

Healthcare transformation, we'll take you...

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HealthCare

THERE

Edition 3

12 **UP TO 50% DOSE REDUCTION**
in pediatric radiology with
integrated X-ray system DX-Si

16 **DUTCH MEDICAL CENTER**
integrates all patient data in
one Electronic Patient Record

19 **PATIENT VOLUME INCREASED**
by 15% through introduction
of CR Mammo

25 **ONCOLOGY INSTITUTE**
implements enterprise-wide
RIS/PACS in only one month

30 **FIRST MEDICAL CENTER IN BALKAN**
goes all-digital and increases
productivity by 30%

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Vice President Region Europe,
Agfa HealthCare

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AP-HP Paris, Hôpital Européen
Centre Pompidou

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DEAR READER,

A warm welcome to the third edition of our quarterly customer publication, called 'There'. This magazine is a distinctive, new publication providing in-depth, contemporary information on trends and events impacting healthcare and society at large.

Why is 'There' different? In past years, we have published a magazine featuring customer application stories. Although this was well received and highly read, we felt that, as a leading healthcare provider, we could do more. As a result we have included several interviews and articles in this publication to provide our readers with a broader view of healthcare as a whole.

In this edition you will find several new case studies and interviews, which we invite you to read. The studies reflect only a small fraction of the success stories we have accumulated over the past year, but are a good indicator

of what we have achieved. For more details and other information, we invite you to contact your Agfa HealthCare representative.

Your feedback and thoughts on this, and our previous editions, are most welcome and we will take these into account as we move towards our fourth edition, expected this summer.

For more information and details, I invite you to read on. At the same time, I also encourage you to fill out the card included in this magazine, which will allow you to receive our magazine for free on a quarterly basis.

HAPPY READING,

Eric Maurincomme
Chief Strategy and Marketing Officer
Editor-in-Chief 'There'
Agfa HealthCare

VIENNA, unique and authentic historical charm in a modern city

Vienna, the capital of Austria, is situated on the banks of the Danube and counts over two million inhabitants today. The city can trace its history back to Roman times and was a key trading site in the 11th century before becoming the capital of the Babenberg and subsequently the Habsburg dynasties. Vienna has been a European trading hub for many hundreds of years and was the capital of the Austro-Hungarian Empire in the 19th century. Today, this European capital of culture offers visitors a unique and authentic historical charm and is recognized as being one of the most romantic, culturally vibrant, musically driven and artistic centers in the world. In recognition of its achievements, we have selected a number of insights that make Vienna what it is today. We bundled them into a number of stunning images that you will find within this publication.



INTERVIEW WITH HANS VANDEWYNGAERDE,

Vice President Region Europe, Agfa HealthCare



Hans Vandewyngaerde (Belgian, born 1965) currently holds the position of Vice President Europe at Agfa HealthCare and is responsible for the overall management and success of the company's European operations. Hans joined Agfa HealthCare in 2004 as General Manager for the Benelux. In 2006 he was appointed General Manager Region West and he became the General Manager for HealthCare IT in EMEA, Asia Pacific and Latin America in 2008, prior to being appointed to his current position later that year.

Healthcare transformation in Europe – exploring the challenges and opportunities

'There' spent some time with Hans Vandewyngaerde, Agfa Healthcare's Vice President for Region Europe. In this interview, we explore the challenges and opportunities faced by diagnostic image intensive organizations in Europe as the sector continues to transform from analog to digital to IT.

We hear a lot of talk around 'healthcare transformation' and its significance. What is your take on this?

Healthcare transformation is about a state of mind. Quite simply, it's about driving the acceptance of change, which will create a rethink, and eventually improve the way in which hospitals and care facilities work and as a result bring efficiency gains. Healthcare transformation is much less an IT challenge as it is a people challenge. Of course, this statement should not lead us to oversimplify what is at stake: the alignment of healthcare policies,

the change in the financing scheme, the introduction of new paradigms such as 'Patient Safety', the future of certification and accreditation. We all know that we live in a very complex environment. Therefore it is useful to define missions and goals such as 'healthcare transformation'. In this field however, the real achievements are always brought through grass-root operational capacity and knowledge. The healthcare professionals are always very eager to address the very practical issues, which I think is one of their best assets.

To be honest, the healthcare market is continuously flooded with new solutions, some of them very innovative and exciting. And quite rightly, many care facilities take notice. But as with change in any organization, considerable effort is needed to ensure that the users of the solutions can not only work with it, but have also been convinced that these are a better alternative. It is easy to decide on change to achieve certain goals or meet specific pressures (cost savings, efficiency gains, and so forth), but if you don't have the support of your organization, no tool in the world will enable you to achieve these.

Is Agfa HealthCare different?

I am convinced it is. We have never really considered ourselves to be a producer of medical equipment or even an IT vendor; we are very much a healthcare company. We have extensive experience in delivering healthcare solutions, but also clearly understand

that our first challenge is always about driving acceptance and generating buy-in from all parties involved. This is also reflected in our business model, which is driven by flexibility, partnership and training. The tools we deliver, from film to CR and DR to PACS, are world class, but they would not be a success without the right support. So transforming healthcare is about driving a mindset of change, a people change if you wish, supported by the tools to achieve the results envisaged. In our specific case therefore, digitization is not the goal, it is merely the means to an end.

What is the overall rate of transformation in Europe? What are the challenges?

It is hard to talk about Europe in a single sentence. Despite the fact that there are many things that unify us, most markets in Europe have their own cultures, approaches and priorities, when it comes to healthcare. Yes, in general they are all aiming for a similar goal: to make healthcare more efficient, open and affordable. However since transformation is very much a state

“Agfa HealthCare delivers tools to meet the needs of various markets, based on three principles: flexibility, affordability and service delivery.”

of mind, the rate of transformation and where changes are implemented is very varied in Europe, from country to country and even region to region. Driving buy-in for change is, especially in Europe, very much a regional challenge. In many Nordic markets, for example, the decision to implement an integrated healthcare solution was agreed on and implemented nationwide in around eight years. In Germany, which is historically more regionally driven, regional healthcare integration was agreed on as a sound approach; while in France it was decided to take a more national viewpoint, driven by EPRs. All three are aiming for the same goals, but have pursued different avenues based on where the highest level of acceptance was. But at the same time, we see some level of convergence. If the new French Law is successful and will allow for

decentralization with the installation of Regional Health Authorities, France will be closer to the German organization. Our strong position in Europe allows us to inform our partners and clients of what has worked well, what works and what could or should be done but taken into account the specificity of each country or regions.

Now obviously, from our perspective this means that we do not only have to understand how to generate buy-in, but also deliver the different tools to meet the different approaches for each of the markets. Our approach here is very much tailored to those needs, driven by three basic principles; flexibility, affordability and service delivery. Three big words that simply mean that we can deliver a full suite of diagnostic imaging solutions, from modality through CR, to PACS and advanced clinical and administrative applications, or provide our customers with any of the subsets that make up this chain. Practically, we have long understood that investments in healthcare can vary and change over time, and have therefore tailored our solutions to be vendor-neutral and fully integratable with almost any legacy system. Why? Quite simply because you will be hard pressed to find any institution that does not have some sort of legacy solution in place that needs to be accounted for. And since change is a step-by-step process, legacy is always part of the reality.

So the challenges are to ensure that healthcare companies like Agfa HealthCare understand the dynamics that drive healthcare in the different markets and ensure we can deliver solutions to meet the challenges set out by those dynamics.

Is e-health part of this challenge in Europe?

I would challenge the idea of e-health as a purely practical term. Like transformation, e-health is about a state of mind – a conviction that sharing medical information can make a difference in the current levels of healthcare offered to the general population. Is Europe ready for it? Well, it is already doing it – the integration of regional healthcare, the expansion

“It is always about the patients, no matter how close or how far you are from them.”

from single to multi-site facilities and solutions are all playing their part in achieving this. I think e-health has unjustly been promoted as a sweeping, all-encompassing change that would link care providers from around the world. I think that in the minds of many care providers, this was a little too much. So it did not generate the buy-in on that level, but it is very much there, and growing!

What is Agfa HealthCare’s role in this?


We are healthcare transformers. That means that we are drivers of positive change to help our customers meet their solid goals. Moving beyond the pure state of mind discussion, our innovative nature lies in the fact that we evolve with the market, and as new ideas and approaches become accepted (in part driven by our efforts to generate buy-in for these), we can deliver solid solutions to meet real needs. When analog moved to digital, we took our customers into CR; when digital became IT, we evolved with the market and moved our customers into PACS. Today it is all about single to multi-site and regional integration, which we support through, amongst others, our data center solutions. In short, we have always offered solutions to meet those needs and supported our customers in their evolution. Proof of that lies with the fact that we are now on our 6th generation PACS and our 5th generation RIS. Diagnostic Imaging is our DNA: we are a diagnostic imaging and IT company.

Looking at it from a practical perspective, who will benefit from all this change?

The idea is that we are all winners, but we know that practically this is hard to achieve. In the end, the basic idea is that we help those who help others. That means that our efforts to support healthcare institutions improve the way they work in turn lead to meeting their goals of improving the care they offer to their patients.

So it is about the patients?

It is always about the patients, no matter how close or how far you are from them. It is the patients’ health that needs to be addressed, supported and improved, and we are there to support those in the front line, the clinicians and the nurses, and all healthcare professionals in ensuring they can deliver the best results with the best tools. •



VIENNA INSIGHTS

PERFORMANCE

The Spanish Riding School in Vienna is the only institution in the world where the classic equestrian skills (*haute école*) have been preserved and are still practiced in their original form. Many years of training fuse horse and rider into an inseparable unit. The audience is treated to an unforgettable experience by the precision of movement of the Lipizzan horses in perfect harmony with the music. In the course of gala performances, visitors experience unique presentations of the Lipizzans in the most beautiful riding hall in the world, which was impressively outfitted by baroque architect Joseph Emanuel Fischer von Erlach between 1729 and 1735. It was originally built to provide aristocratic youths with the opportunity to take riding instruction.

