SaaS/Cloud Computing
in Healthcare Industry
– Brief Overview

Aug 2014
SaaS/Cloud Computing in Healthcare

Executive Summary

- Healthcare providers are facing rising costs due to increased government regulations for the adoption of EMRs that automates with health information exchanges. With the rising costs, tight budgets and lack of proper IT infrastructure, many healthcare organizations are fast adopting cloud based solutions (specially SaaS) to meet their on-going needs.

- Though initially slow, the global healthcare cloud computing market has witnessed significant growth over the last few years.

- In 2013, the global healthcare cloud computing market was valued at US$2.5 billion.
  - Non Clinical Information Systems (NCIS) accounted for two-third of the market.
  - North America was the largest market with 66% share.

- In recent years, SaaS based applications are gaining momentum with growing demand from healthcare providers.

- Hosting clinical applications is the most common area for which healthcare organizations rely on cloud services.

- The global healthcare cloud computing market is highly fragmented with a large number of players operating in the market.
  - The market is witnessing steady M&A and investment activities which is likely to continue in the coming years.

- Lower infrastructure, maintenance and energy costs are some of the key demand drivers of cloud computing/SaaS in healthcare.

- Consequently, the global healthcare cloud computing market is expected to grow at a CAGR of 20.5% from 2013 to 2018, to reach US$6.5 billion in 2018.
SaaS/Cloud Computing in Healthcare

Introduction

- In simple words “cloud computing involves storing and accessing applications and data over the Internet as opposed to a physical machine (server) located at the office.”

- Cloud computing comprises of three major service models, software-as-a-service (SaaS), platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS)

  - SaaS is a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted. PaaS provides a computing platform and a solution stack as a service. IaaS is the most basic cloud-service model and uses physical or virtual computers, machines and other resources.

- In recent years, healthcare companies are increasingly adopting cloud computing.

- The trend is expected to intensify even further in the coming years with healthcare cloud computing market is poised to grow at a CAGR of over 20% during 2013-2018 reaching US$6.5 billion in 2018.

Due to competing priorities such as HITECH/ARRA, ICD-10, 5010 and ACA, healthcare providers are struggling to determine cost efficient ways to avail accessible healthcare market information. With the rising healthcare costs, tight budgets, inefficient IT staff and lack of IT infrastructure, many healthcare organizations are finding cloud solutions an attractive option to meet their on-going needs.

<table>
<thead>
<tr>
<th>CLOUD CLIENTS</th>
<th>SaaS</th>
<th>PaaS</th>
<th>IaaS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web browser, mobile app, thin client, terminal emulator…</td>
<td>CRM, email, virtual desktop, communications…</td>
<td>Executive runtime, database, web server, development tools…</td>
<td>Virtual machines, servers, storage, load balances, network</td>
</tr>
</tbody>
</table>

Global Cloud Computing Market in Healthcare (US$ billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>2.6</td>
</tr>
<tr>
<td>2018E</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Source: Micro Market Monitor
SaaS/Cloud Computing in Healthcare

**Cloud computing and its components**

Till 2011, only about 4% of healthcare IT providers had adopted some form of cloud computing, however since then the market started to grow at a healthy rate of about 20% each year

- Of the total cloud computing market, Non-Clinical Information System (NCIS) accounted for US$1,702.4 million, while Clinical Information System (CIS) accounted for US$871.8 million in 2013
  - Under CIS, Picture Archiving and Communication System (PACS) accounted for 41% market share in 2013

**Healthcare Cloud Computing Market by Service Model, 2011**

(100% = US$1.8 billion)

- SaaS Consulting Service
- SaaS Engineering Service
- SaaS QA Service
- SaaS Infrastructure Management Service
- SaaS Support Service

- IaaS 88%
- PaaS 10%
- SaaS 2%

Source: Transparency Market Research

- Healthcare cloud computing is a fast emerging sector growing at over 20% per year. Among cloud computing segments, SaaS based applications gained significant momentum from 2011. It accounted for ~2.4% of total market in 2011

- IaaS which includes virtualized servers, storage, networking, firewalls, backups, recovery, archiving, and associated management tools was the largest sector accounting for 88% of the total market in 2011

- PaaS is mainly used to improve developer efficiency, getting software applications to market faster, and enhanced infrastructure. It accounted ~10% of the market in 2011

