

Executive Brief

From CPACS to CVIS

The evolution of cardiology image and data management

As healthcare technologies improve and advance, the distinctions between them can often blur. The evolution of cardiovascular picture and archive systems (CPACS) to cardiovascular information systems (CVIS) is a powerful case in point. In this executive brief, we explore why the transformation from CPACS to CVIS took place and the key differences between these two critical cardiology solutions.

Imaging before CVIS

Before the development of the CVIS, CPACS reigned supreme. Much like their PACS counterparts in radiology, CPACS were deployed solely to provide economical storage and convenient access to images. Cardiology diagnostics, procedures and treatments were far less specialized, as was the technology they employed. In hindsight, it was a much simpler time.

During this period, cardiology, like other service lines, functioned fairly independently. They were often siloed departments within stand-alone hospitals that maintained their own imaging equipment, surgical suites and inventory management. Cardiology departments also boasted large staffs and their own budgets, giving them significant power and influence within the hospital ecosystem.

Cardiology transforms

Over the past 10 to 15 years, a wave of change has swept across the healthcare industry, bringing with it the widespread use of electronic health records (EHRs), the rise of hospital mergers and acquisitions, major technological advancements and a host of regulatory changes.

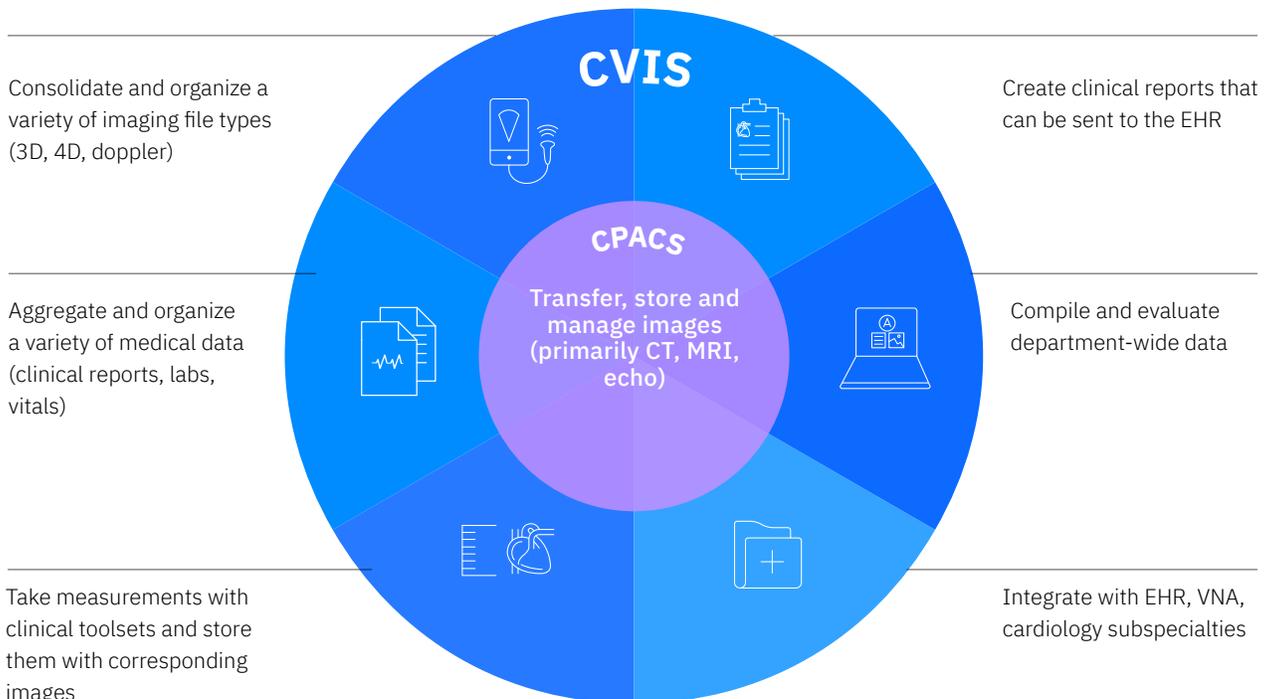
For cardiology, the advancements in technology have been dramatic. More sophisticated imaging techniques including 3D and 4D, doppler and strain imaging have created new insights into the cardiovascular system. Those changes have in turn paved the way for advanced treatments such as

minimally-invasive mitral valve repair and transcatheter aortic valve replacement (TAVR). Technological strides have also led to clinical advancements such as electrophysiology (EP) and cardio-oncology, each requiring unique and specialized procedures, training and equipment.