PACS BECOMES REGIONAL INTEGRATION ENGINE EXTENDING IMAGES AND DATA THROUGHOUT BASQUE COUNTRY

With the implementation of 19 PACS sites from Agfa HealthCare, the region's Public Health System will soon service a population of more than 2 million

INTERVIEWEE Mr. Martin Begoña, CIO Osakidetza

INSTITUTION Osakidetza, Basque Health Service, Spain

Under the direction of the Public Health Department, Osakidetza provides all hospital-based and outpatient medical services in the Basque Country (Spain's autonomous country). To expedite patient services, the organization turned to Agfa HealthCare's IMPAX™ Picture Archiving

and Communications System (PACS), its Radiology Information System (RIS) and multiple Computed Radiography (CR) units to exchange images and data quickly and effectively throughout 99% of the region's public hospitals and doctors' offices.

OSAKIDETZA IS 'CONTROL CENTER' FOR IMPAX ROLLOUT

Osakidetza is a public company that serves as primary healthcare provider for the Health Department of the Basque Country. In Spain, healthcare competencies are not centralized and belong to the different autonomous communities. Osakidetza promotes three geographical health areas, each covering primary care, hospital care, and mental health. Included in this coverage are common units such as blood and tissue banks.

The organization serves more than 2 million people throughout the region, and management organizations affiliated with Osakidetza oversee 18 hospitals and more than 300 unique health centers. These public health services are provided through approximately 5,300 affiliated doctors. There are also about 25,000 clinicians, administrative and other support professionals who work for Osakidetza region-wide. Annually, Osakidetza produces about 2.5 million radiological studies throughout the region. With multiple scans produced for each study, the total amount of individual images can reach roughly 150 million. According to Mr. Martin Begoña, CIO of Osakidetza, "Thanks to the speed and efficiency of Agfa HealthCare's IMPAX, Osakidetza's group of 200 radiology professionals will eventually surpass the work of more than 2,000 clinical professionals."

Osakidetza decided to implement its Digital Radiological Image Project in independent phases. Currently, in the first phase, the goal is to install equipment and systems in 80% of the radiology departments. This conversion will encompass five main regional hospitals and 25 ambulatory and health centers.

"Without doubt, Agfa HealthCare has superior expertise and knowledge of IT-based workflows."

Mr. Martin Begoña, CIO



ADDRESSING THE INSTITUTION'S MISSION

Mr. Begoña: "Osakidetza's mission is to provide Basque Country citizens with public health services, and to satisfy these needs with fairness, efficiency and quality." This mission is to be accomplished through the development of promotional activities supporting disease prevention and overall health improvement. In that sense, Osakidetza's purpose is integral health service.

Osakidetza's organizational structure allows it to completely manage the provision of healthcare services. It has a complete view of patient needs nationwide and can therefore provide the best healthcare solutions tailored to specific requirements of the local health environment. "In fact," says Mr. Begoña, "the vision of Osakidetza is to become a model patient-oriented healthcare corporation systemwide."

According Mr. Begoña, "Agfa HealthCare is enabling both the Basque Country vision and the Osakidetza mission to be successfully completed." Agfa HealthCare has been present in Basque Country for more than 20 years, first in X-ray film and processing equipment, followed by imagers and digitizers, and later, integrated digital imaging and information systems. Based on the established successes of the overall

IMPAX RIS/PACS, CR systems & DRYSTAR™ imagers.

Agfa HealthCare corporation, and the relationship of Agfa HealthCare with Osakidetza and its healthcare facilities, the choice was made to deploy the company's PACS, RIS and CR solutions systemwide.

MEETING THE NEEDS OF OSAKIDETZA

To help define parameters for the PACS project, Osakidetza considered the need to improve all aspects related to the radiology services of its centers. While isolated experiences of using digital image technologies had been developed in some centers, Osakidetza wanted to globally address this matter and standardize the productivity, quality and efficiency of all its services.

Osakidetza's objectives were as much qualitative as quantitative, but always well defined, and always encompassing three important dimensions: patient benefits, clinical benefits and benefits to the general organization. These in turn improve service to the patient.

For clinical professionals, the benefits include more simplified radiology procedures, easy and quick access to all clinical information, and the upgrading of radiological equipment.

Organizational benefits are many, such as cost reductions through optimized imaging and information distribution thanks to the speed and efficiency of an all-digital workflow. Environmental issues are also addressed by eliminating conventional processes such as silver recovery from old film and chemistry, and the transport, storage and safe disposal of fixer and developer. Finally, in a fully integrated digital workflow, all imaging and data revolves around the patient. From an organization perspective, this helps break down traditional barriers between clinical departments.

Further, Mr. Begoña says that, "Thanks to the integrated RIS/PACS, the extended lead-time for performing radiological exams has disappeared, and significantly more detailed imaging for clinical use is dispatched quickly to referring physicians. Previously, such processes could take weeks. Now, it is more instantaneous."

IMPAX RIS/PACS

- » Ability to integrate images and information throughout a clinic, hospital, province, large region or nation.
- » Full DICOM/HL-7 compatibility links IMPAX PACS to wide range of modalities.
- » Combines diagnostic imaging and RIS data with HIS, LIS, pharmacy, admitting and other critical demographics from multiple software programs.





DID YOU KNOW...

- » 'Autonomous Community' is an exclusive designation. Spain is divided into 17 such communities. The nation also has two 'Autonomous Cities'.
- » The Basque community is among Spain's wealthiest with rich iron deposits supporting giant steel and shipbuilding industries.

GREAT RESULTS CREATE MORE OPPORTUNITY

To date, Agfa HealthCare has installed all CR digitizers and DRYSTAR direct thermal imagers, the centralized IT infrastructure including RIS, Integration Engine, etc., and its IMPAX PACS at two sites (one hospital and one primary care center). Mr. Begoña says: "The organization is highly satisfied with the installation process. Agfa HealthCare has successfully integrated its multiple solutions with a high degree of flexibility, and met the varied requirements of each installations' unique situation. Without doubt, Agfa HealthCare has superior expertise and knowledge of IT-based workflows."

Finally, Agfa HealthCare is helping Osakidetza envision innovative technologies to further serve the Basque region. Mr. Begoña says: "Because the relationship between Agfa HealthCare and Osakidetza is highly synergistic, it's facilitating the evolution of more joint projects in radiology and other healthcare disciplines in the years to come." •

THE MOST COMPETITIVE SOLUTION

Agfa HealthCare was awarded the full PACS expansion project over five global and regional competitors, with the contract signed in late 2007.

The company provided Osakidetza a well-defined offer, covering a full and unique solution for the needs of the three-dimensional PACS Project. Included were CRs and DRYSTAR™ imagers in up to 28 sites (59 CRs, 52 imagers, and 19 Full Leg/Full Spine (FLFS) CR cassettes.). The offer also involved implementation of 19 PACS sites (5 clusters- 5 Hospitals, 15% Primary Care Centers) using IMPAX version 6.3.1. A centralized RIS (version 5.5.1) with speech recognition was implemented with the entire RIS/PACS linked to all clinical applications including 3D, Ortho, and Mammography. Each RIS/PACS site is also designed to easily interface with various third-party hospital information systems (HIS) at each location.

Further, according to Mr. Begoña, "The project contributes a series of fundamental qualitative benefits in terms of higher quality of patient services through faster reporting of imaging procedures back to the patient's physician, and having all radiological information in a faster, more accessible digital form."

Quantitatively, he says there are also a series of benefits that directly impact bottom line costs and improve workplace efficiency among clinical professionals thanks to time savings using fast, digital workflows that optimize radiology processes.

The project began in the first months of 2008. The first stage will extend to the middle of 2009. "Although it's an extremely complex project, the dedication and the work of the professionals involved are moving it along very efficiently," Mr. Begoña says. "Agfa HealthCare is, of course, in charge of its full installation, integration, migration, and support. This is the glue keeping all necessary elements in place."

"Agfa HealthCare is the glue keeping all necessary elements in place."

Mr. Martin Begoña, CIO





VIENNA INSIGHTS

TRANSFORMATION

Representing many periods and styles, Vienna is a rich confection of architecture, ranging from elaborate baroque monuments to 20th century innovations. The Hundertwasserhaus, designed by Friedensreich Hundertwasser to counter the clinical look of modern architecture, is one of Vienna's most popular tourist attractions. Most buildings in Vienna are relatively low – few are higher than 40m. The number of high-rise buildings is kept low by building legislation aimed at preserving green areas and districts designated as world cultural heritage.

HOSPITAL-WIDE ONLINE ACCESS TO CARDIOLOGY INFORMATION

IMPAX Cardiovascular maximizes workflow and allows for increased efficiency of care processes

INTERVIEWEE Dr. Luc Janssens, Head of the Heart Center
HOSPITAL AZ Imelda hospital, Bonheiden, Belgium

The AZ Imelda hospital in Bonheiden, Belgium, is diligently shaping its future. The implementation of Agfa HealthCare's innovative RIS/PACS solution in 2000 was the hospital's first step towards complete digitization. In May 2007, the hospital's Heart Center took another step when it decided to install IMPAX™ Cardiovascular, Agfa HealthCare's cardiovascular PACS and information management solution, which allows for faster and better-informed decision-making.

THE NEED FOR AN INTEGRATED CARDIOLOGY INFORMATION SYSTEM

Located in the heart of Belgium, the AZ Imelda hospital in Bonheiden was among the first hospitals to implement Agfa HealthCare's IMPAX Radiology Information System (RIS) and Picture Archiving and Communication System (PACS). The hospital's Heart Center made the leap in 2007, first by digitizing its imaging, next its reporting flow. Before Agfa HealthCare's IMPAX Cardiovascular was implemented, the archiving and distribution of cardiovascular information did not always run smoothly. Dr. Luc Janssens, Head of the Heart Center, explains: "Archiving was space- and time-consuming, and studies sometimes got lost. To solve these practical problems, we needed an integrated, hospital-wide cardiology information system to make our images and reports available at the click of a mouse."