**Global Healthcare Cloud Computing Market by type, 2013 (100% = US$2.6 billion)**

- NCIS 66%
- CIS 34%
North America, primarily the US, is the largest contributor in this market as a result of various regulatory changes which mandated the adoption of electronic medical records. These include,

- Transition from ASC x12 version 4010 to 5010 claims processing transactions
- Conversion from ICD-09 to ICD-10 clinical diagnosis codes
- Meaningful Use rules of American Recovery and Reinvestment Act (ARRA) and Health Information Technology for Economic and Clinical Health Act (HITECH)

Note: Rest of the World accounted for 5% market share
Key Drivers – SaaS / Cloud Computing

- **Lower Cost of Ownership**
  Through cloud/SaaS, healthcare organizations can pay for what they use while saving on repair and maintenance, software and licensing, and physical space.

- **Increased Efficiency**
  Cloud/SaaS can increase the utilization of resources owing to time sharing, thus making collaborating/sharing easier between disparate offices and remote workers.

- **Increased Business Agility**
  Cloud/SaaS applications are highly automated and fast to deploy, with the ability to create scalable services and applications instantly.

- **Information Ubiquity**
  Cloud/SaaS supports 24/7 accessibility to applications and services from anywhere.

- **Disaster Recovery Capabilities**
  Cloud/SaaS helps in achieving resilience through ultra-redundant architecture creating a virtual disaster recovery solution for organizations.

Key Benefits of SaaS/Cloud Computing

- Cost efficiency and less upfront investment
- Increased business focus on more strategic activities
- Interoperability – ability to share data across facilities
- Accelerated exchange development
- Seamless integrated healthcare delivery
SaaS/Cloud Computing in Healthcare

SaaS/Cloud Computing – Key Trends

SaaS is getting increasingly popular among the healthcare provider organizations in recent years. According to a survey conducted by HIMSS Analytics (a Chicago based healthcare analytics firm), SaaS-based applications are the most popular among healthcare providers in recent years. Notably, 83% of the surveyees use cloud base services, while 9.3% plan to adopt the same.

**Use of Cloud-based Applications (100% = 124 respondents)**

- SaaS: 66.9%
- IaaS: 15.3%
- PaaS: 2.4%
- Others: 15.3%

**Source:** 2014 HIMSS Analytics Cloud Survey, June 2014

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**Adoption & Use – Cloud Computing**

**Top Reasons for Adopting**

- Maintenance Cost
- Speed of Development
- Staff Challenges

**Major Use of Cloud Services**

- HIE
  - Clinical App + Data
  - HR App + Data
  - Back Up + Disaster Recovery

**Areas of Expansion**

- Nearly all adopters will expand cloud services

**Areas of Expansion**

- Hosting of Archived Data
- Back Up + Disaster Recovery
- Hosting of Operational App+Data
The global healthcare SaaS/cloud computing market is highly fragmented with no one player occupying more than 5% of the market. Some of the key players in this market are:

