

Bio-Medical Image Life Cycle Management (BILM)– A Market Analysis

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Note: In this report BILM and PACS (Picture Archiving and Communication Systems) are used interchangeably

Need Statement

- Small CRO (Contract Research Organization) has a need for an efficient and cost effective life cycle management of biomedical images. They would like to incorporate product and associated services to address inefficiencies in managing images during clinical trials. The analysis performed on and data associated with medical images and other datasets are also critical for regulatory submissions. There are a few solutions in market for biomedical image management but customers are not satisfied with them

Key pain points

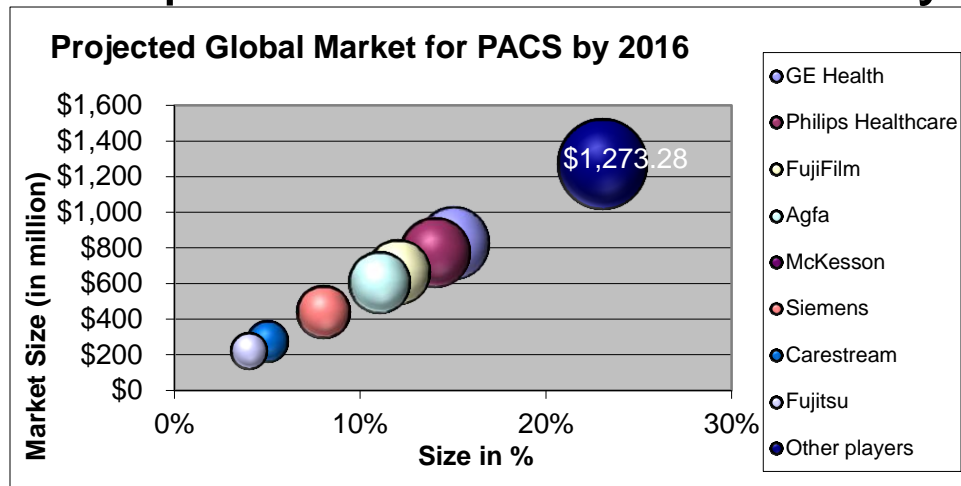
- Lack of efficient image tracking mechanism
- Lack of timely image quality check – major time lag between image acquisition and analysis
- Inefficient workflow, reminders and approval process
- Inefficient search capabilities due to missing or lack of appropriate metadata
- Inefficient reporting capabilities
- Inefficient image archival and retrieval processes
- Inefficient audit trail
- Lack of configurability in support of study protocol
- Solutions currently offered are very costly

Service to meet customers need

- Create biomedical image life cycle management service for customers to alleviate major pain points. Besides providing value added services to customers and increased earnings for CRO, new service should also integrate well with other existing services offered by CRO.

Market Size for Picture Archiving and Communication Systems (PACS)

- Global PACS market is expected to be at \$5.5B by 2016
- PACS market by type
 - Cardio - \$1.271B
 - Radiology - \$3.44B
 - Other - \$0.825B
- GE Healthcare, Philips Healthcare, FujiFilm, Agfa, McKesson, Siemens, Carestream, and Fujitsu expected to hold about \$4.3 B of global PACS market
- Other small players expected to hold \$1.273B of global PACS market



Target Market

- Segment of US market under “Other players”
- Based on number of current clinical studies in US
- Estimated at \$629 million
- Target market
 - excludes any major hospitals but includes community hospitals
 - includes smaller clinical setups and physician offices
 - has no major stand alone solution for end-to-end image life cycle management
 - is highly fragmented – opportunity to integrate through industry standards
 - consists of proprietary PACS solution with little to no standards
 - has none or limited vendor neutral image archiving and retrieval solutions
 - offers PACS solution as part of bundled service
 - consists of customers with low market capital, revenue, or no revenue at all – low R&D and clinical trials budget
 - offers low value solutions, primarily just image storage and retrieval, at high cost
 - is in good position to adopt new technologies like software as a service (SAAS), mobile computing, online storage, cloud computing, and enterprise content management because of reduced technology cost

Competitors Analysis

Competitor	Solution	Possibilities for CRO
Medical Metrics Inc (MMI)	<ul style="list-style-type: none"> Provides very basic image management solution i.e. image storage, retrieval and tracking PACS is not Medical Metrics area of expertise 	<ul style="list-style-type: none"> Opportunity to create and offer PACS solution along with other current portfolio of services
Canfield Scientific Inc (CSI)	<ul style="list-style-type: none"> Provider of imaging systems services and products but product portfolio doesn't show any stand alone end-to-end PACS solution Seems to have a good understanding of imaging market but costly 	<ul style="list-style-type: none"> Partner with CSI and utilize it's expertise in imaging domain to create new PACS solution
Quantificare	<ul style="list-style-type: none"> Has PACS solution in market segment that CRO will be competing Does not have robust end to end solution 	<ul style="list-style-type: none"> Help Quantificare, improvise on its current service. Create better PACS solution by sharing cost of development
Intelarad Good benchmark	<ul style="list-style-type: none"> Purely PACS solution provider Closer match to what CRO is trying to create 	<ul style="list-style-type: none"> Evaluate for possible partnership Conduct analysis of Intelarad's market segment to better position in PACS market
SCImage Best benchmark	<ul style="list-style-type: none"> Has cloud based PACS solution based on DICOM and HL7 standards. Closest match to what CRO is trying to create 	<ul style="list-style-type: none"> Evaluate for possible partnership Conduct analysis of SCImage's market segment to better position in PACS market

Go-To Market Strategy

- **Strategy #1** – Partner with one of the players in PACS market and bundle solution into current services
- **Strategy #2** – Create PACS solution by integrating available open source solutions, avoid paying licensing fees on patented technologies, and keep development cost low
- **Strategy #3** – Build scalable solution using latest technologies and industry standards

Assumptions & Limitations

- Report is based on publicly available information on internet from providers like GlobeData, Clinicaltrials.org
- Data from providers couldn't be verified
- Based on secondary data and some primary data
- No financial data for any of the competitors in “Other players” segment could be found
- Further analysis of target market segment will be required to identify detailed product features, positioning, and pricing
- Market share for key players will not change