RELYING ON AGFA HEALTHCARE'S EXPERTISE

"We relied on Agfa HealthCare as a leading supplier of high-quality healthcare solutions. We were already acquainted with their technical, clinical and practical know-how, as well as with their vision on integration. When we decided to digitize the Heart Center, our choice for Agfa HealthCare's IMPAX Cardiovascular was rapidly made," says Dr. Janssens. PACS Manager Eric Verschueren adds: "Unlike other suppliers, Agfa HealthCare focuses

on solutions instead of on products. To develop these solutions, Agfa HealthCare relies on longstanding expertise in healthcare information systems and in close collaboration with customers. Agfa HealthCare was the only supplier that could offer an integrated solution supporting the entire hospital."

GRADUAL DEPLOYMENT AND STRONG PROJECT MANAGEMENT

IMPAX Cardiovascular was gradually deployed into AZ Imelda starting mid May 2007. Agfa HealthCare was well aware that the complexity of its projects required strong project management for successful implementation. The project manager provided a single point of contact for the customer, to coordinate the implementation, goals, budget and timeline. He supervised the project from start to finish. Dr. Janssens explains: "The skill, the precision and the efforts of both the Agfa HealthCare project team and our own team have led to a smooth implementation, which has reinforced my trust in Agfa HealthCare."

"Thanks to the IMPAX Cardiovascular solution and a redistribution of the workload, we have already seen an efficiency improvement of 16%."

Dr. Luc Janssens,
Head of the Heart Center



AZ IMELDA HOSPITAL, BONHEIDEN:

1,400 employees. 550 beds. **CHALLENGES:** Implement an integrated cardiology information system. **SOLUTION:** IMPAX Cardiovascular Suite. **BENEFITS:** Centralization of cardiology information. Efficiency improvement of 16%. Better interaction between employees.

A number of key users were designated and they received specific training to get acquainted with the user-friendly IMPAX Cardiovascular. They in turn transferred their knowledge to other users.

FASTER AND BETTER-INFORMED DECISION-MAKING

The Heart Center's 16 cardiologists and 19 technologists are now reaping the benefits of the IMPAX Cardiovascular solution. Dr. Janssens: "The main advantage of the new system is that cardiology information is centralized. Patient data and images are available online on any workstation in the hospital. Relevant prior images and reports can easily be consulted and comparisons made between studies. The speed and quality of the decision-making process have both been increased. Thanks to the IMPAX Cardiovascular solution and a redistribution of the workload, we have already seen an efficiency improvement of 16%. This has enabled us to balance out part of the department's increased activity." Agfa HealthCare's IMPAX Cardiovascular has also led to improved interaction between the Heart Center's employees. Dr. Janssens: "The online availability of images and data is especially useful during our team meetings. In the past, we had to select the images beforehand. Today, we had a meeting with 15 staff members. We could immediately call up any image we needed, including echo images. The surgeons are particularly pleased with this service. Finally, IMPAX Cardiovascular has proven to be a valuable asset in teaching our trainees." •

UP TO 50% DOSE REDUCTION WITHOUT IMPACT ON DIAGNOSTIC QUALITY

Pediatric Radiology of Erlangen University Hospital replaces conventional methods by integrated X-ray system DX-Si from Agfa HealthCare

INTERVIEWEE Ingeborg Daschner, Radiographer for the Institute of Radiology
HOSPITAL University Hospital, Erlangen, Germany

In pediatric radiology, Agfa HealthCare's DX-S CR System is very popular thanks to its high image quality and its potential for dose reduction. These benefits are substantiated by studies conducted at the University Hospitals of Giessen and Jena in Germany. A study performed in 2007 at the Pediatric Radiology Department of the University Hospital Giessen and Marburg proved a dose reduction of up to 50% is possible, without loss in diagnostic quality, in comparison with film/cassette systems of 400 speed class. A study by the Institute for Diagnostic Radiology of the Friedrich Schiller University, Jena, yielded similar results in Spring 2008.

In the context of a replacement purchase, the highly promising results from the studies in Giessen and Jena sparked the Institute of Radiology at the University Hospital in Erlangen's interest in the DX-S CR system. This hospital with 1,314 beds cares for nearly 60,000 inpatients and more than 163,000 outpatients annually. In Spring 2008, the decision was taken in favor of an Agfa HealthCare DX-S system for the pediatric intensive care unit, and an Agfa HealthCare DX-Si integrated solution for the Radiology department of the Pediatric Clinic.

Since June 2008, the Institute has been working with the integrated DX-Si solution. 'Integrated' means that one central workstation manages the image acquisition of the DX-S CR system – as well as the automatic exposure function of the X-ray unit by way of a bidirectional interface.

COMPLETELY INTEGRATED INTO THE RADIOLOGY WORKFLOW

"Pediatric radiology offers particular challenges for image acquisition and processing systems," explains Ingeborg Daschner, who has worked for many years as a radiographer for the Institute of Radiology at the University Hospital in Erlangen. It is not just because a child



"The system is easy to learn and to handle, and we have familiarized ourselves with it very quickly. Acceptance is very high today on the part of all staff members. Dose optimization, in particular, provides a benefit to patients."

Ingeborg Daschner, Radiographer

as a patient is a challenge but there are specific issues which arise in particular in neonatology and with critically ill children. "Very small objects are X-rayed, requiring highly precise work and representations, which are true to the detail. We have to achieve the best result possible, at the lowest possible dose," underlines radiographer Jana Glöckner.

DX-Si CR SYSTEM/MUSICA²

- » Compact DX-Si system designed to be placed near the patient, enhancing workflow flexibility while offering outstanding image quality.
- » MUSICA processing software provides reliable, outstanding image visualization with automatically optimized image processing.

In order to accomplish this, a high-resolution system is required. In Erlangen, too, the DX-Si has to bear comparison with the image quality of conventional film/cassette systems because it has superseded conventional X-ray. There is another aspect which is of importance to Ingeborg Daschner: "It has to support the workflow in the department, and it has to be easy to use."

Today the DX-Si system is completely integrated into the radiology workflow. The University Hospital in Erlangen has used a Radiology Information System (RIS) for years; wards send their X-ray job orders to the Hospital Information System (HIS) via the RIS. From there, orders are transmitted directly to the respective modalities via a DICOM worklist. In order to speed up processes, and to safeguard quality in image acquisition, exposure parameters and imaging processes are stored in the DX-Si, depending on the type of exposure and the age of the child. Based on these exam-related exposure parameters the radiographer can make selections. "This support provided by the DX-S CR system helps to reduce the workload for my team members and myself significantly," Ingeborg Daschner explains. After the patient has been X-rayed, the cassette with the needle crystal plate is read by the DX-S CR system, and the image is available for a first evaluation after only a few seconds. The image can then be authorized for reporting and transmitted in a fully automated process.



In total, the results from the studies in Giessen and Jena appear to be reinforced by the work done in Erlangen: at this university hospital, too, a dose reduction by 50% in comparison with conventional methods can be achieved with the same diagnostic quality. “The system is easy to learn and to handle, and we have familiarized ourselves with it very quickly. Acceptance is very high today on the part of all staff members. Dose optimization, in particular, provides a benefit to patients,” Ingeborg Daschner summarizes the first months of work with the DX-Si. •

AGFA HEALTHCARE'S CONTRIBUTION

DX-Si, a groundbreaking compact solution, designed for decentralized or in-room use for general radiography, pediatric and emergency environments.



DOSE REDUCED, TIME SAVED, CONVENIENCE ENHANCED

The workload of radiographers has been reduced significantly since the introduction of the DX-Si system. The automated procedures described above contribute to this advantage. As a consequence, the time spent on performing exams is reduced, and radiographers are given more time to care for the little patients and their parents. The acquisition of full leg/ full spine (FLFS) images is supported by special software in the DX-Si. “This provides support in generating images, and consistent exposure of all vertebral body regions,” explains Ingeborg Daschner.

Patients, too, benefit from the DX-Si. Due to reduced waiting times by smooth and fast work processes in the department, patient convenience is enhanced further. Today, the patient can

be discharged from the department after a few minutes, and the acquired images are immediately available for reporting. In addition, the DX-Si system generates image results which are more constant compared to conventional methods. “This criterion is particularly important with children who are dose sensitive,” underlines Ingeborg Daschner.

Last, but not least, radiologists also benefit from the new digital system. The features of Agfa HealthCare's digital image processing software MUSICA²® support them significantly in their reporting process. This includes subsequent image processing, and improved reporting, by zooming and window/level. The well-balanced representation of bone and soft tissue within an image thanks to the new image processing algorithms of MUSICA² allows a multitude of questions to be answered based on a single image.

DID YOU KNOW...

- » With the DX-Si CR system, technologists can stay with the patient during the entire examination, which is of particular benefit to children, older or anxious patients.
- » Thanks to the DX-Si CR system technologists take measurably fewer steps throughout the day.

VIENNA INSIGHTS

CREATIVITY

Today Mozart, the pop star between baroque and revolution, is the best known musical genius of all time. He spent his most creative, most successful years in Vienna. The Mozart Year 2006 celebrated Mozart's 250th birthday with many Mozart concerts, operas and other activities all year long.



AFFORDABLE ARCHIVING AND DISTRIBUTION SOLUTION FOR CR ENVIRONMENT IMAGE MANAGEMENT FROM AGFA HEALTHCARE

As part of its ongoing efforts to support its customers in their transformation from analog to digital, Agfa HealthCare has recently introduced a new viewing, archiving and distribution solution for CR data management in Computed Radiography environments.

The SE software Suite is a complete and self-contained software solution that enables the manipulation, management and centralization of medical imaging data. The modular design is tailored to the needs of environments like private practices, small imaging centers, orthopedic, chiropractic and veterinary practices and imaging clinics.

The SE software Suite is composed of three central components to support a broad range of applications – SE Server, SE Client and SE Standalone. The SE Standalone is a single user solution that enables each location to manage its data



in an independent setting. The SE Client Server is a multi-user, multi-modality DICOM archive software, designed for supporting online storage configurations and includes web server functionality for remote viewing of stored images.

The SE software Suite can be fully integrated with Agfa HealthCare's CR systems and hardcopy imagers. •

SE is sold through our authorized dealers.