<table>
<thead>
<tr>
<th>Key Players</th>
<th>Company Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CareCloud Corporation (US)</td>
<td>CareCloud is a provider of cloud-based healthcare IT software and services primarily electronic health record, practice management and revenue cycle management solutions</td>
</tr>
<tr>
<td>ClearDATA Networks (US)</td>
<td>ClearDATA Networks is a healthcare focused cloud computing company and provides the key HealthDATA technology which features a multi-tier authentication system with PHI audit logging, intrusion detection, vulnerability scanning, geographically disperse replication, and many more comprehensive and differentiated features</td>
</tr>
<tr>
<td>Agfa Healthcare (Belgium)</td>
<td>Agfa HealthCare is a provider of integrated IT solutions, state-of-the-art diagnostic imaging and contrast media solutions for hospitals and other healthcare centres</td>
</tr>
<tr>
<td>Merge Healthcare Inc. (US)</td>
<td>Merge Healthcare provides enterprise and cloud-based technologies for image intensive specialties that support access to any image, anywhere, any time. It also provides clinical trials software with end-to-end study support in a single platform and other intelligent health data and analytics solutions</td>
</tr>
<tr>
<td>Carestream Health (US)</td>
<td>Carestream Health is a worldwide provider of medical and dental imaging systems and IT solutions; X-ray imaging systems for non-destructive testing and advanced materials for the precision films and electronics markets</td>
</tr>
<tr>
<td>Oracle Corporation (US)</td>
<td>Oracle Corporation provides healthcare organizations a range of solutions in the areas of integrate business and clinical information system, patient care, collaboration, patient data management, health information exchange and IT infrastructure</td>
</tr>
<tr>
<td>Athenahealth, Inc (US)</td>
<td>Athenahealth provides cloud-based services for EHR, practice management and care coordination</td>
</tr>
<tr>
<td>Global Net Access Health (GNAX - US)</td>
<td>GNAX through its division GNAX health provides healthcare IT services and solutions for organizations across the US including Vendor Neutral Archive, Cloud Computing, Data Centre Services, Back up Support/Disaster Recovery, Health Information Exchange</td>
</tr>
<tr>
<td>EMC Corporation (US)</td>
<td>EMC corporation provides a range of healthcare solutions for providers including backup and recovery solutions, collaborative healthcare solutions, advanced medical imaging solutions, documentum regulatory express and virtual desktop imaging solutions</td>
</tr>
<tr>
<td>VMware, Inc. (US)</td>
<td>VMware provides healthcare cloud solutions in the area of point of care, ISV support and care systems analytics</td>
</tr>
</tbody>
</table>
The healthcare SaaS/cloud computing segment is witnessing steady M&A and investment activities, which is expected to continue in the coming years.

<table>
<thead>
<tr>
<th>Date</th>
<th>Target</th>
<th>Target Description</th>
<th>Acquirer/Investor(s)</th>
<th>Deal Size (US$ million)</th>
<th>Deal Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/10/14</td>
<td>ikaSystems</td>
<td>Provider of cloud-based software for the healthcare-payer market. The company provides an enterprise-level platform to support healthcare payers’ commercial, Medicare and Medicaid lines of business</td>
<td>NA</td>
<td>15.0</td>
<td>Later Stage VC</td>
</tr>
<tr>
<td>01/16/14</td>
<td>TDX Group Limited</td>
<td>Provides debt collection and revenue management SaaS for the energy, financial services, public sector, healthcare, telecoms and debt collection agencies globally. Also provides related consulting and advisory services</td>
<td>Equifax Inc.</td>
<td>327.0</td>
<td>Acquisition</td>
</tr>
<tr>
<td>04/01/14</td>
<td>Treo Solutions</td>
<td>A leading provider of data analytics and business intelligence to healthcare payers and providers</td>
<td>3M</td>
<td>NA</td>
<td>Acquisition</td>
</tr>
<tr>
<td>04/29/14</td>
<td>NantHealth</td>
<td>Developer of fiber network, cloud computing and wireless mobile technology to converge digital technologies to transform scientific research and healthcare</td>
<td>BlackBerry, Kuwait Investment Authority</td>
<td>100.0</td>
<td>Later Stage VC</td>
</tr>
<tr>
<td>06/18/13</td>
<td>CareCloud Corp</td>
<td>Provider of cloud computing and revenue cycle management for the healthcare industry</td>
<td>Intel Capital, Norwest Venture Partners, Tenaya Capita</td>
<td>20.0</td>
<td>Private Placement</td>
</tr>
</tbody>
</table>

“M&A in the SaaS space is projected to increase significantly, with projections indicating over $25.0 billion in SaaS acquisitions over the next 20 months, compared to $17.0 billion in the prior 20-month period”

- Siemer & Associates SaaS Report 2013August 2013
Competitive Review of

- ABCO (CRIMSON)
- IMS HEALTH
The Advisory Board Company (ABCO); Crimson
Overview

The Advisory Board Company (ABCO) provides comprehensive research, consulting, business intelligence and performance technology software to hospitals and education industries in the US and internationally.

ABCO was established in 1979 with a mission to conduct research on any question, for any company, in any industry.

In 1986, the Company created a health care-focused strategic research division and launched its first membership program, the Health Care Advisory Board.

ABCO successfully completed its IPO in 2001 and now focuses its operations on health care and education sectors.

The Company offers its services to more than 4,500 organizations including hospitals, health systems, pharmaceutical and biotechnology companies, healthcare insurers, colleges, universities and other healthcare focused organizations.

