



# Establishing and Running a Healthcare Platform in the Cloud

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About Kainos

# kainos®

kainos®  
**Digital Services**

**evolve**  
innovation by kainos

kainos®  
**WorkSmart**

**evolve**  
innovation by kainos

# A Brief History of Evolve

Year	2010	2011	2012	2013	2014	2015	2016+
Customers	1	4	8	13	21	29	35+
Staff	14	30	41	56	82	110	150+



## 1st Customer

Ipswich Hospital NHS Trust select Kainos to deliver an **Electronic Document Management** system to digitise their policy and day-forward notes



## Evolve for iPad

Our first **secure by design, offline-first** mobile app running **exclusively on iOS** is released, giving clinicians back the portability of paper



## Cloud First

We adopt a **cloud-first policy for all new product lines** and start the process of moving Evolve to the Cloud



## Integrated Care

Our **cloud-only, multi-tenant** Integrated Care Platform is launched running **exclusively on AWS**

## Our Customers

Ashford and St Peter's Hospitals NHS Foundation Trust

Bradford Teaching Hospitals NHS Foundation Trust

Buckinghamshire Healthcare NHS Trust

Chelsea and Westminster Hospital NHS Foundation Trust

Carden

Colchester Hospital University NHS Foundation Trust

Countess of Chester Hospital NHS Foundation Trust

East Sussex Healthcare NHS Trust

Frimley Park Hospital NHS Foundation Trust

Great Ormond Street Hospital for Children NHS Foundation Trust

Heatherwood and Wexham Park Hospitals

InTouch Health

Lancashire Teaching Hospitals NHS Trust

Luton and Dunstable University Hospital NHS Foundation Trust

Peterborough and Stamford NHS Foundation Trust

Poole Hospital NHS Foundation Trust

Queen Victoria Hospital NHS Foundation Trust

Royal Brompton & Harefield NHS Foundation Trust

Royal National Orthopaedic Hospital NHS Trust

Sheffield Children's

NHS Foundation Trust

South East Coast Ambulance Service NHS Foundation Trust

South Eastern Health and Social Care Trust

South Tees Hospitals NHS Foundation Trust

South Warwickshire NHS Foundation Trust

Southport and Ormskirk Hospital NHS Trust

Stockport NHS Foundation Trust

The Clatterbridge Cancer Centre NHS Foundation Trust

The Ipswich Hospitals NHS Trust

The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust

The Pennine Acute Hospitals NHS Trust

University Hospitals Bristol

NHS Foundation Trust

West Suffolk NHS Foundation Trust

Western Health and Social Care Trust

Western Sussex Hospitals NHS Foundation Trust

Worcestershire Acute Hospitals NHS Trust

evolve

powered by Kainos

Why do our customers want cloud?



**Budgets Under Pressure**

Less CapEx Available.  
Moving to OpEx

Why do our customers want cloud?



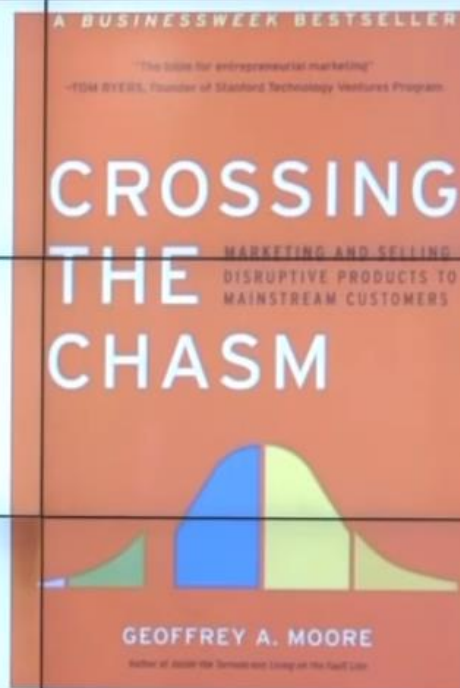
**Large onsite IT**

Long Rollouts  
Shortage of Skilled Staff  
"ility" Challenges

Why do our customers want cloud?



**Complex Upgrades**  
Downtime required  
Latency Between Updates



## The need for Integrated Care

**Royal College of Physicians'** "We must revolutionise the way we use information. We must create pathways in which information moves with patients across the system in real-time"

**Caldicott 2:** "people also expect professionals to share information with other members of the care team, who need to co-operate to provide a seamless, integrated service. ..."