IMPAX DATA CENTER

Delivering the next level of enterprise image storage and management

Introduced to the European and United States markets in 2007, Agfa HealthCare's IMPAX™ Data Center is an integral part of the company's e-health strategy for multi-site and regional healthcare enterprises. A vendor neutral enterprise imaging infrastructure, the Data Center solution enables healthcare facilities to efficiently consolidate clinical imaging information including clinical DICOM data objects and DICOM encapsulated non-imaging objects such as waveforms, structured reports and PDFs, from these disparate systems into a single point of storage and distribution. With its engineered adherence to open standards, the IMPAX Data Center can be part of any existing or new Agfa HealthCare PACS, or exist in legacy or multi-vendor environments.

The IMPAX Data Center provides the foundation for healthcare facilities that seek to take control of their clinical imaging information using standards-based infrastructure. Its scalable and fault tolerant architecture ensures a fit into any mission critical solution. As a single point of data access, it is designed to deliver a consolidated view of medical images and diagnostic results to the point of care across hospital groups, regional healthcare organizations and national medical archives.

Storage strengths aside, another key benefit of the IMPAX Data Center is the consolidation of information, which provides end users with a single point of access for medical information,

employing common viewing solutions for consistency and simplicity. Agfa HealthCare provides its customers with three tiers of viewers, including the feature rich IMPAX Enterprise viewer, the IMPAX Mobility viewer with rendered image delivery across bandwidth restricted networks and the IMPAX Data Center Viewer, a works-in-progress browser based viewer, designed to image enable users across wide area networks.

IMPAX Data Center is successfully deployed on a global level for the management of large volumes of data for multi-site hospitals Europe and the United States. •

DUTCH MEDICAL CENTER LINKS IMAGING AND PATIENT DATA USING INTEGRATED IMPAX RIS AND HIS/PACS

Agfa HealthCare's solution integrates all diagnostic imaging and patient data in an Electronic Medical Record (EMR) at the EU's most advanced medical complex

INTERVIEWEE Jean-Paul Kessels, Project Manager, Digitized Medical Images
HOSPITAL Orbis Medical Center, The Netherlands

As this issue goes to press, Europe's newest and most sophisticated general healthcare facility has been fully operational for about one month. Orbis Medical Center, the crown jewel of the Netherlands' Orbis Healthcare Group, consists of nine care centers including a mental health unit, a home-based care component, and hospice. This huge new facility selected Agfa HealthCare's IMPAX™ Picture Archiving and Communications System (PACS) solution integrated with its Radiology Information System (RIS) and IMPAX WEB1000™ Internet-protocol (IP) based software to serve all diagnostic imaging needs throughout the enterprise, as well as streamline data exchanges between the RIS and Hospital Information System (HIS) for a highly efficient, reliable and cohesive workflow.

"Data sharing tears down old barriers between hospital departments. The patient now becomes the center of care."

HOSPITAL FOR THE 21ST CENTURY

The name 'Orbis' means a ring or circle. Orbis is a medical and healthcare group that is continually completing the circle of care in the province of Limburg, in the south of the Netherlands. With revenues of 220 million EUR and 5,800 staff members at 35 locations, Orbis is one of the country's biggest employers.

In 1998, the Group received government permission to build a new hospital, and not just any hospital. A key challenge was to create a new vision for healthcare to guide construction of a facility that would not be outdated by the time it opened.

In the decade that followed, extensive planning and remodeling of work processes were finalized, ground broken and today, the new medical vision is open in the form of a massive, 265m long indoor atrium linking a care promenade, patient reception and consultation center, rehabilitation

AGFA HEALTHCARE'S CONTRIBUTION

IMPAX PACS, IMPAX WEB1000 Software.

and recovery center, a mental health facility, paramedical group, and nearly 600-bed hospital with all clinical support departments. Its sizeable radiology service includes all major digital modalities like computed tomography, magnetic resonance imaging, computed radiography, ultrasound, nuclear medicine, digital mammography as well as a digital cardiology suite.

But perhaps the most revolutionary component of this new healthcare vision is the role information technology plays in its execution. Nowhere is this more pronounced than in Orbis Healthcare's creation of a complete EMR for each patient, available through secure access by all hospital physicians, nurses and clinicians either at workstations, via the Internet, or wireless devices accessing 'hot spots' on patient floors.

Jean-Paul Kessels, Project Manager,
Digitized Medical Images





IMPAX PACS

- » Integrates images and information across the enterprise through HIS as well as business process software. Supports patient EMR.
- » Full DICOM/HL-7 compatibility links IMPAX PACS and HIS to a range of modalities and devices from other sources.
- » IP-based component permits image and information display on a wide range of computer-based displays or wireless devices.

risk having the wrong file inserted with the wrong patient, or lose files between departments.”

A supporting element in successfully improving work processes was Agfa HealthCare’s role in recommending new workflows for each of the hospital’s digital imaging modalities. “They did a step-by-step analysis for each and designed the integration with IMPAX in a way that was highly efficient and least disruptive for our staff,” Kessels says.

He adds that linking various departments and groups within the new work processes occurred in stages over a three-year period as construction phases were completed and staff and patients moved. The total cutover to PACS will be completed shortly after the move to the new hospital.

“Perhaps the most visible result of this successful IT integration has been the nearly total elimination of paper files,” Kessels adds. “Stacks of paper strewn all over desks and counters are no longer seen, having been replaced by work lists on a screen. And since imaging procedures are available quickly on the IMPAX network, the hospital staff’s reporting time back to the patient’s physician has been dramatically reduced.” •

DID YOU KNOW...

- » Every patient at Orbis Medical Center has broadband Internet access through a flat panel TV located bedside. It’s also a touchscreen with a wide range of commands, including nurse call, television, and motorized control of drapes, blinds and room lighting.
- » With a patient population of 200,000, Orbis Medical Center is a major general healthcare facility in the south of the Netherlands, nearby the Belgian and German border.

“The ability to access all medical data of a patient from anywhere in the complex is a tremendous time-saver.”

Jean-Paul Kessels,
Project Manager, Digitized Medical Images

HIGH TECH = HIGH TOUCH

“The availability of all patient data and imaging should not be confined by time and space,” says Jean-Paul Kessels, Project Manager, Digitized Medical Images for the Orbis Group. “In an IT-enhanced patient-focused environment, a full EMR should be securely accessible from anywhere in the enterprise on a wide range of wired and wireless display technologies. Such cross-disciplinary data sharing tears down old barriers and mindsets between hospital departments, and makes patients the center of the care process.”

For example, all floor nurses have small wireless devices accessing the hospital information system (HIS) for reviewing pharmacy data and admitting demographics. Other hospital-wide workstations and display devices allow physicians and clinicians controlled access via a single patient number to all EMR components including current and archived diagnostic imaging on PACS, radiologists’ reports, scheduling, and other data on the hospital’s logistic system (SAP).

Based on a highly detailed proof of concept study demonstrating a solid technical understanding of sharing imaging and data outside radiology,

Agfa HealthCare was selected by Orbis to install an enterprise-wide Image Management Solution. All hospital-wide medical images are archived and managed in PACS and are available to all healthcare providers through the existing EMR. In this tailor-made solution, valid patient identification of PACS images is created by an accession number from the SAP system, while RIS creates an accession number for radiology images.

SOLE ACCESS POINT TO ALL DATA

Kessels says the facility’s IT design revolves around each individual’s EMR being the main portal to all clinical imaging, treatment and demographic information, physical as well as non-X-ray studies about that patient. With the secure patient number, doctors and clinicians can also access and share file data with other medical professionals.

He adds electrocardiograph studies and pathology lab results will soon be added to the data available on the network. The system even has room for digital photos of patients, which is especially important in for example reconstructive and plastic surgery cases, internal medicine, gynecology and operating rooms.

“The change in work processes has been enormous,” he says. “With a physically large and multipart campus like this, the ability to access all medical data of a patient from almost anywhere in the complex is a tremendous time-saver. No longer do staff members have to run up and down floors looking for files,

VIENNA INSIGHTS

HERITAGE

The historic center of Vienna has been added to UNESCO's World Cultural Heritage list. Vienna's historic center is considered one of the most beautiful city landmarks in Europe. Three eras left their mark on the former residence of the Habsburgs: the Middle Ages with Gothic St. Stephen's Cathedral whose spire points toward heaven; the Baroque whose most important achievement is the Imperial Palace with its sumptuous cupolas; and the Ring Boulevard era of the late 19th century, when such splendid buildings as the Vienna State Opera and the Museum of Fine Arts were built to replace the former city walls. Thus, these historic buildings are now recognized as being among the 700 outstanding cultural and natural monuments of mankind –others include the Pyramid Fields from Giza to Dahshur, the historic center of Rome, the Kremlin with the Red Square, the Chinese Wall, the Taj Mahal and the Grand Canyon.



CEDIMED GROWS SIGNIFICANTLY BY OFFERING CR MAMMOGRAPHY

Patient volume increased by nearly 15% through introduction of CR mammography

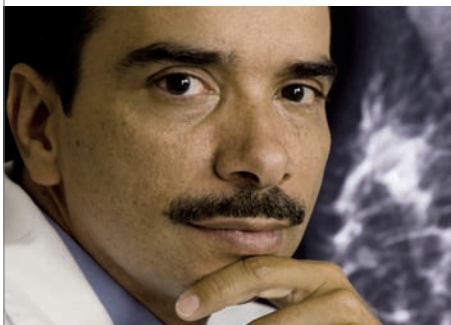
INTERVIEWEE Aurelio Gonzalez, M.D., Director of Women's Imaging

INSTITUTION CediMed, Medellín, Colombia

This Colombian imaging center has successfully grown its mammography department by transitioning from analog to computed radiography (CR) thanks to Agfa HealthCare's knowledge and solutions. Additionally, the center sent breast images to referring doctors to show CR as a high quality option for mammography. Key CR advantages include excellent imaging at lower cost, along with constantly evolving image enhancement software that improves CR's return on investment.

CR MEETS DEMAND FOR DIGITAL MAMMOGRAPHY

Medellín is home to the Centro avanzado de Diagnóstico Médico, or Center for Advanced Medical Diagnostics (CediMed). The practice consists of three sites, offering not only diagnostic imaging, but laboratory and other analytical services. CediMed provides general radiology, ultrasound (US), and bone density studies, and more advanced exams using a spectrographic Computed Tomography (CT) unit and two CT scanners with 64/4 detectors. It also has two, 1.5 Tesla Magnetic Resonance (MR) scanners. The mammography procedures performed are primarily diagnostic, averaging 800 exams per month or roughly 40 each weekday. A large number



"CR's biggest advantage is its unique and constantly evolving image enhancement software, MUSICA, which will allow its high quality output to strengthen."

