



# Data Migration, Integration and Reporting (DMIR) Framework

POINT OF VIEW PAPER

APRIL 2013

**HCL**

## TABLE OF CONTENTS

---

<b>EXECUTIVE SUMMARY</b>	<b>3</b>
<b>SUMMARY PROPOSITION</b>	<b>3</b>
<b>WHAT THIS HCL SERVICE BRINGS TO THE TABLE?</b>	<b>4</b>
<b>HIGH LEVEL ADOPTION/ DEPLOYMENT APPROACH</b>	<b>4</b>
<b>KEY PRINCIPLES TO THE APPROACH</b>	<b>7</b>
<b>COMMERCIAL OFFERINGS AND CREDIBILITY</b>	<b>8</b>
<b>SOLUTION POC DEMO</b>	<b>8</b>
<b>ABOUT HCL</b>	<b>9</b>

# Data Migration, Integration and Reporting (DMIR) Framework

## EXECUTIVE SUMMARY

Today's Informatics world is going through lot of changes through selection of new Informatics systems. One of the common challenges faced by industries is to successfully migrate data from one system to another. Most of the cases, data structures in source and target systems are different and 100% data migration will not be possible. So we need to curve out a solution which will migrate maximum amount of data to target system, will give a functionality to archive non-transferable data and view the same when needed. DMIR framework is a flexible domain centric framework, which can be applied to any standard integration engine. As an additional feature this framework is rule driven and can accommodate transfer of large image from any structured and unstructured sources as well.

## SUMMARY PROPOSITION

DMIR framework is designed to enable validated data migration, flexible data visualization and transfer of complex large sized data across network. Following sections will provide a consolidated view of features around this framework.

- Data Migration Framework:
  - Flexible architecture to define domain centric rule for data transport.
  - In-built data validation framework ensuring validated data transfer.
  - In-built error handler to ensure zero loss in data transfer.
  - Ability to scale up to allow large sized file transfer including images from structured and unstructured sources.
- Data Model Layer:
  - This layer will have key business model to map data element between source and target system
  - This layer can be configurable based on need of business
- Data Consolidation Layer:
  - This layer can extract data from various structured and unstructured layers
  - This layer can extract data from LIMS, ELN and other sources.
  - This layer will consolidate data into a Datawarehouse for visualization

- Data Visualization Framework:
  - Flexible data visualization tool for reporting and analytics

## WHAT THIS HCL SERVICE BRINGS TO THE TABLE?

### Services

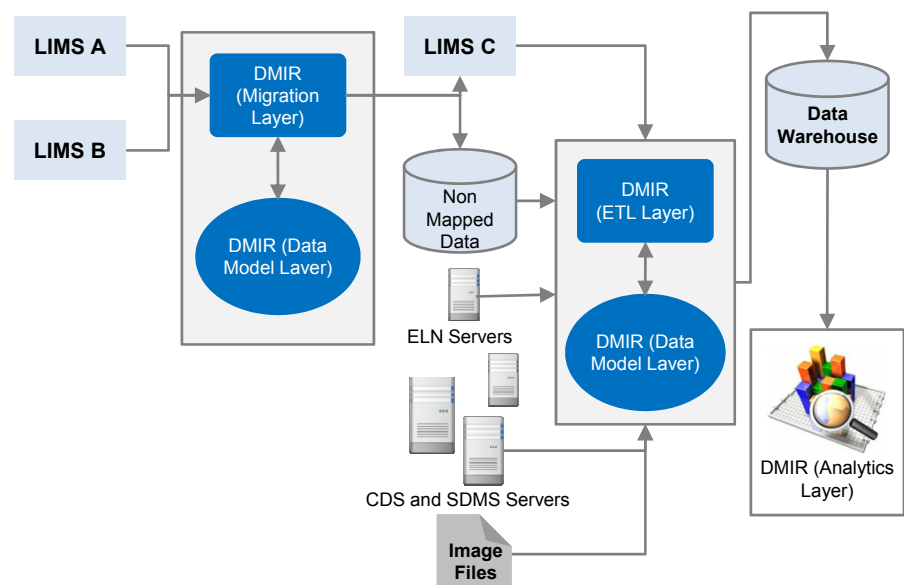
- Standardized data-migration service with supporting factory to migrate existing informatics data to new environment
- Standardized model creation service with domain expertise to map data between source and target system.
- Standardized data consolidation service through domain consultancy and ETL services
- Standardized data analysis and reporting service