**DoH Winterbourne View Final Report:**  
"All local authorities and their local safeguarding partners should ensure they have...information-sharing processes in place across health and social care to identify and deal with safeguarding...this requires a multi-agency approach including all partners"

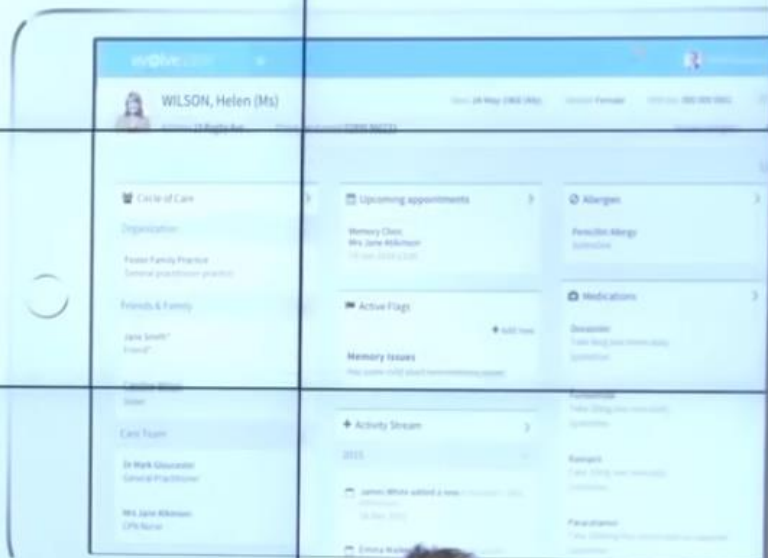
**Caldicott 2:** "For the purposes of direct care, relevant personal confidential data should be shared among the registered and regulated health and social care professionals who have a legitimate relationship with the individual."

**Victoria Climbié (The Laming Report):**  
"...systems were crude and information failed to be passed...information systems that depend on the random passing of slips of paper have no place in modern services"

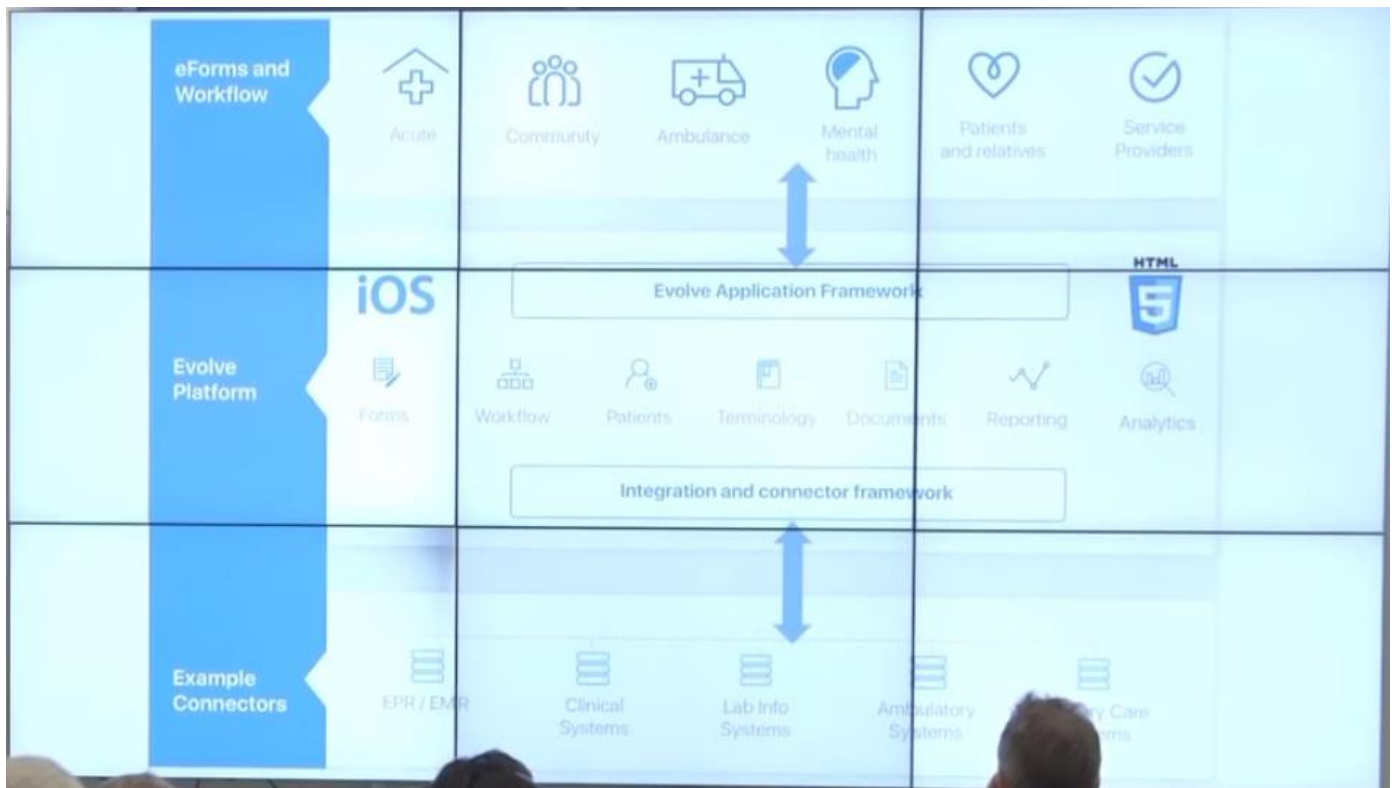
How do we bring together all the silos of medical information to enable a seamless information flow?