Break-up, Member Base (Global)

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>3,900</td>
</tr>
<tr>
<td>Education</td>
<td>600</td>
</tr>
<tr>
<td>Total</td>
<td>4,500</td>
</tr>
</tbody>
</table>

Latest Financials

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>US$520.6 million</td>
</tr>
<tr>
<td>Operating Profit/(Loss)</td>
<td>US$47.2 million</td>
</tr>
<tr>
<td>Net Profit /(Loss)</td>
<td>US$24.8 million</td>
</tr>
<tr>
<td>Diluted EPS</td>
<td>US$0.67</td>
</tr>
<tr>
<td>Shares Outstanding</td>
<td>36.6 million</td>
</tr>
<tr>
<td>Total Assets</td>
<td>US$1,041.3 million</td>
</tr>
<tr>
<td>Total Members</td>
<td>4,534</td>
</tr>
<tr>
<td>Average contract value</td>
<td>US$119,520</td>
</tr>
</tbody>
</table>

Company ownership and contacts

- Ownership: Public (NASDAQ: ABCO)
- Chairman: Robert W. Musslewhite
- Address: 2445 M St. NW
- City, State: Washington, DC 20037
- Website: www.advisory.com
The Advisory Board Company

Services

- **Research and Insights:**
  It helps the executives worldwide to work smarter and faster by providing forecasting and decision support tools and latest analysis from 3,000+ industry experts

- **Performance Technology:**
  The SaaS-based analytical platforms addresses the most critical challenges, including physician performance, population health, revenue cycle, referral growth and surgical profitability

- **Consulting and Management Services:**
  It provides strategic and operational support to member institutions to achieve clinical quality and financial performance goals and implement best practices

- **Solutions:**
  It provides customized portfolios of performance technologies and consulting services to help member organizations tackle their specific problems

- **Talent Development:**
  It provides training and management support to members
ABC0’s performance technology is a set of leading vertical SaaS platform catering to healthcare sector. The Company pairs its applications with a dedicated support team and collaborative cohort networking to help members address their most critical challenges, including physician performance, population health, revenue cycle, referral growth, surgical profitability, and supply/service cost.
Crimson Continuum of Care

Collaborate physician efforts to meet cost and quality goals.

ABOUT Crimson Continuum of Care

The Crimson Continuum of Care is part of the Crimson Clinical Advantage suite of offerings. The platform provides credible and severity-adjusted performance profiles, enabling hospital–physician collaboration for achieving the quality goals and secure cost savings.

KEY FEATURES

1. User friendly interface
2. Full range of cost, quality and utilization measures
3. Seamless integration of inpatient, outpatient, and ambulatory data
4. Access to patient-level details for further analysis
5. Proven methodology for severity-adjusting data

KEY APPLICATION

Crimson Continuum of Care helps hospitals engage physicians by providing direct access to credible, intuitive performance data that physicians can analyze themselves.
Crimson Market Advantage

Know your place in the market with exhaustive market screening profile

ABOUT Crimson Market Advantage

Crimson Market Advantage helps in assessing the physician’s performance and building referral network. The platform provides data and expert support to identify the top referring PCP’s and specialists in an organization.

KEY FEATURES

1. Provides a broad market view by comparing the inpatient and outpatient revenues from different physicians
2. Tracks the performance of physicians
3. Analyses market’s referral pattern
4. Provides expert support to understand physician behavior

KEY APPLICATION

With Crimson Market Advantage member organizations can monitor the performance of their physicians and identify revenue generated from their referrals. The software also tracks physician referrals to competing hospitals.
ABOUT Crimson Care Management

The platform serves as a backbone to a hospital’s care management program by integrating all data and providing a centralized platform for collaboration. It allows care team members to develop and execute customized care programs with the help of management workflow technology.

KEY FEATURES

1. Integrates data from various sources to highlight individual needs and risks
2. Provides customized best practice care plans to help each patient receive appropriate interventions
3. Serves as a centralized vehicle for communication and collaboration across a diverse care team
4. Optimizes workflow
5. Provides access to broader insights and best practices on population health

KEY APPLICATION

The Crimson Care Management program primarily helps in designing the care management program and structuring staffing requirements.
Crimson Population Risk Management

A unique platform combining ABCO’s insight with Milliman MedInsight’s database

ABOUT Crimson Population Risk Management

The Population Risk Management platform provides a 360-degree view of patient care by combining ABCO’s insight on health system strategy with a benchmarking database and clinical algorithms. It allows member organizations to evaluate their own strengths and liabilities.

