

# HIMSS<sup>®</sup>19

## CHAMPIONS OF HEALTH UNITE

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## Building a Regional Innovation Program: Lessons from Across the Pond

INV3, February 11, 2019

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# Conflict of Interest

Rachel Dunscombe, Jon Melling and Douglas Thompson have no real or apparent conflicts of interest to report.

# Agenda

- Introduction – Doug
- Case Example #1 – NHS Patient Choice Collaboration – Jon
- Case Example #2 – NHS Blueprinting – Rachel
- Case Example #3 – The Finnish Apotti Project – Doug
- Lessons Learned and Applications – All
- Questions



# Learning Objectives

- Identify the common issues faced by organizations attempting IT-driven healthcare innovation across a large geographic area
- Discuss the unique solutions adopted by organizations in different parts of the world, and how these solutions matched local needs, culture and regulations
- Generalize these solutions and lessons learned to regional innovation efforts in other parts of the world



# Vive La Difference!

Characteristics of Large-Scale International IT-Driven Healthcare Innovation Efforts, as Compared to Those in the United States:

- More likely to be regional or national in scope
- More likely to be publicly funded
- More likely to involve multiple organizations with different priorities, characteristics, and capabilities
- More likely to use a collaborative approach
- Likely to have a longer planning and execution timeframe



# Innovation in the NHS

- Innovation isn't a new phenomenon in the NHS
  - Patient Admin Systems 1960s
  - Lab and Radiology Systems 1970s
  - Use of standard systems - early '80s.
  - Common basic specification for Electronic Patient Record – mid '80s to early '90s
  - Hospital Information Support Systems (HISS) – 1980 to 2000
  - Resource Management – early '90s
  - National Program for IT (NPfIT) 2003 - 2011



# Importance of Innovations in NHS

- *NHS Innovations delivered dramatic improvements by improving access to services for the most vulnerable and neglected patient groups.... many innovations achieved improvements by addressing different underlying needs from traditional health and care services.'*
- *Simply 'pushing' innovation into the NHS in the hope it will transform services is naïve and unrealistic. The adoption of innovation is, .....extremely challenging and takes more work and focus than some might think.*
- *In order for innovation to get out of 'purgatory' it needs to be pulled, and needs to be cultivated*

*Shane Degaris, CEO, The Hillingdon Hospital NHS Foundation Trust*



# What are we talking about?

- *Taking good ideas that others have, adapting and implementing them for our circumstances. We also need to work out better ways of doing things with what we already have available*
- *Innovation in health is notoriously difficult for a variety of well evidenced reasons including comprehension of a problem, working across multi-disciplines and the inevitable vested interests of individuals and organisations that need to be aligned*

*Andrew George, Interim Chair, Imperial College Health Partners*



# Examples of Innovative Ideas

- Dates back to 2004 to 2006
- Context: National political commitment to provide patient choice
- National Program for IT (NPfIT) was built on a number of Pillars
  - Integrated Care Record System
  - Spine
  - Choose and Book
  - Electronic Transmission of Prescriptions
- NHS/Private Hospital Collaboration on Patients Choice relied on the Spine and Choose and Book
- Illustrates principles of innovation in an organization that covers a large geography and a complex solution
- Also provides interesting challenges in Lessons Learned



# NHS collaboration with Private Sector

## Stakeholder Groups

## Stakeholder Services



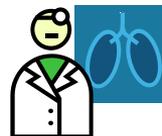
### Employees

- Revenue capture
- Expanded demographic data and analysis
- Consolidated view of all patients
- Purchasing
- Contract maintenance
- Expanded reporting capabilities



### Patients

- Paper based medical history
- Payment details
- Procedural care
- Post operative care
- Access to research



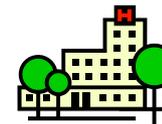
### Clinicians

- Access to online appointments and diary management
- Paper based medical history
- Ease of rescheduling
- Access to research



### Insurance

- online billing
- Enquiry handling
- Verification and authorisation



### NHS

- Capability for integration with NHS Systems
- Patient and episode information
- National Strategic Tracing Service
- Choose & Book