### Accelerators

- Pre-defined, best in class Informatics Process Templates for rapid adoption and automation
- Data mapping framework and migration scripts

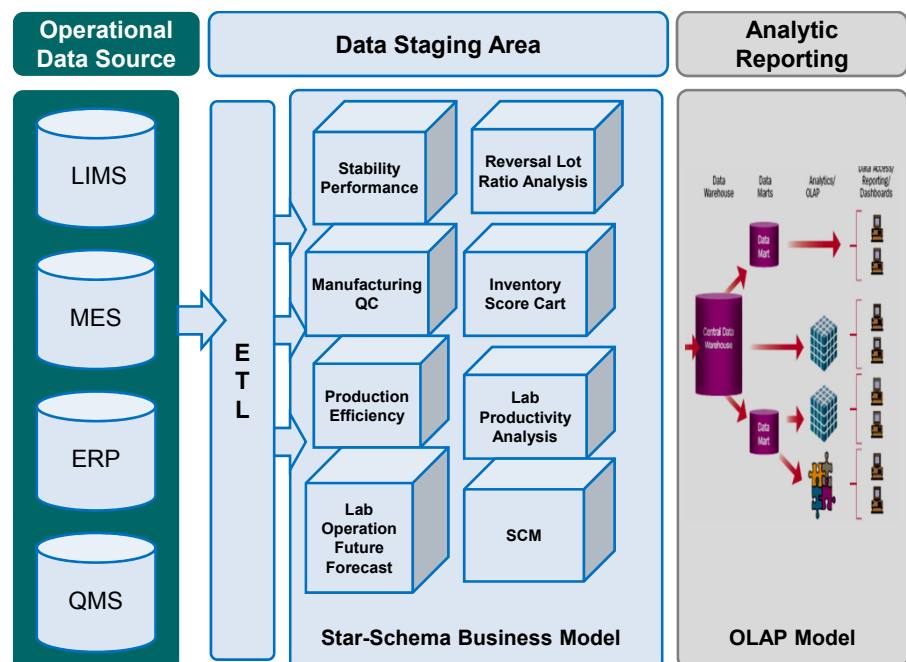
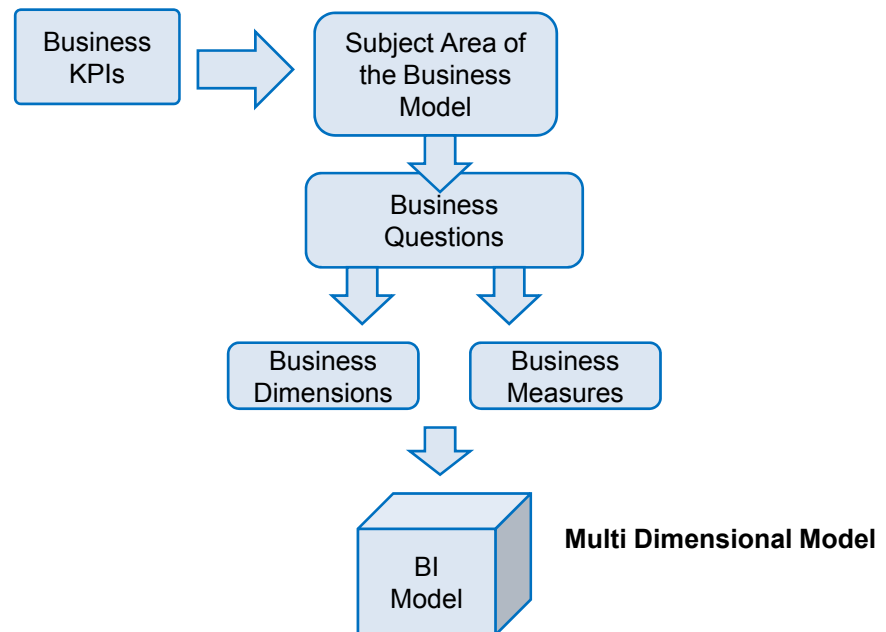
## HIGH LEVEL ADOPTION/ DEPLOYMENT APPROACH

