ICT market
  – Healthcare high level model
  – Market Scenarios

• COIN
  – Ecosystems, Innovation & Utility
  – Service Development
  – Major results
  – Use of COIN
  – Benefits
Motivation, problem area

• Motivation
  – Examine the practicability of exploiting purchasing power of UK Healthcare system for greater benefit of local communities and business.
  – Develop a business model for an community based SME Services & Application Intermediary
  – Healthcare delivery shift of focus:
    • Prevention rather than Treatment
    • Total system cost v Treatment cost
    • Wealth creation drives Wellbeing – reduce overall healthcare demand
Motivation, problem area

• Challenges
  – Increasing Number of Systems and Applications; diversity driving complexity within the ecosystem(s)
  – Typical ecosystem, mix SME of very low to high technology adopters.
  – Healthcare Procurement aggregation driving new levels of supplier integration both horizontal (scale) and vertical (complexity)
  – Average UK NHS contract value has increased, the ratio compared to the average SME turnover (static) is widening.
  – SME solutions developed for local markets are limited due to lack of globally accessible and cost effective interoperability standards.
  – ‘New’ Healthcare markets developing outside the traditional providers:
    • Community Commissioning
    • ‘in the home personalised care’
Typical Viewpoints – ICT & Health market

- Access to knowledge economy
  - Coverage approaching 100% of population
  - Penetration for healthcare circa 5%

- Attitude, shift from digital divide to economic opportunity
  - Aging population – labour saving solutions
  - Digital divide remains a usability & take-up issue

- ICT maturity
  - Potential customer access Mobile v Fixed web
  - Usability challenges Mobile v Web

- Motivational factors
  - Established habits, procedures
  - Status quo,
  - Present social, business networks are effective lobbyists
  - Economic opportunity
High Level Model

Health Drivers
- Occupational
- Consumption patterns
- Education
- Income

Health – Value proposition
- Perceived attributes
- Health status
- Indexes
- Value of Life

Demand for Healthcare
- Behaviours
- Barriers
- Access
- Need

Micro-Economic
- Effect at Treatment Level
- Cost effectiveness & cost benefits
- Choice of mode
- Aftercare

Supply of Healthcare
- Costs of Production
- Alternative production
- Markets
- Pay and Incentives

Market Equilibrium
- Price, Times
- Waiting times
- Non-price factors
- Equilibrating mechanisms

Evaluation at Whole System Level
- Equity & Allocation efficiency
- Inter-regional & International Benchmarking

Planning, Budgeting & Monitoring Mechanisms
- Evaluation of effectiveness
- Optimising the system
- Interplay of resources
- Norms & Regulation
### Scenarios - Healthcare

<table>
<thead>
<tr>
<th>Centralised</th>
<th>Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buying Power</strong></td>
<td><strong>Buying Power</strong></td>
</tr>
<tr>
<td><strong>As IS - 'Corporate' Health</strong></td>
<td><strong>Disruptive - Retail Health</strong></td>
</tr>
<tr>
<td>overhead costs increase</td>
<td>politically seen as shift from public to private with additional payments</td>
</tr>
<tr>
<td>high vertical integration of services</td>
<td>large private providers, charities and insurance companies</td>
</tr>
<tr>
<td>fixed prices - treatment productivity key driver (lean health)</td>
<td>provision of healthcare marketing driven and technology sensitive</td>
</tr>
<tr>
<td>standard products and services - one size fits all</td>
<td>high opportunity for cost reductions of service overheads and delivery</td>
</tr>
<tr>
<td>traditional large scale PPP - investment recovery key drivers</td>
<td>threat to secondary care providers</td>
</tr>
<tr>
<td>requires above real term inflation investment year on year</td>
<td>free market healthcare</td>
</tr>
<tr>
<td>national health delivery strategy - defocus on 'local' conditions</td>
<td>healthcare by consumer shopping</td>
</tr>
<tr>
<td>Local Authorities become stakeholders</td>
<td>virtual suppliers become the norm</td>
</tr>
<tr>
<td>horizontal integration of services - primary care</td>
<td></td>
</tr>
<tr>
<td>integration and turf wars with secondary care providers</td>
<td></td>
</tr>
<tr>
<td>Local Authorities retain control of large portions of spend</td>
<td></td>
</tr>
<tr>
<td>Quick fix for budget cuts in healthcare</td>
<td></td>
</tr>
<tr>
<td>Regional healthcare projects emerge</td>
<td></td>
</tr>
<tr>
<td>piggyback national contracts for service delivery</td>
<td></td>
</tr>
<tr>
<td>Duplication and complexity of managing funding is created</td>
<td></td>
</tr>
<tr>
<td>Focus of healthcare issue upon league tables and regional 'hot topics'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Large Organisations</th>
<th>SME Organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dominant Market</strong></td>
<td><strong>Dominant Market</strong></td>
</tr>
<tr>
<td><strong>Regional Care Service</strong></td>
<td><strong>Regional Care Service</strong></td>
</tr>
<tr>
<td>federation of healthcare ecosystems</td>
<td>federation of healthcare ecosystems</td>
</tr>
<tr>
<td>Local authorities become stakeholders</td>
<td>Local authorities become stakeholders</td>
</tr>
<tr>
<td>Cost and prices vary</td>
<td>Cost and prices vary</td>
</tr>
<tr>
<td>local focus of solutions - professional community of commissioners created</td>
<td>local focus of solutions - professional community of commissioners created</td>
</tr>
<tr>
<td>patient centric - customer relationship management fundamental service</td>
<td>patient centric - customer relationship management fundamental service</td>
</tr>
<tr>
<td>league tables yardstick of performance</td>
<td>league tables yardstick of performance</td>
</tr>
<tr>
<td>health dividend key measure of impact of services upon future costs</td>
<td>health dividend key measure of impact of services upon future costs</td>
</tr>
<tr>
<td>local providers have greater influence</td>
<td>local providers have greater influence</td>
</tr>
<tr>
<td>direct payments to patients the norm</td>
<td>direct payments to patients the norm</td>
</tr>
<tr>
<td>lack of access to core systems - data &amp; systems gaps need closing</td>
<td>lack of access to core systems - data &amp; systems gaps need closing</td>
</tr>
<tr>
<td>competition fragmented and dependant upon clear set of delivery rules</td>
<td>competition fragmented and dependant upon clear set of delivery rules</td>
</tr>
<tr>
<td>innovation thrives - standards under pressure to keep pace</td>
<td>innovation thrives - standards under pressure to keep pace</td>
</tr>
<tr>
<td>mass customisation of services</td>
<td>mass customisation of services</td>
</tr>
</tbody>
</table>
COIN – Ecosystems, Utility & Innovation