## Integration Engine

## Core Processes

### Revenue Capture

Patient Registration  
Billing  
Claims  
Submission

### Scheduling

Booking of outpatient clinic appointments

### Finance and Procurement

Ledgers and supplies

### EMPI

Patient Identity Management

### Intranet/ Extranet

Patient Info  
Consultant & Staff knowledge base

## Core Systems

**Electronic Patient Record**

**Enterprise-Wide Scheduling**

**Electronic Patient Record**

**Master Data Management**

**Company Intranet & Website**

**NHSnet/N3**



# The Challenge

- Levelling off of Private Medical Insurance demand
- Increased Competition from NHS
- Desire to participate in Patients Choice program
- Need to comply with NPfIT Choose and Book
- 49 instances of same “non-compliant” system
- Risk of total replacement in timely manner
- Need for compliant infrastructure and de-risk ageing systems



# Benefits

- Early Stage HIE
- Robust Enterprise Infrastructure Compliant with NHS Spine, Choose and Book, Electronic Transmission of Prescriptions)
- Access to patient data regardless of location (NHS or Other hospitals within group)
- Reduced reliance on legacy systems (bought time)
- Ability to add in best of breed apps to replace existing systems
- Base line support for NHS initiatives (NHS Number, Patients Choice, NHS Tracing Service, Commissioning Data Sets)
- A new potentially robust revenue stream and new source of patients



# Factors influencing Innovation

- Excellent communication internal and external
- Willingness to partner and be flexible (vendor and organization)
- Clear focus on benefits and how they will be realized and understood by end users
- Availability of resources
- Size and scale of an organization and its position in the market.
- The ability of the technology to attract funding
- The level of engagement between the vendor and healthcare organization
- The availability of and ability to meet standards
- Consumer awareness of potential benefits
- Consumer concerns about confidentiality and usability
- In some cases, government or corporate policy
- Strength of Management leadership
- Ability to “spread the word” and encourage adoption
- Effective procurement and decision making
- Availability of resources to make it happen



# Wachter to Blueprints

**Wachter Review – Sept 2016**



Organise Local/Regional Learning Networks to Support Implementation and Improvement

A Successful Digital Strategy Must be Multifaceted, and Requires Workforce Development that collaborates

Health IT Systems Must Embrace User-Centered Design

<https://bit.ly/2PGdOOI>



# What is a Blueprint?



- **A structured collection of knowledge assets** and associated methodology for using these assets for UK consumption
- **A description of the learning** from organisations experienced at digitally enabled transformation inc culture and change
- **An account that covers several dimensions and levels of detail** of the transformation story, including but not limited to:
  - Context and rationale for change
  - The approach that led to success
  - Readiness
  - Capability
  - Infrastructure
  - Governance

Information appropriate to different levels of abstraction (Board level, CIO/CCIO, frontline teams) and covering projects of different types

**Story Like \* Actionable \* Balanced**



**Blueprinting**  
Accelerating transformation



# What is a Blueprint?

Categorical information

Chronological story

**Global Digital Exemplar Blueprinting Framework**

**Our Organisation**

Our Type:  Teaching hospital  District/general hospital  Ambulance service  Health/health provider  Other

