

Case study

Kainos leads National Health Service into a paperless future



HP Autonomy solutions provides platform for next-generation healthcare analytics

Industry

Healthcare

Objective

Create a simple to use, highly configurable, clinically focused end-user application to replace paper medical records. Also to find a more efficient way to index and extract the precise clinical data needed on a daily basis and provide it in a mobile environment so it can be accessed at the bedside

Approach

Transformed a generic Electronic Content Management (ECM) proposition with document management, scanning and workflow and leveraged appropriate products from the HP Autonomy portfolio to achieve groundbreaking results

IT matters

- Enables effective searches to increase staff efficiency, and delivers holistic intelligence to improve strategic decision making
- Provides integrated solutions that speed up development and time-to-market
- Indexes information for rapid retrieval of critical data

Business matters

- Eliminates paper records in line with Government directives
- Delivers an anticipated return-on-investment of 2.4:1
- Increases productivity and efficiency of healthcare professionals, improves patient care and cost management



“We have built an Electronic Medical Records solution, Evolve®, that is absolutely the market leader in the UK and we’ve built it on top of HP IDOL, which together provide a unique ability for clinicians to search and analyze unstructured data that was previously hard to access.”

– Nigel Hutchinson, head of the Evolve Business Unit, Kainos

Powering a new way to use medical records

The UK Government has set a deadline that the National Health Service should be paperless by 2018. This means replacing millions of paper files with Electronic Medical Records (EMR) and the UK’s leading EMR company is Kainos. Built on HP Autonomy platforms, its flagship product Evolve not only leads the digital revolution but also supports vital analysis of healthcare data.

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Challenge

Paperless deadline

The UK Government has set a target for the National Health Service (NHS) to go paperless by 2018 in a move that aims to save billions of pounds, improve services and help meet the challenges of an ageing population.

A core element of going paperless is the digitization of patient records, thereby making crucial information available to health and social care practitioners at the touch of a button. At the forefront of this drive is the leader of the UK Electronic Medical Records (EMR) market, Kainos, which has almost 600 employees and offices in the UK, Ireland and Poland. Its flagship EMR product, Evolve, is now used by 80 acute hospitals in the NHS.

“Evolve started as a paper digitization project for Ipswich NHS Trust almost five years ago,” explains Nigel Hutchinson, head of the Evolve Business Unit at Kainos. “They were looking for an Electronic Document Management (EDM) solution for their paper patient records and wanted something that was more clinically focused, dealing with patients, wards and hospital processes.

“They were very keen to partner with an organization that could help them develop this vision because they couldn’t find anything in the market that met their requirements.

At one end of the system there are large, monolithic Electronic Patient Record (EPR) solutions that deliver a ‘hospital-in-a-box’ and at the other end of the scale there are generic Enterprise Content Management (ECM) solutions that are not designed for the clinical environment. Ipswich saw an opportunity to work with Kainos to build a next generation EMR solution.”

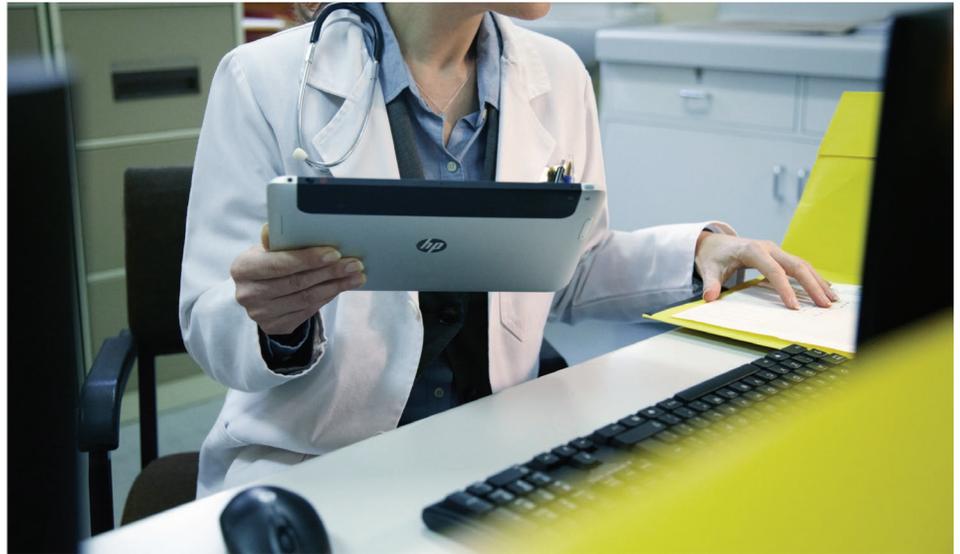
Kainos was looking for a technology that could not only optically read and index complex legacy paper-based information but could also extract document types and identify domain-specific concepts such as clinical disciplines.