• Ecosystem supports two requirements for Utility services:
  • Market Coverage and Penetration.
• Healthcare Market Innovation
  • Self directed care budgets
  • ‘Personalised’ health & social care
• SaaS-U can increase ‘ownership’ and selection opportunities, creating:
  • Increase of economies of scope & competence.
  • Disruptive Innovation
  • Co-creation

• The healthcare value proposition (and business model) research in COIN relate to the supply side of the ICT market for the purpose of ascertaining whether there is a business case for COIN ISU /SaaS-U.
• Challenges:
  • Economic foundations
  • Future enterprises & innovation
  • Scope creep
Healthcare – Service Development

Recommendation 7

WP 6.2 Business Models

WP 6.1 Use Cases

WP6.5 Validation & Test Beds

WP6.6 Demonstrations

WP3.5 Integration Testing

WP2.1 Dissemination

WP2.2 Exploitation

Federation of Intermediaries & services

Impact assessment

1st / 2nd / 3rd iteration

Objectives, quantitative business impacts

Criteria SaaS-U

Business Model Process

Business Plan

Modelling - iteration

Value Proposition

Papers

Workshops

Scenarios

WP6.5 Validation & Test Beds

WP6.6 Demonstrations

WP3.5 Integration Testing

WP2.1 Dissemination

WP2.2 Exploitation

Federation of Intermediaries & services

Impact assessment

1st / 2nd / 3rd iteration

WP6.5 Validation & Test Beds

WP6.6 Demonstrations

WP3.5 Integration Testing

WP2.1 Dissemination

WP2.2 Exploitation

Federation of Intermediaries & services

Impact assessment

1st / 2nd / 3rd iteration
Major Outcomes/Results

• Construct the initial Healthcare Use Case service model
• Service Intermediary Value Proposition & draft Business Plan
• Identify: Collaborative Innovative and Baseline utility services
  – Generic Service Platform
  – Service discovery & negotiation
  – Human Interaction
  – Collaborative Product Development
  – Semantic Supporting services
  – Competency Development
Use of COIN Services

- Eight Primary Use Cases
- Semantic Services
- Human Interaction Services
- C-PD Services
- Interoperability Services
Sample of COIN Services

• Typical Semantic service (video)

• Typical Human Interaction service (expand to view)

• Typical Project Management & competency service (expand to view)
Define sites e.g. Cluster/Association

Criteria Filter e.g. Kapow Financial considerations

Refined WEB Content: Cost implication Interoperability Legacy data

COIN Cluster Manager Library e.g. Clippings Legacy data ESP Stored in File / Folder

Analysis

Manual

SOBE Social Ontology Building Access Licensing

Taxonomy / Ontology – i.e. ATHOS editor

External Reference e.g. International medical ontology

ESM Tool
Semantic Match-making Access Licensing

Healthcare – Example Taxonomy/Ontology Build process
Competitive Advantage: COIN goals

- **Diversity of supply** - address by innovative Search, Discovery & Ranking of services
- **mix of low and high tech users** - address by Service creation that caters for maturity of providers and their customers.
- **investment and management burden** in complex ICT infrastructures – addressed by provision and federation of ‘local’ intermediary service provider.
- **New forms of co-operation** – address by provision of Enterprise Collaboration Human Interaction services.
- **Procurement aggregation**; horizontal (scale) and vertical (complexity) – address by innovative collaborative services: i.e. Trust, Legal and Commercial platform services.
Potential Beneficiaries

- **Tax payer** – adoption of the Health Dividend using utility type services lowers the cost of healthcare delivery, increases local spend driving wealth creation and hence reducing local demand.