Project Type:  Digital Capability  Care Pathway  Care Setting

**Our Story**

Pre-implementation	Implementation	Ongoing Engagement
<p><b>Readiness</b></p> <p>How we created the right conditions for success</p> <ul style="list-style-type: none"> <li>Gap Analysis &amp; Rationale</li> <li>Leadership &amp; Governance</li> <li>Stakeholder Engagement</li> <li>Goals &amp; Strategic Alignment</li> <li>Plans &amp; Resourcing</li> </ul>	<p><b>Implementation Timeline</b></p> <ol style="list-style-type: none"> <li>Team Composition &amp; Organization</li> <li>System-wide Standards &amp; Protocols</li> <li>Workflow Evaluation &amp; Change</li> <li>Process Measures &amp; Data Collection Strategy</li> <li>Training</li> <li>Testing</li> <li>Other</li> </ol>	<p><b>Readiness</b></p> <p>Things we have in place to sustain and spread success</p> <ul style="list-style-type: none"> <li>Ongoing Needs Analysis</li> <li>Leadership &amp; Governance</li> <li>Stakeholder Engagement</li> <li>Goals &amp; Strategic Alignment</li> <li>Plans &amp; Resourcing</li> </ul>
<p><b>Capabilities</b></p> <p>Relevant digital capabilities to support care delivery</p> <ul style="list-style-type: none"> <li>Records, Assessments, and Plans</li> <li>Transfers of Care</li> <li>Orders &amp; Results Management</li> <li>Medication Management &amp; Optimization</li> <li>Decision Support</li> <li>Remote &amp; Assistive Care</li> <li>Asset &amp; Resource Optimization</li> <li>Data &amp; Analytics</li> <li>Digital Expertise</li> </ul>	<p><b>Capabilities</b></p> <p>New capabilities in place to support care delivery</p> <ul style="list-style-type: none"> <li>Records, Assessments, &amp; Plans</li> <li>Transfers of Care</li> </ul>	<p><b>Capabilities</b></p> <p>Things we have in place to sustain and spread success</p> <ul style="list-style-type: none"> <li>Records, Assessments, &amp; Plans</li> <li>Transfers of Care</li> </ul>
<p><b>Infrastructure</b></p> <p>Base technologies to create digital capabilities</p> <ul style="list-style-type: none"> <li>Standard Nomenclature, Terminology, Metadata</li> <li>Access, Logon, &amp; Licensing</li> <li>Device Availability</li> <li>Support Services</li> </ul>	<p><b>Infrastructure</b></p> <p>New technologies in place to support capabilities</p> <ul style="list-style-type: none"> <li>Standard Nomenclature, Terminology, Metadata</li> <li>Access, Logon, &amp; Licensing</li> <li>Device Availability</li> <li>Support Services</li> </ul>	<p><b>Infrastructure</b></p> <p>Things we have in place to sustain and spread success</p> <ul style="list-style-type: none"> <li>Standard Nomenclature, Terminology, Metadata</li> <li>Access, Logon, &amp; Licensing</li> <li>Device Availability</li> <li>Support Services</li> </ul>

**Benefits & Outcomes**

- World Class Digitization
- Core Capabilities
- Interoperability
- Unique Selling Point (USP)
- Impact on Care & Operational Delivery
- Clinical Outcomes
- Safety / Quality
- Patient Experience
- Resource Sustainability

**Levels of Applicability**

- Generic (Board level)
- Formal (ICD/CCO level)
- Standard (Business Line / Implementation/Project level)

**Digital Capabilities, Infrastructure, Readiness**

Change & Metrics | Users & Support | Use & Skills | Review & Refine

**A BLUEPRINT FOR IMPROVEMENT THROUGH DIGITISATION**

**Royal Liverpool and Broadgreen University Hospitals Trust: e-Sepsis**

**ABOUT this blueprint**

- Project type: Care Pathway
- Organisation: The Royal Liverpool and Broadgreen University Hospitals NHS Trust (RLBUTH)
- Version: 1.0 (2017)
- Version Log: [View Version Log](#)

**WHY e-Sepsis is important**

- Sepsis is a serious and frequently occurring condition that is challenging to identify and treat in a timely way
- The e-Sepsis project maximises digital technology and clinical workflow to help save lives by ensuring a standard, evidence-based approach to care, but also to ensure we deliver sepsis care in the Trust.

**WHAT benefits you may expect**

- Clinical: Lower mortality, improved identification of at-risk, among vulnerable populations, increased compliance with time targets for care.
- Operational: Less unwarranted variation in care, reduced LOS, improved bed occupancy rate, optimized roles, increased opportunities for patient involvement in a lot of ways.

**BEFORE you start, consider:**

- You'll need a paper free patient health record, digital observation data, and e-NWV.
- You'll need engaged clinical leadership and a clear standard of care.
- You'll need support for IT involvement in clinical technical co-design.