The diagram below represents the high level 'business architecture' covered by the DMIR Platform:

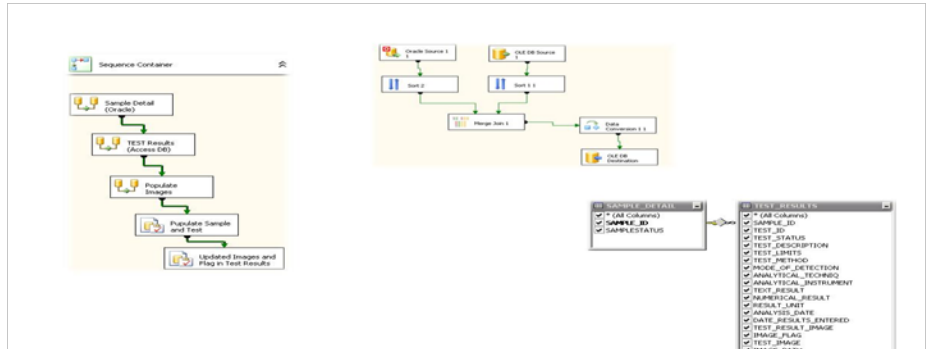


The above framework is comprised of the following four layers.

- **Data Migration Framework:** This layer enables validated data transfer between two different systems, which may be structurally similar or dissimilar
- **Data Model Layer:** This layer will have some defined business model or accelerators which will enable quick implementation of the model and tested data transfer. Following diagram demonstrate logical architecture of the business model of this layer



- **Data Consolidation Layer:** This layer will consolidate data from various sources and bring the same into a data warehouse.



- **Data Visualization Framework:** This layer will provide required reporting and analytics