Aurelio Gonzalez, M.D.,
Director of Women's Imaging

of needle biopsies, 150 per month, are conducted including US-guided breast and stereotactic procedures, ductography and needle localizations. Says Aurelio Gonzalez, M.D., CediMed's Director of Women's Imaging, "Because Medellín is an educational and cultural center, many women here are well informed and diligent about their health. They generally know about full field digital mammography (FFDM), and increasingly asked their doctors about this newest tool in the fight against breast cancer. We decided to capitalize on this interest with an alternative digital solution, CR, because we felt it provided many more significant advantages."

IMPROVED BREAST IMAGE VISUALIZATION

Dr. Gonzalez and CediMed's leadership selected CR technology to replace analog mammography. "CR uses the same equipment as screen/film to produce an image, which means you don't have to remove your current exposure system," he says. "This provides cost savings over a complete FFDM system. A primary benefit is the unique CR cassette that replaces the conventional screen/film one, as well as the digitizer that reads high quality digital imaging and displays it on a workstation." Agfa HealthCare was selected to provide a sophisticated CR system. "While CR technology is less expensive to implement than FFDM, its real strength is in constantly evolving image enhancement software," he says. "This will allow CR's high quality output to strengthen." Dr. Gonzalez adds that Agfa Healthcare's CR solutions were chosen because of its technical support and confidence in the product. "They are the right partner to work with," he says.

Agfa HealthCare's CR 85-X multi-application digitizer is used at the main site. Once the technologist inserts a CR cassette into the compact, freestanding digitizer, the unit automatically records patient demographic data, scans the imaging plate to memory, digitizes the image and returns the cassette to

CEDIMED, MEDELLÍN: More than 10,000 patients receive radiology procedures each month. **CHALLENGE:** Need for a digital mammography solution. **SOLUTIONS:** CR 85-X, NX workstation, MUSICA Software. **BENEFITS:** Patient volume for CR mammography increased between 10 and 15%. Cost-effectiveness. Image quality.

its output buffer for new exposures. This allows the technologist to return to the procedure room and stay with the patient, as well as contributes to faster patient throughput. Mammography detail is recorded at a high 20 pixels/mm for 18x24 and 24x30 cm sizes. In the important arena of image enhancement, CediMed thinks highly of Agfa HealthCare's MUSICA® (Multi-Scale Image Contrast Amplification) image processing software that runs standard on the company's NX intuitive workstation to enhance, manipulate, and improve breast image visualization, especially in the soft tissue regions.

EXCELLENT CR IMAGE QUALITY

To support its use of CR mammography*, CediMed recently provided breast images to pre-selected referring physicians. Various views were printed on dry media produced by Agfa HealthCare's DRYSTAR® 5500 imager and sent to each physician. A follow-up telephone interview was then scheduled with a CediMed radiologist to discuss the images. They concluded that the CR images met the expected standards and all important information was available. "Overall, our referral physicians have accepted CR very well," Dr. Gonzalez says. "And we are working very hard to share our experiences with others." Two other important results have occurred over the past year. CediMed's patient volume for CR mammography has steadily increased between 10 and 15%. Eight other imaging facilities, primarily hospitals, have installed a CR solution for mammography while only one has installed FFDM since. "We are proud and happy to have been the first in Medellín to use CR mammography," Dr. Gonzalez concludes. •

INTERVIEW WITH PROF. DR. GUY FRIJA,

AP-HP Paris, Hôpital Européen Centre Pompidou

When you look back at the last fifteen years, what would you say has changed for radiologists?

If we ignore the pure technological innovations that we have introduced over the past years, I would say that the biggest transformation we have seen has been a change of mindset, amongst radiologists specifically. This is not unique to healthcare of course, but being able to change the habits and viewpoints of any group of people is always a much bigger challenge than introducing new technologies. In fact the introduction of technologies is often a second step, supporting the agreed change in approach and vision. If people are not convinced that the proposed way forward is a viable one, then no technology will ever be introduced to support it, or it will simply not be used.

So you see radiology as an early adopter of new technologies within clinical practices at large?

Within the healthcare practice I think most clinicians will agree that radiology is very much an early adopter of new technologies and standards when it comes to digitization and IT solutions. We are of course also one of the more image/document intensive departments, so it is logical we would be a key driver. However, the fact that we, today, have set standards such as DICOM, approaches and agreed upon guidelines such as IHE in Europe and the US is significant. It means that in general, one of the most challenging periods in our transformation is behind us (at least for radiology). We can now look at expanding this success across different hospital sites, regions, countries and disciplines, which is our next challenge.

Guy Frija is Professor of Radiology, Chairman of the Department of Radiology at Georges Pompidou European Hospital in Paris and Director of the Laboratory of Imaging Research (Contrast Media – INSERM U494). He was Secretary General of the French Society of Radiology (SFR), Consultant to the French Ministry of Health and President of the National Commission of Medical Devices. An expert in functional and molecular imaging, he holds honorary membership of numerous prestigious societies including the Radiological Society of North America (RSNA), the American College of Radiology and the Deutsche Röntgen Gesellschaft, and is a member of the ESR Executive Council.



“As for digitization and IT solutions, radiology is very much an early adopter of new technologies and standards.”

What do you see as the core challenges and opportunities for radiology today?

I think there are two key challenges we face today, from our perspective, and they both have to do with introducing our new practices to those we serve. Radiology is an important link in the healthcare chain and we serve the needs of a wide variety of clinicians. The fact that we now have advanced IT solutions is excellent; productivity and efficiency are up and we are generally serving more patients.

The real challenge now is to ensure we can deliver our work to where it is needed. For large organizations, like hospitals, this is much less of a challenge: we have the funding and structure to support fully IT enabled solutions within the boundaries of our institutions. But if you move beyond the hospital walls, on General Practitioner (GP) level for example, this means that we expect them to follow suit.

However for most GPs this means that they do not only have to introduce a PC into their practice, but also have to cover additional costs to have solutions on their systems that enable them to communicate with us. Apart from the cost of introducing and maintaining such a solution for each GP, there are currently many different systems on the market. Which one do they choose? Which solution supports their needs and is integratable with their local hospitals? Big questions that still need to be looked at. The industry is providing us with these solutions, that is not the challenge. We as clinicians now need to decide on the standards we will accept and support to meet this need.

“The goal should be to have one solution, across the board, serving all clinical needs.”

The second real challenge we face is the difference in demand. As stated, we serve the needs of both specialists, like oncologists, orthopedic surgeons and so forth, as well as GPs. Most GPs are happy to receive a good report with one or two key images to support their final diagnosis, but for specialists it is not uncommon to demand more

extensive information and, quite often, the full set of images. We need to ensure we can meet the needs of both parties. The real challenge is that we need to provide adequate systems and solutions that support the delivery of this volume of information beyond the hospital walls, so the introduction of a sound network and structure is needed. There is significant buy-in for this, but the challenge will be to ensure they are used to their maximum capacity, and that means we need all medical disciplines to make use of these solutions in an integrated manner – again a change of thought and approach is needed.

Do you have a specific solution in mind that can meet this need, both for GPs and specialists?

Yes, it already exists – an expanded format of the Clinical Information System. The challenge here again is not the solution, but the inclusion of all medical specialties in that solution. Most radiologists are happy to work with IT based solutions that connect them to all necessary resources, but many other specialties still have to be convinced that an integrated solution, supporting the needs of all disciplines, is the way forward. This is normal: clinicians are there to ensure they deliver their services in the interest of the patient, so any new approach will be scrutinized.

Nevertheless, I am convinced that the goal should be to have one solution, across the board, serving all clinical needs. The end result will be that GPs, for example, will be able to obtain all data they need from a single source, and as a result offer better care to their patients. So when we, as a healthcare institution, refer a report back to a GP (in this case), it will have the lab results, radiology report, specialist report and so forth, all integrated into a single file. Simple, efficient and effective.

When do you think we will see the first results of such a fully integrated solution?

We can already see them today. Take the Nordic markets, for example. They agreed to have a fully functional solution and, eight years later, it is there. This is of course very much the result of a cultural approach. In most Nordic markets, when an approach is agreed upon, it is done. In many other European countries this is often a more regionally driven discussion and there are plenty

of examples of it working very well. Within my own territory, for example, the Ile de France region of Paris, we have just completed a study that has shown we can achieve a fully filmless region, for 15 million patients, in the very near future and we are now evaluating what is needed to achieve this.

“To generate acceptance of new technologies, there must be a clear benefit to the primary users of the solution.”

Do you think new technologies are part of the reason why many clinicians are not willing to take the step to move to fully integrated IT solutions?

The solutions themselves are, in many cases, wonderful. Again it is not the technologies that create the problem, but the acceptance of them. You have to remember one important thing: we are not IT specialists. We are, in my specific case, radiologists. That means that our primary task is to read and diagnose.

In short, we are users of the solution, so they need to be simple, efficient and effective. Only then will we accept a solution, and not on the basis of a detailed overview of how it functions technologically. It is the job of our IT management to evaluate this. To generate acceptance there must be a clear benefit for the primary users of the solution.

Do you think radiology can achieve new levels of efficiency?

We are, in essence, already doing this. I am a big supporter of teleradiology solutions. Why? Simply because it is accepted, already part of the workflow for many radiologists and it is resource and cost efficient. If you have one single point where all images from, for example, a region are being diagnosed, you can cut out quite some inefficiency, both in terms of the number of (different) solutions that need integration, required staffing, location costs and so forth. I am a big promoter of the approach; it is going to be a bigger part of our future as radiologists. •

A DIGITAL TRANSFORMATION

How Yemen is set to embrace digital healthcare

INTERVIEWEES Dr. Manar Al Saqqaf, Tenders and Project Manager, Natco-Al Razi Co. Ltd.; Mr. Abbas Bawazir, Tihama Tractors Inc.