**KEY LEARNINGS & ADVICE**

**ARTIFACTS & REFERENCES**

**IMPLEMENTING (12-2016 to 04-2017)**

- Built the case**
  - Develop a business case
  - Identify a champion
  - Address gaps for a sepsis
- Earned executive support**
  - Get executive buy-in from the start
  - Share the story
- Formed teams**
  - Start up a multidisciplinary team
  - Identify a champion
- Defined a plan**
  - Set the vision and challenge
  - Develop a strategy
- Validated the paper pathway**
  - Get the government right
  - Engage stakeholders
- Developed the digital pathway**
  - Start design on digital pathway
  - Engage stakeholders
- Secured access to digital data**
  - Engage stakeholders
  - Secure data access
- Tested & piloted**
  - Appropriate that data will be available
  - Clear testing reports
- Trained & communicated**
  - Address the business change management
  - Engage stakeholders
- Implemented & optimised**
  - Address the business change management
  - Engage stakeholders
- Continuing Focus & Improvement**
  - Share the pathway
  - Engage stakeholders
- Spreading Innovation & Learning**
  - Look for opportunities to connect

**Royal Liverpool Global Digital Exemplar**

- Key Decisions
- Key Learnings & Advice
- Artefacts

# Goals

- Blueprints are expected to help other NHS organisations deliver digital capabilities more quickly and cost effectively than has been possible in the past
- Blueprints will be live documents that drive people wanting to benefit from GDE experiences to seek further information
- Each GDE will produce a number of blueprints including materials such as videos
- Blueprints will be populated over a number of years, and updated real time.



# Salford Blueprints

Stroke – deployed to 3.4M population – 33% reduction in mortality

Delirium and Dementia - in deployment to 3.4M population – reducing stay for patients from 73 to 35 days

VTE pathway – VTE's reduced by 13% - given to 7 NHS hospitals

<https://www.salfordgde.nhs.uk/about-us/projects/digitised-patient-care-pathways/>



# Spreading Nationally



# Enabling Blueprints



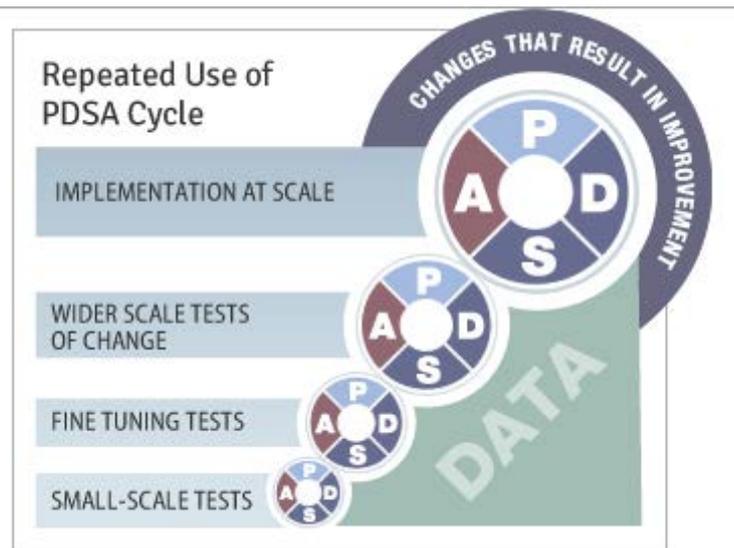
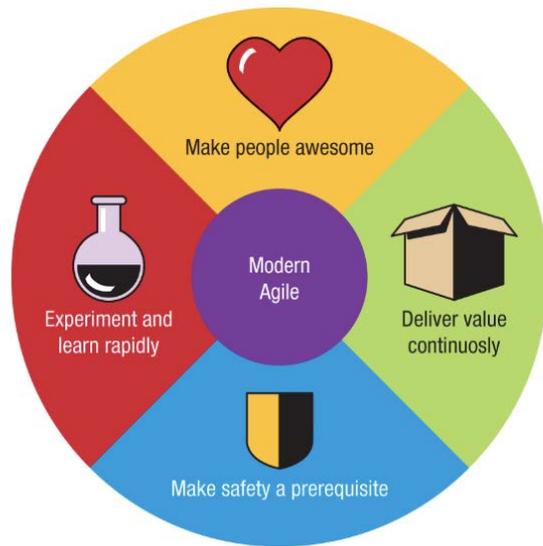
Lenny Naar @lennynaar · 22 Nov 2018

Truly inspired by the leaders in this room today. The energy, openness and commitment of the #NHSDigitalAcademy cohort in our prototyping workshop today gives me so much hope for the future of digital health. #cohort1