Picture archiving solutions, once the heart of the cardiology department, have become merely a component of more robust and multi-faceted cardiovascular information systems.

Workflows have also grown far more complex. Due to the trend of hospital consolidation, cardiology departments are no longer the 'islands' they once were. In the new enterprise healthcare model, their work, reports, images and data must now span multiple specialties, facilities and locations – across the continuum of care.

Capabilities of CPACS vs CVIS



From archive to information management

Naturally, as cardiology evolved, so too did the tools used to support it. Simply put, greater complexity demanded greater functionality.

Cardiology departments needed more than just a place to store images. They required solutions that could collect, organize, measure and report on cardiology data at the individual and enterprise levels. Consequently, picture archiving solutions, once the heart of the cardiology department, have become merely a component of more robust and multi-faceted cardiovascular information systems.

Today, CVIS are able to gather and organize a wide variety of imaging file types and diverse data such as clinical notes and lab reports. They feature toolsets that facilitate measurements and store that data with their corresponding images. CVIS allow cardiologists to create clinical reports and enable the collection and evaluation of department-wide data. And the most comprehensive and effective CVIS enable interoperability with systems essential to cardiology workflow, such as the EHR, cardio subspecialties and modalities, and vendor neutral archives.

As cardiology continues to evolve, so too will the tools and technologies that support it. For now, CVIS offer the most extensive capabilities to help meet the complex needs of today's cardiology departments, but new developments, including the application of artificial intelligence, are setting the stage for exciting advances in the years ahead.

Merge Cardio

Merge Cardio™ is a comprehensive CVIS that supports all cardiology modalities. Ranked Best in KLAS for cardiology for six consecutive years, it is vendor neutral, data agnostic and integrates fully with Merge Hemo™ for seamless cath lab connectivity. Merge Cardio also comes bundled with IBM iConnect® Enterprise Archive, our award-winning VNA, to enable the storage and easy access of cardiology images and data across the enterprise.

For more information on Merge Cardio, visit ibm.com/watson-health/solutions/cardiology-solutions

About Watson Health Imaging

Watson Health Imaging, a segment of IBM Watson Health, is a leading provider of innovative artificial intelligence, enterprise imaging and interoperability solutions that seek to advance healthcare. Its Merge branded enterprise imaging solutions facilitate the management, sharing and storage of billions of patient medical images.

With solutions that have been used by providers for more than 25 years, Watson Health Imaging is helping to reduce costs, improve efficiencies and enhance the quality of healthcare worldwide.

© Copyright IBM Watson Health 2020

IBM Watson Health

75 Binney Street, Cambridge, MA 02142

Produced in the United States of America

January 2019

IBM, the IBM logo and ibm.com are trademarks of IBM Corporation in the United States, other countries or both. Merge and its respective logo are trademarks of Merge in the United States, other countries or both. All other company or product names are registered trademarks or trademarks of their respective companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at ibm.com/legal/copytrade.shtml

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

The information in this document is provided "as is" without any warranty, express or implied, including without any warranties of merchantability, fitness for a particular purpose and any warranty or condition of non-infringement. IBM products are warranted according to the terms and conditions of the agreements under which they are provided. The client is responsible for ensuring compliance with all applicable laws and regulations applicable to it. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the client is in compliance with any law or regulation.

Statement of Good Security Practices: IT system security involves protecting systems and information through prevention, detection and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, misappropriated or misused or can result in damage to or misuse of your systems, including for use in attacks on others. No IT system or product should be considered completely secure and no single product, service or security measure can be completely effective in preventing improper use or access. IBM systems, products and services are designed to be part of a lawful, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products or services to be most effective. IBM does not warrant that any systems, product or services are immune from, or will make your enterprise immune from, the malicious or illegal conduct of any party

VRCS-19070 Rev 4.0