As the Arabian Peninsula's second largest country in size and population, the Republic of Yemen has seen remarkable growth. One of the world's oldest centers of civilization, the country has today embraced modernity for the benefit of its people. With an estimated population of 23 million and one of the world's highest birth rates, Yemen's next challenge is healthcare. Significant progress has been made to expand national healthcare coverage to both rural and urban areas. However, challenges remain. Compared to its Gulf of Aden neighbors, Yemen's healthcare spending currently stands at 3.7% of gross domestic product (GDP). Ensuring that qualified staff are on hand to treat patients is also a priority for healthcare providers.

THE GROWING NEED FOR DIGITAL HEALTHCARE

According to one medical professional, Yemen's healthcare providers realized the potential for improving medical services

several years back. "Our specialists who studied and worked in Europe, America and the Gulf saw and experienced new ways of treatment, many of which were centered on digital solutions," explains Dr. Manar Al Saqqaf of Natco Al-Razi Co. Ltd., the top leading agency for medical equipments in Yemen.

"On their return to Yemen, these professionals constantly asked me what digital systems are available in Yemen, how much they cost and how I could support them. This interest in digital healthcare has today become mainstream in our hospitals and clinics, and I am expecting it to be widely used from this year on," he says.

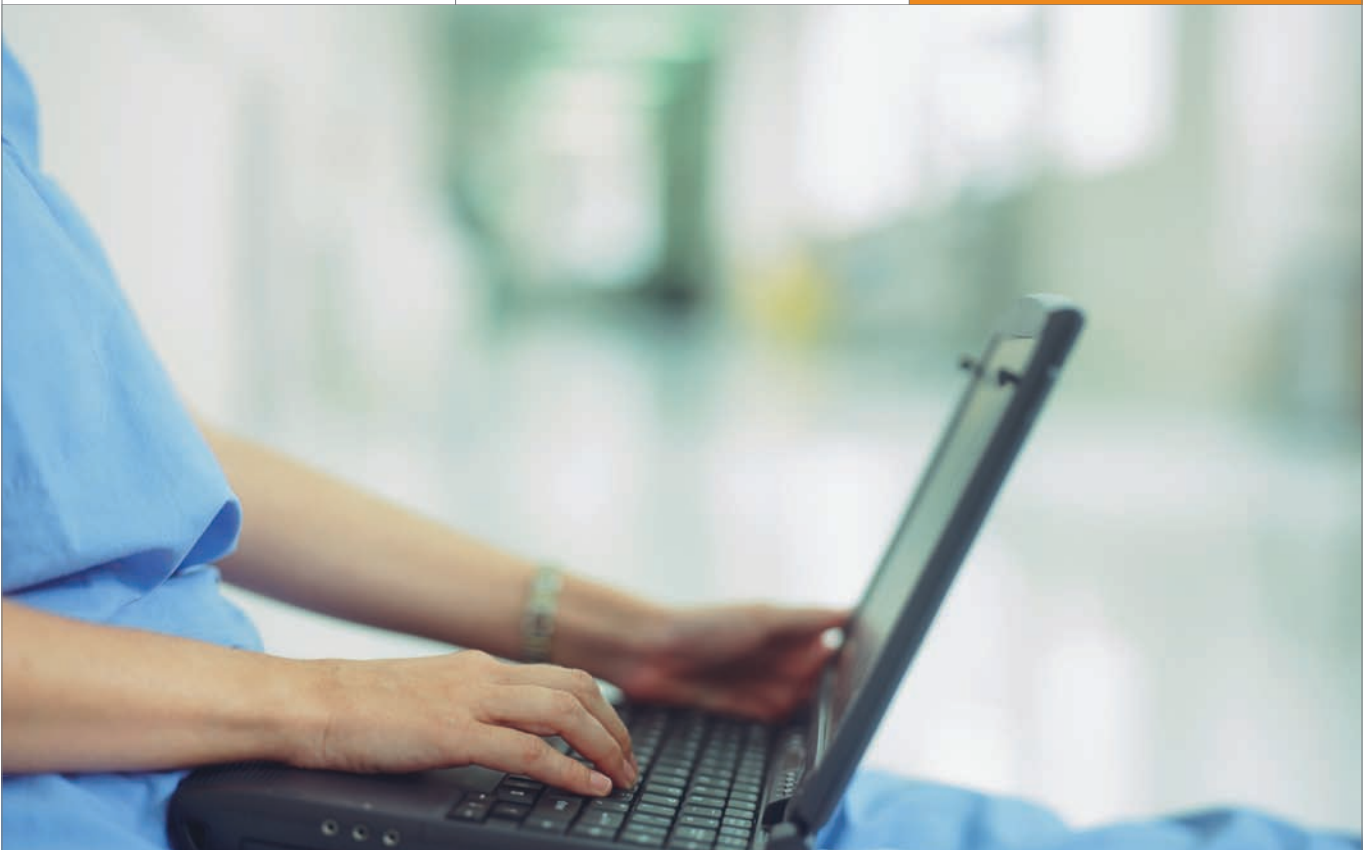
ENHANCED PATIENT CARE AND IMPROVED RETURN ON INVESTMENT

The transformation of Yemen's medical services can also be attributed to the rapid growth of information technology

amongst society, in particular Yemeni youth who make up over half the population. "Personal computers have become affordable and the technology has improved so much that over 30% of the population have a PC in their home. The telecommunications infrastructure is also improving, and is becoming easier and cheaper to use. Everyone here is going digital, be it at home or in the hospital," notes Mr. Abbas Bawazir of Tihama Tractors, one of the largest providers of medical supplies in the country.

"The telecommunications infrastructure is improving, and is becoming easier and cheaper to use. Everyone here is going digital, be it at home or in the hospital."

Mr. Abbas Bawazir,
Tihama Tractors Inc.



“The interest in digital healthcare has today become mainstream in our hospitals and clinics, and I am expecting it to be widely used from this year on.”

Dr. Manar Al Saqqaf, Tenders and Project Manager, Natco-Al Razi Co. Ltd.

Both Dr. Al Saqqaf and Mr. Bawazir believe that the digital shift is timely, both in terms of enhancing patient care as well as providing a better return on investment. “The hospitals that we have worked with are typically private and government-sectors run. They consider the costs, and their feedback is unanimous. They all tell me that the return on investment for digital systems is much higher than traditional methods, which can be more time-consuming and less convenient. Today, the number of patients in Yemen who are keeping the images and who are communicating with their doctors over the internet remarkably raised, especially in urban areas. For doctors, the shift to digital provides a better view and allows for making a more confident accurate diagnosis,” says Mr. Bawazir.

YEMEN INTERNATIONAL HOSPITAL IN TAIZ

The challenges of how to treat a geographically diverse population are illustrated by Yemen International Hospital. Located in the nation’s most populous city, Taiz, Yemen International Hospital is the largest medical facility in the South West of Yemen. Many patients have to travel several hours to reach the hospital. The hospital management turned to Natco Al Razi Co. Ltd. for help in raising service levels and providing up-to-date healthcare equipments to the hospital.

“We sat down with Yemen International Hospital and instantly saw that they needed digital systems if they were

“The response from the medical community so far to our and Agfa HealthCare’s education efforts has been very positive. We want to keep the momentum up and ensure that Yemen stays on the path of its digital transformation.”

Dr. Manar Al Saqqaf, Tenders and Project Manager, Natco-Al Razi Co. Ltd.



Yemen set out for healthcare transformation in order to meet the growing need for digital medical services.

going to reach out to patients living long distances away. They also saw the benefits of going digital in their installation of a 64-slice CT scanner and 1.5T MRI. The new equipment has had a big impact in improving diagnosis times as well as allowing patients to be treated at clinics nearer to home,” notes Dr. Al Saqqaf.

NEW POLICE HOSPITAL IN SANA’A

In Yemen’s capital, Sana’a, the new Police Hospital is taking a similar approach. Supported by Tihama Co. and Mr. Bawazir, the hospital’s administration opted for digital after their physicians realized the benefits of this modern medical technology. “Our own doctors were so impressed with the digital techniques they saw at various private hospitals in Sana’a that many have started to apply these practices in their own clinics,” explains Mr. Bawazir. “We transformed the new Police Hospital from analog to digital. On the clinical side, they have found they can treat much more effectively using digital, especially in the orthopedic ward, where staff can diagnose and treat patients more expeditiously and with greater confidence. On the administrative side

they have realized a great difference in terms of (lower) costs.”

AGFA HEALTHCARE AS A RELIABLE PARTNER

As Yemen’s digital transformation gains pace, one common factor is Agfa HealthCare. The two men are full of praise for the global digital healthcare provider. Says Mr. Bawazir, “Other companies in this field do not yet look upon Yemen as a digital country, as a nation that is ready for this technology. However, the way I see it, we are pioneers in the provision of digital imaging. We have several large private hospitals using Agfa HealthCare digital equipment, and we were the ones to introduce digital technology into the country. Today everyone is looking for digital solutions, and there is little competition to Agfa HealthCare.”

Adds Dr. Al Saqqaf, “We are often visited by Agfa HealthCare representatives, who inform us of new technologies and spread awareness amongst medical professionals through their marketing efforts. I would like to see our technicians and doctors visit more Agfa HealthCare sites internationally and locally. The response from the medical community so far to our and Agfa HealthCare’s education efforts has been very positive. We want to keep the momentum up and ensure that Yemen stays on the path of its digital transformation.” •

VIENNA INSIGHTS

HIGH QUALITY

Within the European Union, Vienna is the city with the highest quality of life. In the worldwide ranking of cities, Vienna is in 3rd place. The only places with a higher quality of life are Zürich (Switzerland) and Vancouver (Canada). More than 50 criteria were taken into account for the city ranking: political stability, safety, medical care, leisure and pleasure opportunities, gastronomy, schools, education, culture, traffic, environment, living costs,.... As for culinary specialties, the Viennese pride themselves with their famous Sachertorte: a chocolate cake invented by Franz Sacher in 1832 for Klemens Wenzel von Metternich in Vienna. The original Sachertorte is only sold in Vienna and Salzburg, and is shipped from both locations.