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# Enabling Blueprints



# Blueprinting Lessons Learned

- Link government funding to collaboration goals
- Provide real world real time evidence and live toolkit
- Create communities with sustaining ownership and contribution
- Spread the work across organisations playing to their strengths
- Create blueprints to engage everyone from clinicians to patients
- Make sure the pathway/ care area improvement can be used agnostically of EMR/EPR system
- Create a professional obligation to participate
- Professional obligations an clinical networks transcend organisations and politics
- Measure system impact regularly
- Give the right education to enable system leaders



# Finland's Apotti Project

An efficient tool for  
**35.000**  
social and health care  
professionals

Better health and  
well-being for  
**1.6 million**  
residents

Annual benefits of  
**over 100**  
million euros

**SUPPORT AND  
GUIDANCE**  
to prevent  
human errors

Professionals' location-  
independent access to  
**UP-TO-DATE  
PATIENT DATA**

**OPERATIONAL  
CHANGE**  
e.g. long-distance  
consultations

**INFORMATION**  
to support the  
development of services

**EFFORTLESS**  
online service and  
self-care

**TARGETING  
SERVICES**  
to those most in need

“ ... transformational project that develops social and healthcare services and adopts a regionally uniform social and healthcare information system.”

Source: <https://www.apotti.fi/en/what-is-apotti/>



# History

100%

## Design

2012-2013

The project began with a design stage in 2012. At that time, the basis for the project was established and its objectives, timetabling and resources were determined.

100%

## Procurement

2013-2016

At the procurement stage, Epic Systems Corporation was selected as the system supplier for Apotti and Fujitsu Finland Oy as the supplier of the data centre services.

90%

## Specifications

2013-2018

Users have played a key role throughout the process. The project has involved thousands of health and social services professionals together with other specialists and users.

75%

## Build

2016-2020

The customized data system, adopted to meet the organisations' needs, is currently being built; optimization will start after the deployment.

10%

## Deployment

2018-2020

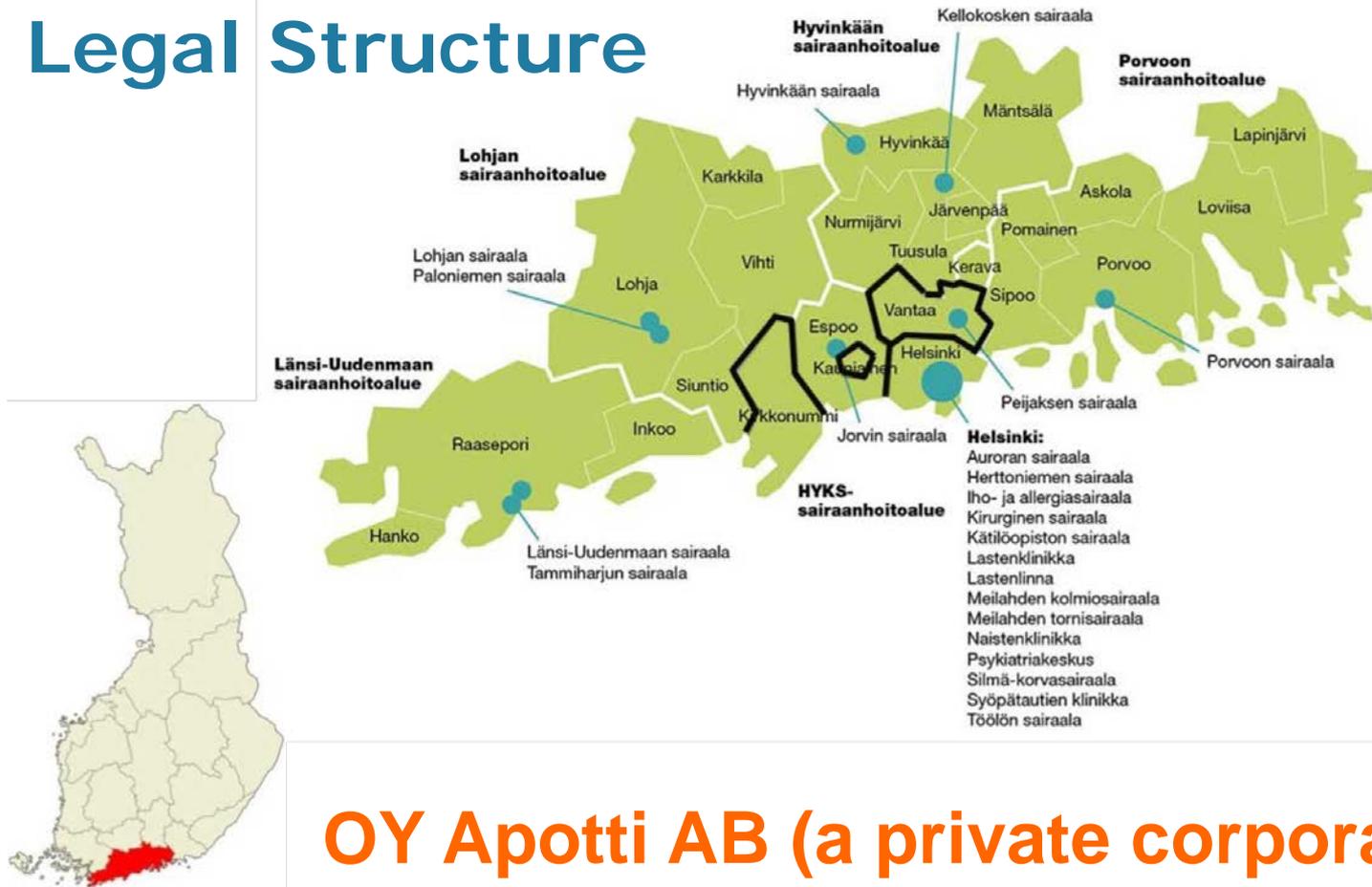
The Apotti System will be deployed in several stages. The first deployment will start in November 2018 in HUS Peijas Hospital.