- **Patient** – Wellbeing is a key factor in health; Utility services offer the scope for greater patient ‘customer’ control, supporting services and chiefly customised services.

- **SME** – Business gain greater market share and face reduced barriers to market entry.

- **Local Community** – particularly communities with poor health indicators can benefit from localised investment and secondary services creation.
## Business Benefits – VEN Healthcare Use Case

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Process Parameters</th>
<th>Improvements</th>
<th>Expected Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member Recruitment</td>
<td>• Subscribed Systems • Knowledge transfer • Target audience</td>
<td>• Interoperability • Semantic services • HI Services</td>
<td>• Increase local involvement • Increase membership numbers and mix. • Increase member activity</td>
</tr>
<tr>
<td>Events &amp; Communications</td>
<td>• Subscribed Systems • Knowledge transfer • Target audience</td>
<td>• Interoperability • Semantic services • HI Services</td>
<td>• Increase local involvement • Increase membership numbers and mix. • Increase member activity</td>
</tr>
<tr>
<td>Form Interest Groups</td>
<td>• Target levels of social interaction • Co-ordinator productivity • Decision making</td>
<td>• Interoperability • Semantic services • HI Services</td>
<td>• Increase membership numbers and mix. • Increase member activity • Demographic decision making</td>
</tr>
<tr>
<td>Improve Service Levels</td>
<td>• Target levels of social interaction • Categorisation of Customer / Supplier roles / activities • Cater for quantitative and qualitative improvements</td>
<td>• Interoperability • Semantic services • HI Services</td>
<td>• Increase member response rates • Increase member response rates by demographic group • Increase in minority specific services</td>
</tr>
<tr>
<td>Training</td>
<td>• Self manage competency development • Online interactive content • Manage negotiation and selection of training content and provision</td>
<td>• Interoperability • Semantic services • HI Services</td>
<td>• Increase accreditation levels • Increase competency and skills • Reduce cost to acquire new skills and knowledge</td>
</tr>
</tbody>
</table>
## Business Benefits – VEN Healthcare Use Case

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Process Parameters</th>
<th>Improvements</th>
<th>Expected Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage budget</td>
<td>• Market availability of services and products&lt;br&gt;• Collaborative and innovative end-to-end services&lt;br&gt;• Mix and Volume of competition</td>
<td>• Interoperability&lt;br&gt;• Semantic services&lt;br&gt;• HI Services&lt;br&gt;• C-PD services</td>
<td>• Increase in quality of service&lt;br&gt;• Improvement in competitive pricing&lt;br&gt;• Increase in innovative services&lt;br&gt;• Increase of well-being</td>
</tr>
<tr>
<td>Schedule Order</td>
<td>• Subscribed Systems&lt;br&gt;• Collaborative and innovative end-to-end services&lt;br&gt;• Mix and Volume of competition</td>
<td>• Interoperability&lt;br&gt;• Semantic services&lt;br&gt;• HI Services&lt;br&gt;• C-PD services</td>
<td>• Increase in quality of service&lt;br&gt;• Improvement in competitive pricing&lt;br&gt;• Increase in innovative services&lt;br&gt;• Increase of well-being</td>
</tr>
<tr>
<td>Order Payment</td>
<td>• Procurement and supply&lt;br&gt;• Trust management&lt;br&gt;• Safeguarding and dispute management</td>
<td>• Interoperability&lt;br&gt;• Semantic services&lt;br&gt;• HI Services&lt;br&gt;• C-PD services</td>
<td>• Increase in quality of service&lt;br&gt;• Reduction in Customer complaints and/or non-conformance&lt;br&gt;• Increase in use of end-to-end services</td>
</tr>
</tbody>
</table>
COIN - Broader Ecosystem Benefits

- **Deliver** alternative Patient choice
- **Demonstrating** innovation and leadership
- Single-minded focus on **benefits realisation**
- Appreciating the EC/EI “glue”
- **Extend** marketing reach.
  - Ability to provide **total capacity** offering
  - Ability to **gain approvals** as part of a larger entity
- Full **transparency** of the process and the opportunities within it
- **Qualified** bid partners, not just ‘eager participants’
- Integration with a **mixed community** of talent
  - Opportunity to share ideas and thinking
  - Access to best practice in other industries, sectors or clusters
Enterprise COLlaboration & INteroperability

Thank-you for your attention

www.coin-ip.eu