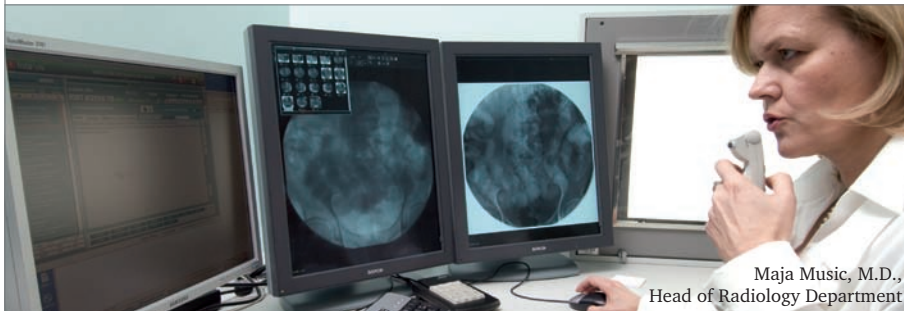


ONCOLOGY INSTITUTE IMPLEMENTS ENTERPRISE-WIDE RIS/PACS IN ONLY ONE MONTH

Agfa HealthCare helps Radiology Department at Slovenia's leading cancer center convert to a digital imaging strategy

INTERVIEWEE Maja Music, M.D., Head of Radiology Department

INSTITUTION Onkološki Institut Ljubljana, Slovenia



Maja Music, M.D.,
Head of Radiology Department

ONKOLOŠKI INSTITUT LJUBLJANA, SLOVENIA: one of the country's largest medical facilities.

CHALLENGES: Provide a complete electronic workflow that is faster, more efficient and of higher quality than traditional processes.

SOLUTION: IMPAX 6.3 PACS with integrated InterRIS. **BENEFITS:** Improved service to patients and physicians. Increased speed, efficiency and accuracy.

Ljubljana is home to one of Slovenia's largest medical facilities, the Onkološki Institut (Institute of Oncology). In 2007, its entire Radiology Department moved to a state-of-the-art four story medical complex. Rarely does an entire hospital-based diagnostic imaging operation change locations in a single effort. In addition to moving people, patients and equipment, the department successfully transitioned from an analog to digital imaging workflow by implementing a sophisticated Agfa HealthCare Picture Archiving and Communications System (PACS).

OLD HOSPITAL – OUTDATED PROCESSES

Prior to 2007, most of this government owned institution was housed in old buildings converted for hospital use in the early 20th century. Similarly, the imaging devices in the Radiology Department were a mix of antiquated and semi-modern. "In addition to the analog image processing, our image management and reporting workflows were very traditional and tedious," says Maja Music, M.D., Head of the Institute's Radiology Department. "For example, when a patient's physician needed to review recent or past films, they had to come to the department's main reading room to study them. It was also time consuming to do comparative studies." Realizing there were more expedient means to display and share images electronically, the department, working with the Slovenian Ministry of Health (MH), sought advice and proposals from various PACS manufacturers when planning the Institute's new radiology suite.

"Patients and physicians benefit greatly from the speed and efficiency offered by this technology. We will never go back."

STRONG PRESENCE AND TECHNICAL STRENGTH

Agfa HealthCare's IMPAX™ 6.3 PACS with associated Radiology Information System (InterRIS) was chosen for the institute's new building by a tender among various providers in Slovenia. A strong regional presence by the company, its well-established relationship with Ljubljana-based professional services provider InterExport, and the ability of IMPAX to easily interface with various digital modalities from diverse suppliers were factors leading to the decision. Also important was the secure, Internet-based operability of IMPAX RIS/PACS, which helped make imaging and information available quickly and easily throughout the Institute without extensive cabling. "Agfa HealthCare was chosen among various suppliers that provide RIS and PACS in this country to guide and service our installation under an extremely tight deadline," says Dr. Music. The next major challenge was to prepare and install the complete PACS in 30 days once the new building was ready for occupancy in September 2007. While many challenges occurred, the move was completed on schedule with all digital modalities operable and the IMPAX PACS successfully online.

NEVER GO BACK

Today, Dr. Music, 10 full-time radiologists and some 30 technologists, nurses, radiology administrators and support staff carry out patient procedures and reporting more quickly and productively than ever imagined two years ago. "All Institute physicians now have fast access to current and archival images via personal computers or workstations," she says.

Also available hospital-wide through Agfa HealthCare's InterRIS is its speech recognition software that helps speed dictation and physician report generation. Additionally, Dr. Music's medical team can access images at home using Agfa HealthCare's display software that provides secure Internet access to high-quality images and 24/7 service for emergency patients.

Commenting on key results and benefits of the IMPAX RIS/PACS, Dr. Music says: "Everything is faster than before. We report back to physicians quicker and with greater confidence. Comparative images are quickly available electronically instead of waiting for an archivist to locate and pull hard copies. And with RIS integration into the hospital information system (HIS), all patient treatments, progress notes, lab reports, pharmacy and other key demographics are available along with the images. Both patients and physicians benefit greatly from the speed and efficiency offered by this technology. We will never go back to the old ways." •

INTERVIEW WITH DIRK DEBUSSCHER,

Vice President Imaging Division, Agfa HealthCare

Agfa HealthCare is currently introducing its expanded portfolio of digital radiography systems. Star attraction is the company's new DX-D line of DR solutions. 'There' caught up with Dirk Debusscher, Vice President Imaging Division at Agfa HealthCare, to learn more about the solution and the company's current and future objectives in Computed and Direct Radiography.

Next to your existing CR portfolio you are now launching a DR solution. Can you tell us more?

Yes, we are very proud to be introducing our new DX-D family. The introduction of our first DR solution is a concrete step towards a more complete portfolio of imaging solutions, to better serve the needs of our customers. Agfa HealthCare has a strong and extensive history in imaging and we have been a leading partner in our customers' move from analog to digital for many years. Today, with the introduction of our DR offering, we are taking the next steps to re-enforce this position, supporting our customers in their next level of transformation.

Can you tell us something about the new DR family?

Certainly, our DX-D family is offered in single and multi-detector solutions, featuring increased image capture speed and, something which differentiates us, exam-independent MUSICA™ DR processing. This guarantees the highest contrast detail and low patient dose.

The first member of the family is the DX-D 500, the ceiling suspended unit, which is developed for high-volume departments and imaging centers.

Dirk Debusscher was appointed Vice President of Imaging at Agfa HealthCare in January 2008. Dirk has worked for the company for over 20 years and has held several management functions during this period. He has a Master in Electrical Engineering from the University of Brussels and an Executive Master of Business Administration from UAMS Antwerp.



“It is not about CR or DR, but about CR and DR.”

Our DX-D family is designed to deliver almost real-time previews, combining the highest productivity and a superior image quality. At the same time we deliver improved patient comfort in the radiography department. It is an exciting time for us!

You mentioned a ‘family’ of solutions. Can we expect more?

It would not make any sense for us, a global and trusted imaging partner, to only provide a single solution to meet a wide variety of needs. When we decided to move into DR, the decision was taken to do this in the fullest sense, and a solution roadmap is in place for this. Our next step? To introduce a U-arm solution, called DX-D 300.

“Our DX-D family combines the highest productivity with superior image quality.”

What are your plans for your extensive CR offering?

CR will remain equally important. We have never believed that our customers needed to choose between CR and DR, but that they are complementary. It is not about CR or DR, but about CR and DR.

If you look at the realities faced by many hospitals, cassette based radiography is still a requirement, especially in emergency and trauma situations. To date there is no viable alternative to cassettes, and thus no alternative to enabling hospitals to

“We offer our customers the same workflow and the same look and feel of the image they have grown accustomed to in CR, and we have applied it to our DR solutions.”

diagnose patients that are neither mobile nor able to reach a radiology room. We see that a significant amount of our customers combine the speed and flexibility of our DX-S CR solution, for example, with DR rooms to meet this need. So we will continue to drive our CR business forward, delivering an extensive portfolio of CR and printing solutions at both ends of the scale, from compact and affordable, to high end solutions like our DX-S. This will be complementary to our DR solutions.

What is the benefit of working with both solutions from Agfa HealthCare?

We are the masters of CR and DR. Offering both solutions means that the customer has a choice, including the option of combining both solutions into a hybrid system. This has been a clear strategy for us from the beginning and we will continue along this road. Why? Because we are able to offer the best building blocks with mature systems like the NX workstation and MUSICA image processing, optimized for DR. That means that we are offering our customers the same workflow and the same look and feel of the image that

they have grown accustomed to in CR, but applied to our DR solutions.

How does the introduction of a DR solution family fit with Agfa HealthCare’s strategy?

It is an integral part of it. Agfa HealthCare has decided that it will grow its competences in both Imaging and IT. The company has been a leading healthcare player for over 100 years and imaging is part of our DNA, on all levels, from CR to DR to IT. We know what a diagnostic image is, what is expected from it and what our customers expect from us, so we are well placed to deliver the solutions that meet their needs.

What does the future hold for imaging technologies at Agfa HealthCare?

I would say: a lot. The decision to further strengthen our imaging portfolio has resulted in a strong push to expand our current offering to other medical professions and other opportunities in the field. DR will play an integral role here of course, but it is not the only avenue we have started to walk on. But this will be revealed in due time. •

“Offering CR and DR solutions means that the customer has a choice, including the option of combining both solutions into a hybrid system.”



VIENNA INSIGHTS

INTELLIGENCE

The Österreichische Nationalbibliothek (ÖNB) is the Austrian National Library, and with 7.4 million items in its collections, the largest library in Austria. It is the largest baroque library in Europe – an architectural masterpiece of the Viennese baroque architect Johann Bernhard Fischer von Erlach and his son Emanuel. Founded by the Habsburgs in the first half of the 18th century, it is located in the Hofburg Palace in Vienna. The collections consist of papyri, manuscripts, ancient and rare books, maps, globes, music, portraits, graphics, photographs, autographs and posters as well as works in and on Esperanto and other artificial languages, which are stored in the various collections and are available for scientific research.