KEY FEATURES

1. Provides a comprehensive view of the care continuum by gathering data from all commercial payers in the market, including Medicare and New York State’s Medicare program.
2. Provides access to Milliman MedInsight’s clinical algorithms and benchmarks, covering a database of more than 45 million lives and 2.5 billion claims.
3. Assists in setting up infrastructure for care management.
4. Provides embedded workflow tools at the point of care.

KEY APPLICATION

The platform helps in implementing best practices in population risk management and mapping accountability for organizational progress.
Crimson Medical Group Advantage

Gain visibility across all areas of performance

ABOUT Crimson Medical Group Advantage

Crimson Medical Group Advantage’s analytical platform helps organizations monitor practice performance across productivity, operations, patient access, mid-level provider utilization, patient panel management, and collections. The platform provides all the information needed to manage the practice effectively.

KEY FEATURES

1. Provides insights into root cause and solutions
2. Provides proprietary, benchmark-driven analytics that enable peer-to-peer comparisons
3. Impact calculators that quantify and compare scenarios
4. Creates heat maps that provide visibility into referral patterns
5. Analyzes the organization’s current performance
6. Helps decision making by providing alternate solutions

KEY APPLICATION

The Crimson Medical Group Advantage guides the internal decision making process by demonstrating the best practices followed in the industry. The program helps members improve performance and identify opportunities.
Crimson Medical Referrals

Enhance referrals in and across the network

ABOUT Crimson Medical Referrals

Crimson Medical Referrals is a web-based, EMR-agnostic workflow platform that facilitates the referral process by connecting employed and independent PCPs, specialists and hospitals. It also provides patients the information they need to choose the best physician.

KEY FEATURES

1. Helps patients in selecting the most appropriate providers based on specialty, network affiliation, insurance, location, and quality of care with smart search
2. Facilitates sending and receiving referrals among both in-network and independent providers
3. Helps in scheduling the referral appointment for the patients before they leave their physician’s office
4. Shares accurate, updated clinical information to improve communication and quality of care
5. Tracks patient movement along the care continuum with provider-specific and aggregated reporting
The Members of ABCO’s programs have access to an integrated set of services such as best practices research studies, executive education seminars, customized research briefs, and web-based access to the program’s content database and decision support tools for a fixed annual fee:

- The Company charges a separate fixed annual membership fee for each program.
- Each program generally has a multi-year agreement.
- In 2013, ABCO had 4,534 members globally with an average contract value of US$119,520 per member.

The annual fees for various ABCO programs is generally paid in advance. The fees increase 2-3% annually.

The fees for different members may vary:

- Variation can be based on the target executive constituency and the specific combination of services provided.
- Annual fees for programs that offer best practices installation support are generally higher than for programs that do not offer this support.
The Advisory Board Company

Sales Team Structure

- The Advisory Board Company has a dedicated sales force responsible for selling new memberships around the world. As of March 2014, the Company had 199 new business development teams
  - Each business development team generally consists of two employees, one marketer and one marketing associate
  - The marketer is responsible for meeting in-person with prospective members whereas the marketing associate provides the back-end support from the office
- The Company maintains separate member service teams that are responsible for servicing and renewing existing memberships contracts
- The business development representatives travel 60% of the time and are compensated with base salary and variable, goal-based incentive bonuses
The Advisory Board Company

Customers

- ABCO has a large and prestigious membership-based spread across various programs. Globally, it has more than 4,500 members including some of the most prestigious health care institutions.
- ABCO members include the top players in the industry, including 99 of the 100 largest health systems.
- The leading Saas platform has more than 2,000 members with more than 3,700 memberships resulting in 60% of hospital admissions flowing through ABCO platform.
- ABCO’s overall membership includes leading hospitals, pharmaceutical and biotech companies, health care insurers and medical device companies.
  - ABCO’s hospital clients include Intermountain Healthcare, Hospital Corporation of America, Johns Hopkins Hospital, Massachusetts General Hospital and Henry Ford Health System, and Mayo Clinic.
- ABCO has relationships with approximately 4,700 CEOs, 23,000 senior executives, 19,000 product leaders and 60,000 line managers.
ABCOR serves a large and rapidly growing market. The strategic objective of the Company is to capitalize on the favorable characteristics of its target healthcare and education markets. To accomplish this objective the Company seeks to focus on the following:

- New product development
- Business acquisitions
- Strategic partnerships
- Capitalizing on the membership-based business model
- Development of research, analysis, and technology expertise
IMS Health Holdings, Inc.
(IMS Health)
Overview

- IMS Health Holdings Inc. is a services and technology company with dedicated product and service offerings for the healthcare sector.
- The Company was founded in 1954 by Bill Frohlich and David Dubow, as a market research firm to enable organisations make informed strategic decisions.
- The Company operates in more than 100 countries and has relationships with around 100,000 data suppliers globally. Its solutions are subscribed by the healthcare industry as well as by the governments and financial communities.
- In 2010 the Company was taken private by TPG Capital, CPP Investment Board and Leonard Green & Partners at a deal value of US$6 billion, making it the largest LBO in the preceding 3 years.
- On April 4, 2014, IMS became a public company following 4 years as a private company.

Company ownership and contacts

- Ownership: Public
- Address: 83 Wooster Heights Rd, Danbury, CT 06810
- Telephone: +203-448-4600
- Email: r@imshealth.com
- Website: www.imshealth.com

Latest Quarterly Financial Information

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<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Revenues</strong></td>
<td>US$662 million</td>
</tr>
<tr>
<td><strong>Operating Profit/(Loss)</strong></td>
<td>US$(39) million</td>
</tr>
<tr>
<td><strong>Net Profit/(Loss)</strong></td>
<td>US$(220) million</td>
</tr>
<tr>
<td><strong>Diluted EPS</strong></td>
<td>US$(0.67)</td>
</tr>
<tr>
<td><strong>Shares Outstanding</strong></td>
<td>332 million</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>US$7,561 million</td>
</tr>
<tr>
<td><strong>Total Debt</strong></td>
<td>US$3,970 million</td>
</tr>
<tr>
<td><strong>Cash and Liquid Assets</strong></td>
<td>US$292 million</td>
</tr>
</tbody>
</table>