Ideally, the technology would extract details of people, mapped to clinical disciplines, such as the mapping of a particular doctor to a specialty (Dr. Biggerstaff mapped to Cardiology, for example). In addition, Kainos needed powerful visualization tools to allow visual clustering of concepts and search results, and to facilitate intuitive ways for clinicians to handle returned information. The technology would also need to connect to and index information held in other systems, without requiring the ingestion of that information.

Solution

Analytics engine

Kainos was already partnering with HP Autonomy, whose software portfolio includes powerful management and analytic tools that process human information or unstructured data including social media, email, video, audio, text and web pages.



“We initially approached this opportunity looking at a generic ECM proposition with document management, scanning and workflow and investigated how we could apply the HP Autonomy products to that particular business problem,” says Hutchinson. “We chose HP Autonomy because we already had significant experience with the toolset so would not be starting with a blank sheet of paper. Also, it made more sense to use integrated HP technology.”

Kainos decided to build Evolve on the Application Programming Interfaces provided by three HP Autonomy products - HP Records Manager, HP Process Automation and HP IDOL 10.5. It used 28 years of information management expertise to improve efficiency, productivity and regulatory compliance. The IDOL analytics engine was co-opted to into Evolve because it automatically ingests and segments medical records and documents according to their content and concepts, making it easier to find and analyze specific information.

Kainos’ long-term goal is to provide a single interface allowing local and remote access to all clinically relevant information gathered from multiple sources, and to provide leading research and analysis tools against that information. HP IDOL’s connector-based architecture, pattern matching, clustering, indexing and analysis and visual representation tools are key to that strategy.

Benefits

Efficient healthcare delivery

Basing Evolve on HP Autonomy technology has helped make Kainos the UK’s market leading provider of digital services for healthcare – a sector long considered to be of national importance.

“Using HP Autonomy has sped our time to market by reducing application development times and standardizing on one architecture from one vendor also reduces development costs. This strong foundation layer gives Evolve users confidence on such factors as information security,” says Hutchinson. “We have continual input from HP people, particularly on the analytics side and this close working relationship allows us to get the architecture right and build a solution that will scale and perform.”

Evolve provides many benefits for hospitals, healthcare professionals and patients. It can cope with huge volumes – for example one recently signed contract will involve scanning 250 million documents. In addition to scanning existing paper documents, Evolve also encourages clients to implement processes that will stop the creation of new paper records.

Eliminating paper produces considerable savings with many larger hospitals spending up to two million pounds a year to create, move and store paper files. Hospitals use Evolve to develop e-forms which are useful when a patient is being seen over a long period of time. When designing forms they can use an Evolve community portal to access a library of existing forms that have been created by other trusts.

Customer solution at a glance

Applications

Electronic Medical Records

Software

- HP IDOL 10.5
- HP Process Automation
- HP Records Manager

Evolve works with handheld devices and this mobility combines with HP IDOL analytics to speed up the way clinician's access crucial information right at the bedside. They can connect to other hospital systems, so fewer appointments are cancelled because of missing information. They save time by inputting new consultation data at the bedside. Also, community workers such as district nurses can download all the files they need onto a handheld device then work off-line in patients' homes, eliminating the need to carry bulky paper files around.

"All of this helps to improve patient safety because healthcare providers in hospitals and in the community always have access to the right files and information at the right time. There's less likelihood of something going missing in the case file and they spend less time preparing for a clinic," says Hutchinson.

A by-product of these large digitization projects is that Kainos is managing terabytes of unstructured content and it now has the ability to analyze and get value from that content.

"Evolve is taking paper out of the equation altogether for direct patient and clinician interactions. This supports new ways of working that will result in safer and higher quality of care for patients."

— Graham Softley, associate director of IT, Buckinghamshire Healthcare NHS Trust

"Once we start to understand what's in the clinical record and connect up to other systems, we obtain a more data driven view of what's gone on with the patient. We can use HP IDOL to gain value from unstructured data, which has not been effectively utilized until now, and enable a truly comprehensive healthcare analytics approach to uncover trends, patterns and relationships that could help improve strategic decision making," concludes Hutchinson. "This is the start of an exciting journey which promises to shake up the way the industry thinks about how healthcare analytics can significantly impact major key performance indicators such as patient outcome, cost containment, and organizational efficiency."

Evolve is being used by Buckinghamshire Healthcare NHS Trust. Associate director of IT, Graham Softley says: "We've been using the Kainos Evolve product to deliver paperless outpatient clinics and currently have about 180,000 complete patient records scanned into the system. We're very pleased with how that's taking significant volumes of paper out of the equation for direct patient and clinician interactions. We no longer have to carry around bulky files, electronic records are not misplaced and from a patient point of view, clinicians should have all the information they need to make timely decisions. This type of working is an opportunity to re-engineer the way we provide our services and interact with our patients; to look very critically at the way we have worked in the past and to find new ways of working where we can use these tools to deliver safer and higher quality care."

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