1 of 27 | 100% | Find | Next

### Lab Sample & Test Results Report

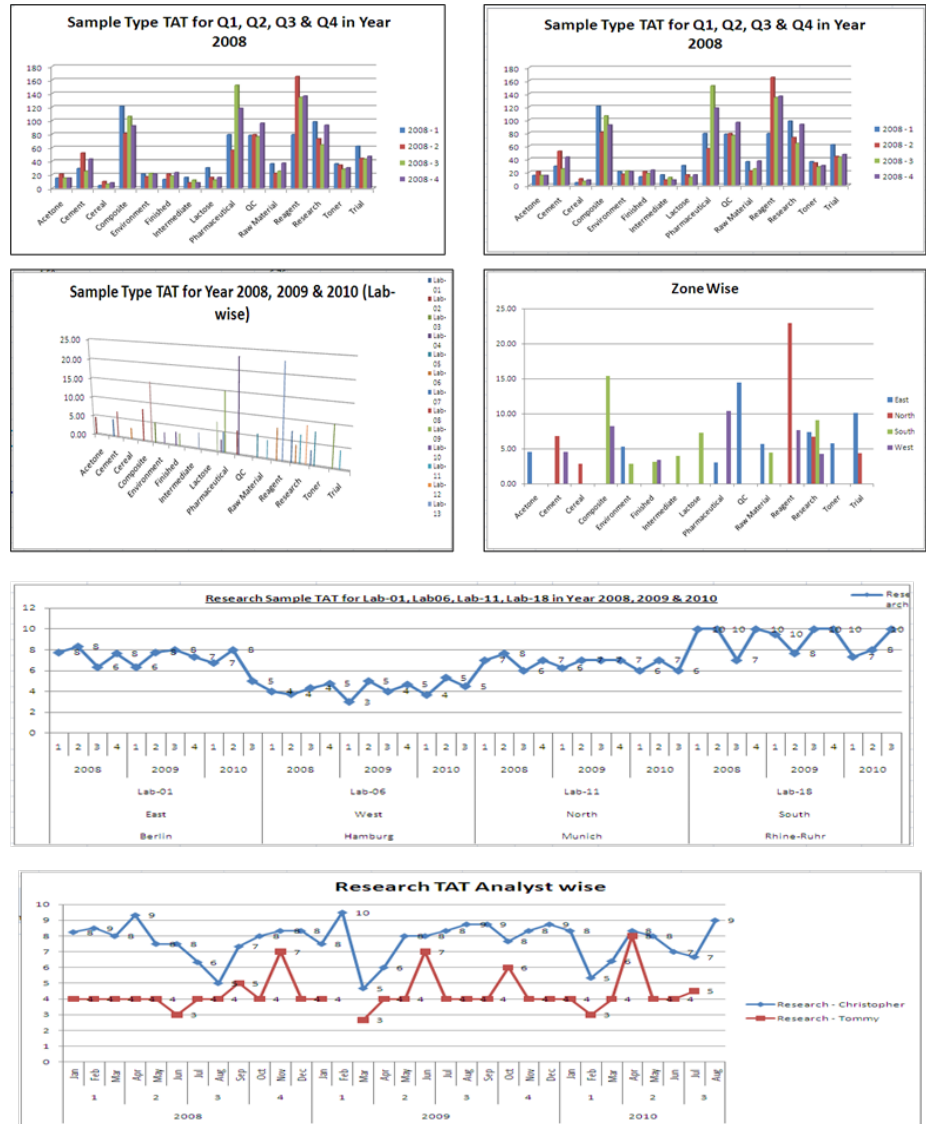
Sample ID : 0000001

SAMPLESTATUS	TEST ID	TEST STATUS	TEST DESCRIPTION	ANALYTICAL INSTRUMENT	TEXT RESULT	NUMERICAL RESULT	RESULT UNIT	ANALYSIS DATE	IMAGE PATH
Approved	C775H1	Approved	HPLC Assay	APOLLO	99.7 % w/w, (as is)	99.7	% w/w	1/4/2000	
	C775H2	Approved	HPLC Purity Diastereomeric Ratio	ATHENA	97.7 % a/a, C773=0.08%, C955=0.21%, RRT=0.51 (1.59%), 0.75 (0.09%)	97.7	% a/a	1/3/2000	
	C775H3	Approved	Diastereomeric Ratio	ATHENA	96.2 %	96.2	%	1/3/2000	
	DESC	Approved	Appearance	Not Applicable	white solid			1/3/2000	
	IR	Approved	Identification - IR	OSCAR	conforms to standard			1/3/2000	

1 of 1 | 100% | Find | Next

### Lab Sample & Test Results Image Report

SAMPLE ID	SAMPLESTATUS	TEST ID	TEST STATUS	TEST DESCRIPTION	TEST METHOD	ANALYTICAL TECHNIQUE	ANALYSIS DATE	IMAGE PATH
0401824	Logged In							
0501599	Logged In	1HNMR	Logged	1HNMR	Research Sample	NMR		ftp://10.137.12.234-00/0501599-1HNMR.jpg
0600337	Logged In	8751H1	Assigned	Assay - HPLC	S11404v	HPLC		
0600208	Logged In	C933RC	Logged	Blank HPLC - Rinse Cleaning Verification Procedure	C933RC	Ion Chromatography		
0600225	Logged In	C933RC	Assigned	HPLC - Rinse Cleaning Verification Procedure	C933RC	Ion Chromatography		
0404226	Logged In	DZ11V1	Logged	Assay of Cyanide Ion by UV	PPCT104a	UV		
0401824	Logged In	ESBQ2	Logged	Development	Research Sample	GC		