Revenues – Geographical Breakup#

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100% = US$662 million
```

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- Americas, 45%
- EMEA, 39%
- Asia Pacific, 17%
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# For 3 Months ended June 30, 2014
IMS Health

Key product offerings for the healthcare providers

Service/product offerings of IMS Health serve the needs of healthcare organizations and decision makers around the globe, spanning across life science companies, including, pharmaceutical, biotechnology and consumer health companies, as well as, providers, payers, government agencies, policymakers, researchers and financial communities. The focus of this presentation is to provide information on IMS Health applications/product offerings for healthcare providers.
IMS MDsource 360°

For automating physician engagement to drive healthcare value initiatives

**ABOUT IMS MDsource 360°**

IMS MDsource 360° is a unique physician toolset that provides performance matrices by combining the quality, cost and patient matrices into a single, integrated, flexible solution. The output provided by the application is benchmarked against rigorous matrices.

**KEY FEATURES**

1. Provides information on how each physician compares to the benchmarks and other physicians
2. Delivers actionable points to physicians allowing collaboration and two-way communication
3. Enables medical directors to target low performers
4. Extends patient data beyond the practice, including all treated conditions, most recent medical history, prescription activity, care gaps, cross-setting treatment and demographics

**KEY APPLICATIONS**

Healthcare providers typically use MDsource 360° to see how they compare with other healthcare providers in terms of cost and quality, and to get insights into patient treatment and physician performance.
IMS Physician Insights 360°™

For optimizing strategic growth & improving competitive edge

ABOUT IMS Physician Insights 360°
IMS Physician Insights 360° is a SaaS based unique market intelligence tool for healthcare providers, primarily to help improve their competitive position

KEY FEATURES
1. Provides information on the market share and services demand by analysing patient cases based on diseases and facility procedure activities
2. Grants access to a physician’s key practice information based on facility affiliations and sanction history
3. Enables identification of providers who are driving volumes to specialists and sub-specialists
4. Provides information on referral leaks by discovering physicians who refer patients to out-of-network providers
5. Makes information available on procedure volume lost to competitors
6. Updates data quarterly, with less than 2 months of latency

KEY APPLICATIONS
Hospitals utilize this tool for maximizing on facility growth opportunities, strengthening referral networks, managing referral leakages and identifying right physicians for ACO or partnership programs
IMS Readmission Targeter™

To prevent readmissions & reduce financial penalties with improved patient post-discharge insights

**ABOUT IMS Readmission Targeter**

IMS Readmission Targeter is a solution for healthcare providers to reduce re-admission penalties by enabling them to pre-emptively identify patients at the risk of non-compliance and take suitable actions to prevent avoidable re-admissions.

**KEY FEATURES**

1. Enables tracking patient Rx activities irrespective of the location where the prescriptions are filled.
2. Plans effective follow-up call schedules and critical interventions by prioritizing patients as per their Rx insights.
3. Provides information on post-discharge behaviour of the patient, which is critical to achieving the desired health outcomes and enhancing patient satisfaction.

**KEY APPLICATIONS**

Hospitals utilize this tool primarily to reduce financial penalties associated with patient re-admissions. Additionally, it is utilized to direct follow-up call schedules effectively, gain insights on post-discharge behaviour of patients and improve overall healthcare treatment outcomes.
IMS Health
Customers & Relationships

IMS – Health, Revenue Sources

<table>
<thead>
<tr>
<th>Segment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceutical</td>
<td>85%</td>
</tr>
<tr>
<td>Others</td>
<td>15%</td>
</tr>
</tbody>
</table>

(100% = US$ 2,190 million)

IMS Health, Major Customer Segments

- Pharmaceutical
- Bio-Technology
- Health Payers
- Research

IMS Health - Customer Overview

The Company serves a broad customer base without excessive dependence to any single customer/company. Based on the latest available annual report, sales made to the traditional pharmaceutical companies accounted for approximately 85% of the Company’s 2009 revenues. In the same report the Company acknowledged that all major pharmaceutical and biotechnology companies are its customers.

For the period 2011-2012, the average length of Company's relationships with its top 25 clients was over 25 years and the retention rate for its top 1,000 clients was ~99%

* Report referred herein represents the latest available annual report for the period ended December 31, 2009
IMS Health
Growth Strategy & Future Prospects

IMS Growth Strategy

The Company believes that it is well positioned for continued growth across the markets it serves. Its future growth strategy includes:

• Build upon its extensive client relationships
• Capitalize on its presence in the emerging markets
• Continue to innovate
• Expand portfolio through strategic acquisitions
• Expand the penetration of its offerings to the broader healthcare marketplace

Future Opportunity

Historically, IMS Health has concentrated its efforts in the US$5 billion Information and Consulting services market, primarily for supporting the commercial functions of life science companies. In response to the needs of a broader set of life science clients for specialised information, IMS Health is:

- Expanding its offerings to serve the Information and Services market (US$18 billion)
- Offering an expanded range of technology services to the IT Services market. These services include data warehousing, IT outsourcing, and software applications (US$28 billion)

As a result, the Company now operates across the life sciences marketplace for Information and Technology Services, that is worth approximately US$50 billion

Acquisitions by IMS in the Last 10 Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Companies Acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>UNITED RESEARCH CHINA SHANGHAI</td>
</tr>
<tr>
<td>2005</td>
<td>PHARMETRICS</td>
</tr>
<tr>
<td>2006</td>
<td>LIFE SCIENCES PRACTICE OF SDG</td>
</tr>
<tr>
<td>2007</td>
<td>IHS MEDINITIATIVES VALUEMEDICS RESEARCH</td>
</tr>
<tr>
<td>2008</td>
<td>RMBC</td>
</tr>
<tr>
<td>2010</td>
<td>BROGAN</td>
</tr>
<tr>
<td>2011</td>
<td>ARDENTIA MED-VANTAGE</td>
</tr>
<tr>
<td>2012</td>
<td>PHARMARC DECISION VIEW TTC</td>
</tr>
<tr>
<td>2013</td>
<td>PYGARGUS APPATURE 360 VANTAGE INCENTIAL SOFTWARE SEMANTELLI</td>
</tr>
<tr>
<td>2014</td>
<td>FORCEA</td>
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