## The Evolve vision for Integrated Care

- Unified view
- Mobile overlay
- Cloud-based
- Complete picture
- Enhanced collaboration
- Patient accessible







# Establishing the platform



**3rd Party Software**  
Proprietary vs  
Open Source?  
Build, Buy, Partner?

## Establishing the platform



### Standards

HL7 v2  
FHIR  
BPMN  
oAuth  
OpenID Connect

## Establishing the platform



### Connectivity

VPN  
Internet  
N3  
HSCN

## Establishing the platform



### Architecture

Micro vs Mono  
Multi-Tenant  
On-demand  
Broad Access

Resource Pooling  
Elastic  
Measured

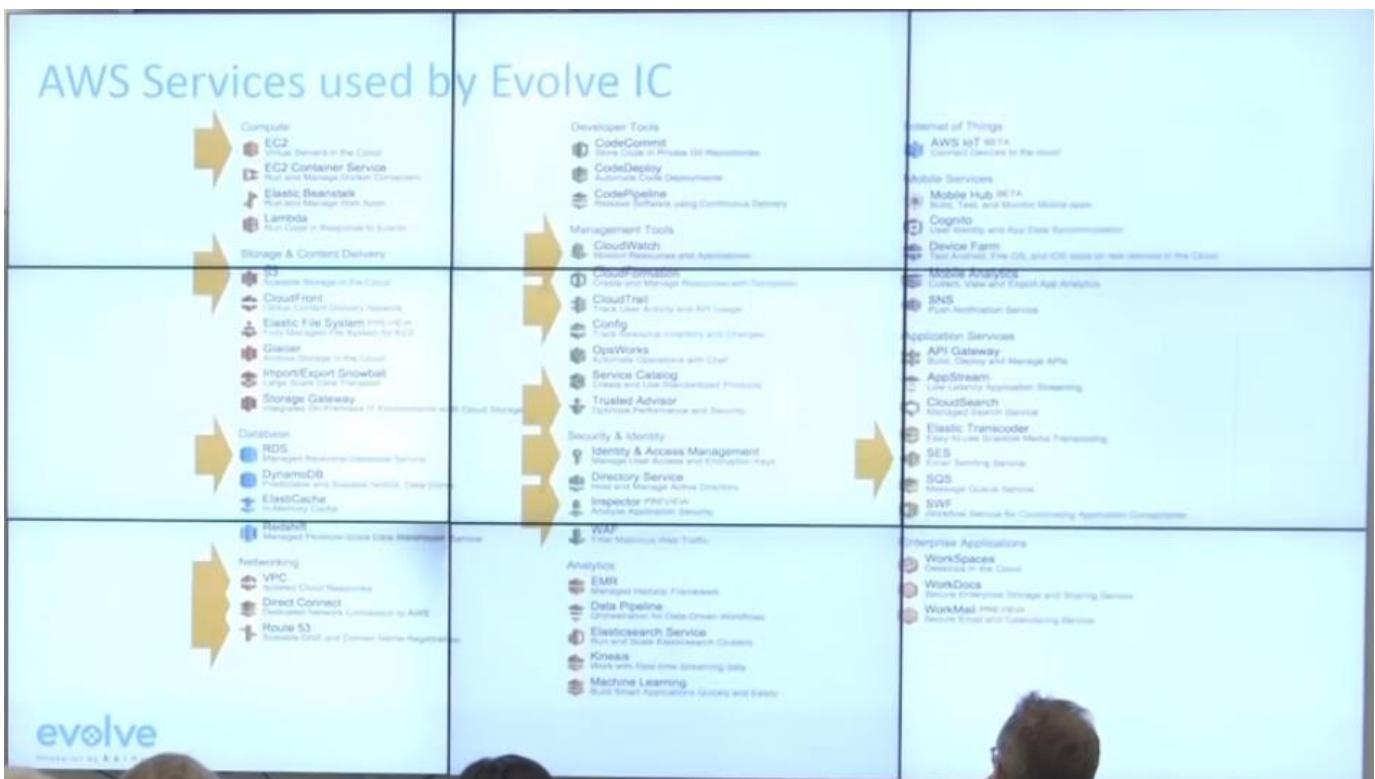
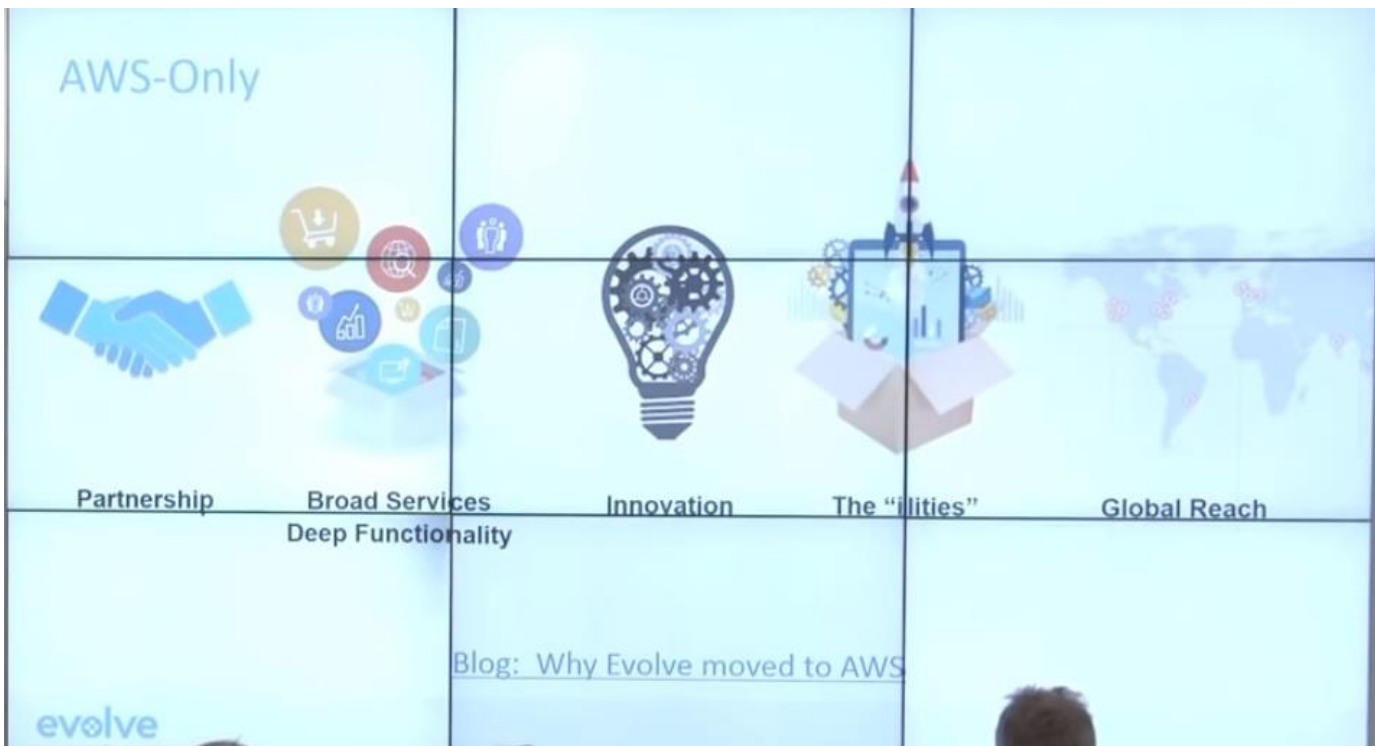
## Establishing the platform



### Cloud Provider

AWS  
Azure  
IBM  
OCSL  
UK Cloud





## Running the platform



**InfoSec**  
Privacy of PHI  
SOC  
HIPAA  
Risk Assessment  
DLP  
Vulnerability Mgt.  
...

## Running the platform



**WebOps**  
Infrastructure Monitoring  
Log Aggregation  
Performance Analysis  
HA  
Incident Resolution  
...

## Case Studies



- Telehealth provider
- 1,500 patient access locations
- "Care anywhere" via remote engagements



- First CCG Win
- Integration of data across primary care, secondary care, social care, mental health etc...

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