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Source: <https://www.apotti.fi/en/project-follow-up/>

# Legal Structure



OY Apotti AB (a private corporation)



# Apotti's Goals and Benefits

“

We are building the world's first information system that combines social and healthcare services.

“

The state-of-the-art information system makes daily life easier and supports professionals in their work.

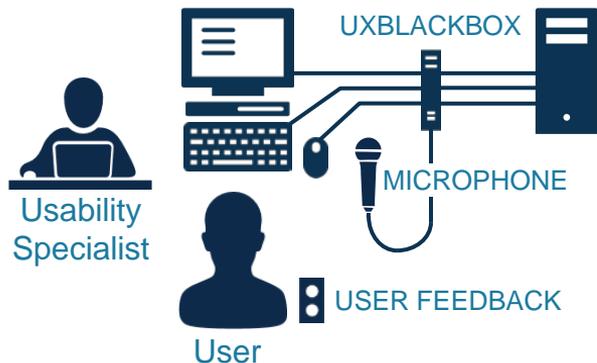
“

The Maisa portal brings public social and health care services directly to your phone.



# Vendor Selection Process

- Show, not tell, system capabilities (0 score for powerpoint)
- 30 user scenarios with 60-70 minute live vendor demos
- Specialized user evaluation of each scenario response
- Four remaining vendors given unscripted tasks to perform live
- Apotti staff performed tasks with expert evaluation, measurement
- Repeat process with two finalists