## KEY PRINCIPLES TO THE APPROACH

- The choice of technology to drive the ‘transaction’ will not drive the approach – this will be an HCL ‘back-office’ decision
- The key focus will be on configuring the business process tool to drive rapid business benefit. To this end, HCL would recommend that the initiative is driven by focusing on the following processes

- AS IS Study of Source System (s)
  - Define or edit Business Model for Data Migration
  - Study of TO BE or Target system
  - Configuration of Validation Rule
  - Data Migration & subsequent validation
  - Data Consolidation at Datawarehouse
  - Define KPI for reporting and analysis
  - Report Development
- The desired end state of the exercise would be: A flexible business process layer offering extended process coverage, sitting on a robust industry standard transaction engine, which itself is un-customised, enabling easier future upgrade paths and less hindrance from a technology maintenance perspective.

## COMMERCIAL OFFERINGS AND CREDIBILITY

HCL is offering the DMIR framework Platform as a core service offering with predefined business model and technology agnostic migration and consolidation framework.

The DMIR Platform is backed up by the following HCL capabilities:

- Core team of Industry Informatics thought leaders with over 50 yrs. of collective Lab Informatics wisdom
- Core team of 100 plus Lab Informatics practitioners, currently delivering Services to two of the largest and most complex Lab Informatics systems in the world
- Business Process Management Practice of over 300 Qualified Experts
- Dedicated IT Infrastructure in highly secure, qualified/ regulated Data Centre

## SOLUTION POC DEMO

Solution POC demo is available at

<http://www.sendspace.com/file/5wvnfu>



ENGINEERING AND  
R&D SERVICESCUSTOM APPLICATION  
SERVICESENTERPRISE APPLICATION  
SERVICESENTERPRISE  
TRANSFORMATION SERVICESIT INFRASTRUCTURE  
MANAGEMENTBUSINESS PROCESS  
OUTSOURCINGContact: [healthcare@hcl.com](mailto:healthcare@hcl.com)

## ABOUT HCL

### About HCL Technologies

HCL Technologies is a leading global IT services company, working with clients in the areas that impact and redefine the core of their businesses. Since its inception into the global landscape after its IPO in 1999, HCL focuses on 'transformational outsourcing', underlined by innovation and value creation, and offers integrated portfolio of services including software-led IT solutions, remote infrastructure management, engineering and R&D services and BPO. HCL leverages its extensive global offshore infrastructure and network of offices in 31 countries to provide holistic, multi-service delivery in key industry verticals including Financial Services, Manufacturing, Consumer Services, Public Services and Healthcare. HCL takes pride in its philosophy of 'Employees First, Customers Second' which empowers our 85,194 transformers to create a real value for the customers. HCL Technologies, along with its subsidiaries, had consolidated revenues of US\$ 4.4 billion (23,499 crores), as on 31 Dec 2012 (on LTM basis). For more information, please visit [www.hcltech.com](http://www.hcltech.com)

### About HCL Enterprise

HCL is a \$6.2 billion leading global technology and IT enterprise comprising two companies listed in India – HCL Technologies and HCL Infosystems. Founded in 1976, HCL is one of India's original IT garage start-ups. A pioneer of modern computing, HCL is a global transformational enterprise today. Its range of offerings includes product engineering, custom & package applications, BPO, IT infrastructure services, IT hardware, systems integration, and distribution of information and communications technology (ICT) products across a wide range of focused industry verticals. The HCL team consists of over 90,000 professionals of diverse nationalities, who operate from 31 countries including over 500 points of presence in India. For more information, please visit [www.hcl.com](http://www.hcl.com)