NEWS FROM AGFA HEALTHCARE

Agfa HealthCare Receives US Air Force Approval for IMPAX 6.3 and IMPAX Data Center

Agfa HealthCare has recently received the Authority to Connect (ATC) its IMPAX™ 6.3 solutions and IMPAX Data Center from U.S. Air Force Surgeon General's office and the Air Force Communications Agency. This certification and accreditation is based on rigorous guidelines defined by the Department of Defense Information Assurance Certification and Accreditation Process (DIACAP). In 2004, Agfa HealthCare was the first PACS solution vendor to receive the Air Force's Approval to Operate for its existing software. The company is the first PACS vendor to receive approval under DIACAP, and this new certification allows IMPAX 6.3 and IMPAX Data Center to be installed on U.S. Air Force networks.

"The US Air Force continuously challenges its vendors to deliver the toughest IT security standards within global clinical operations and we take the quality of care, privacy and security of our government customers and their patients very seriously," says Tim Artz, Global Government Program Director at Agfa HealthCare. "Agfa HealthCare has proven once again that IMPAX achieves the Air Force's stringent requirements in one of the most comprehensive security test and evaluation procedures in the healthcare information technology industry, and this with a continued drive to deliver clinical performance in a complex healthcare environment."

To date, Agfa HealthCare has installed its solutions at more than 150 Department of Defence and Veteran Affairs facilities worldwide, including more than 30 U.S. Navy warships with onboard radiology suites and the two U.S. Navy hospital ships, Mercy and Comfort. •



Agfa HealthCare is Europe's 10th largest software vendor, 44th worldwide

Agfa HealthCare has been named Europe's 10th largest software vendor, according to a recent report by PriceWaterhouseCoopers (PWC). Agfa HealthCare also ranks 44th on the world list of vendors, based on total revenue in software applications.

PWC released its first edition of its EuroSoftware100 index, an independent research project, on December 3rd. It is a joint initiative of major European Software associations: the European Software Association (ESA), the BASDA (the UK), and the AFDEL (France) recently. Agfa HealthCare is the only Belgian software vendor to make it in the top 100, and one of four in the top 200.

You can access the report via the web:
<http://www.eurosoftware100.com/> •

Agfa HealthCare opens new central office for the Middle East

In June 2008, Agfa HealthCare inaugurated its newly formed office in Dubai, United Arab Emirates. The establishment of the new office, which will serve the needs of the company's Middle Eastern customers, is designed to re-enforce the company's position in the region. "We are serious about our presence in the Middle East," comments Herman Raats, Head of Agfa HealthCare's Direct Export organization, "and the introduction of a legal entity in that region, staffed by Agfa HealthCare and supported by our partners and dealers, is a clear sign that we are there to stay."

The office is staffed by Agfa HealthCare marketing and sales representatives from a host of different countries, including India, Bangladesh, Germany, Egypt, Lebanon and Jordan. It is further supported by representatives across the Middle Eastern region. •

MEDICAL CENTER FIRST IN BALKANS TO GO ALL-DIGITAL THANKS TO AGFA HEALTHCARE

IMPAX PACS integrates all digital modalities with RIS and CR to help the Bosnia-Herzegovina medical center improve the delivery of care and increase productivity by 30%

INTERVIEWEE Haris Husejnagic, M.D. M.S., Director – Radiology Department
HOSPITAL University Clinical Center Tuzla, Bosnia-Herzegovina



Haris Husejnagic, M.D. M.S.,
Director – Radiology Department

AGFA HEALTHCARE'S CONTRIBUTION

IMPAX 6.3 PACS with integrated RIS and CR 85-X and CR 30-X Digitizers.

teaching hospitals. Excellent digital images from multiple modalities were produced, but we had no quick way to get these images to physicians and clinical staff enterprise-wide, including two satellite locations,” says Dr. Husejnagic. Needed was an integrated RIS/PACS to link critical locations within radiology as well as UCC’s emergency suite, operating theaters, intensive care units, and off-site facilities roughly 5 km from the main campus.

Dr. Husejnagic says UCC’s preparation for PACS lasted three years consisting of various implementation phases. High-speed fiber optic and copper cabling was first run throughout the campus, including ‘hot spots’ for wireless access in certain areas. UCC administrative, radiology and IT specialists then visited numerous sites in the EU to learn about PACS installations. Finally, proposals were solicited and suppliers evaluated. “In the end, our decision was not so much based on bottom-line pricing as it was on image transmission speed, equipment reliability, and the supplier maintaining a strong presence in this region,” Dr. Husejnagic says. “We felt all the major PACS suppliers had excellent products. Our concerns were: could their technology successfully and reliably perform on our pre-installed network, and could they quickly respond to the daily needs of such a large institution?”

“We determined IMPAX was the most compatible solution with our existing digital network and modalities, producing faster transmission speeds than the other contenders,” he says.

The Univerzitetski Klinicki Centar Tuzla (University Clinical Center – UCC) is the largest medical facility in The Republic of Bosnia-Herzegovina. In August 2008, it became the first regional center to transition from a conventional analog to a fully digital workflow for its image and information management activities. Agfa HealthCare’s IMPAX™ 6.3 Picture Archiving and Communications System (PACS), its associated Radiology Information System (RIS) and two Computed Radiography (CR) digitizers now complement existing digital modalities to enhance patient care, increase the speed of physician communications, and assist with staff productivity and cost saving efforts.

SHARING IMAGES A CHALLENGE

Numbering 1,211 beds, government-owned UCC Tuzla consists of multiple, modern buildings situated on a large campus offering both clinical excellence and medical education for this region’s physicians. It’s huge even by EU standards.

“We determined IMPAX was the most compatible solution with our existing digital network and modalities, producing faster transmission speeds than other contenders.”

The Clinic for Radiology was established in 1960 and today employs 105 medical professionals in a range of specialties including pediatric radiology, mammography, cardiovascular imaging and surgery, nuclear medicine, neck, urogenital and abdominal radiology. State-of-the-art digital modalities from a variety of manufacturers include 64- and 6-slice computer tomography (CT) units, a 1.5 Tesla magnetic resonance imager (MRI), two digital angiography suites, and multiple ultrasound, nuclear medicine and mammographic imaging systems. The clinic’s director is Haris Husejnagic, M.D., M.S. “We faced a situation not uncommon at many large

DID YOU KNOW...

- » 'Tuzla' is from the Turkish word for salt, which refers to the extensive salt deposits underneath the city.
- » The Bosnian communications market was liberalized in 2006. In two short years, broadband Internet service covers most of the country.



"Agfa HealthCare definitely has very good technology, but they also have highly skilled technical people based in our country. Local support is important because it helped address a key project goal – fast installation."

FULL RIS/PACS IN ONLY THREE MONTHS

The radiology clinic's goal was to implement a fully functional RIS/PACS linking all digital modalities from multiple vendors, and provide imaging and information at key workstations

throughout the UCC complex in 90 days. This included installation of two Agfa HealthCare CR digitizers as well, a centralized CR 85-X system and a table top CR 30-X.

This goal was achieved, in large part, by basing the IMPAX RIS/PACS architecture on an Internet protocol (IP) platform using Lightweight Directory Access Protocol (LDAP) for querying and running directory services. It's an IP-based system linked through a web-based wide area network (WAN), which allowed it to be set up comparatively quickly.

The system is supported by Health Level (HL) 7 compatible interfaces to all modalities, as well as the main Hospital Information System (HIS). RIS workflow is supported by sophisticated 'Speech2File' voice recognition software. "Among the major advantages of Agfa HealthCare's IMPAX system is that each qualified user has a single security code for all PACS, RIS and local domain functions, eliminating the tedium of having separate codes for each function," Dr. Husejnjagic says. "Overall, the IMPAX system solution is easy to use, has highly integrated software between imaging and RIS functions, and a very user-friendly client interface which is quick to learn," he adds.

as well as related processing equipment, chemicals and space needed to house such activities. Much of that monthly savings is used to offset the purchase cost of RIS/PACS, as well as its regular, ongoing support.

The actual cutover from analog to full PACS was successfully achieved in just under one week, thanks to an on-site PACS training center supported by Agfa HealthCare. In the months leading to the cutover, the center provided two and a half hours of daily instruction, with self-taught tutorials available 24 hours daily. "We converted from a nearly all film workflow to fully digital in six days," Dr. Husejnjagic says. "The first few days were challenging, and I spent much time on the telephone helping physicians adjust to the new system. But surprisingly, by the fourth day, the calls dropped off and physicians and clinicians accepted – even embraced – the new process. I credit IMPAX's very user friendly interfaces along with the excellent upfront training in successfully achieving this."

Dr. Husejnjagic reports a 30% improvement in his staff's productivity because digital images and supporting

"Our working speed has picked up dramatically without any loss in the quality results we expect."

IMPAX RIS/PACS

- » A complete electronic healthcare workflow, combining patient imaging and data with HIS and other critical demographics.
- » Easy, reliable interface with nine different modalities from diverse suppliers.
- » Full DICOM/HL-7 compatibility links IMPAX to a range of modalities and other sources.



Haris Husejnjagic, M.D. M.S., Director – Radiology Department



30% PRODUCTIVITY GROWTH—SAVINGS ABOUND

Today, the PACS has nearly 400 users with more expansion planned in the coming months. Since its successful implementation in September 2008, the UCC radiology clinic has saved 25,000 EUR monthly by eliminating all analog image capture and archiving,

information are now available quicker and over a greater area. "Our working speed has picked up dramatically without any loss in the quality results we expect," Dr. Husejnjagic says. "This lets us provide a higher level of service to physicians and more confident, expedited care to the patients they attend." •

Healthcare transformation

We'll take you there.

Your radiology department and your path to digital is unique. Yet, your goal to provide the highest level of care is shared worldwide. We know. Found in 1 of every 2 hospitals, Agfa HealthCare works alongside radiologists every day. Our systematic steps to integrated digital radiology allow you to advance at your own pace, without jeopardizing current systems or investments. This allows you to choose the solutions you want: advanced imaging systems, integrated RIS/PACS/Reporting, sophisticated data management, or integrated digital workflows for radiology, mammography, cardiology and the healthcare enterprise. So as you consider your chosen path, let our proven experience support your next step, and every step after that.

Learn more about our proven solutions. Visit www.agfa.com/healthcare.

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