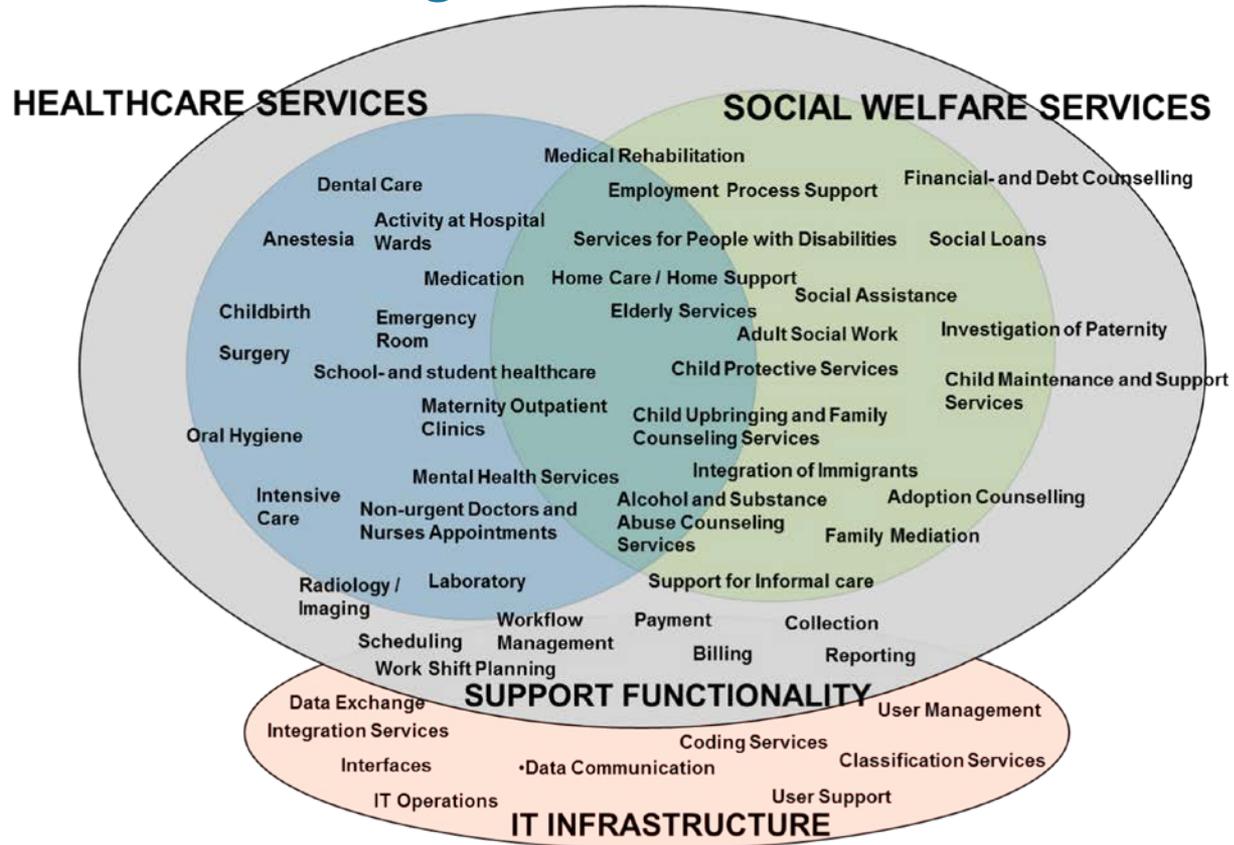
2013	16		Interested Vendors
2013	8		Initially Selected
2014	4		Dropped Out
2015	2		Finalists
2016	1		Winner Selected

# Development Process

- Initially used standard Epic project management (Orion) methodology (Epic manager over each module managing local implementation staff, Epic representative guiding how to build each module, pre-determined schedule of tasks for each worker)
- Discovered that Epic's staff members' knowledge of Finnish/EU healthcare processes, legal requirements, terminology, etc. was lacking, individuals couldn't complete their assigned tasks alone due to Finnish collaborative culture and many stakeholders, and that Apotti needed to manage their own staff due to greater needs for coordination and integration.
- Apotti created their own PMBOK-based project management method, that was much more collaborative, took much longer to complete, but produced better results in the long-term
- Epic sent 50 staff members from the US to live in Finland, learning from earlier projects where staff commuted; these earlier experiences caused Epic to re-think their approach and become more flexible
- Summary: Apotti respected and relied on Epic's knowledge, but insisted on changes to their standard approach, which Epic conceded.



# Functionality



# Unique Aspects

- Corporate structure
- Procurement process
- Development approach
- Vendor relationships
- Collaborative, inclusive, patient, transparent philosophy
- Sisu



# Apotti Lessons Learned

- Operate with transparency and respect for all stakeholders, no matter how long it takes
- Focus on usability and real-world performance over engineering specifications
- Take time to build support from local and national stakeholders for integration, interfaces, workflows, change management
- Plan for deep involvement of end-users and citizens in the procurement and design process
- Balance vendor expertise and local needs
- Design for the future, build for today



# Summary

- Agree on vision, strategy & outcomes
- Build rock-solid governance
- Lead nationally, perform locally
- Take responsibility for structure, process, outcomes
- Promote standards to ensure adoption, sustainability
- Be patient, be inclusive, be transparent, be respectful
- Take the long view



## Questions

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The Arch  
Collaborative  
a KLAS initiative

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