

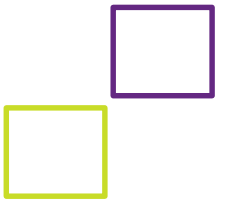


Business-friendly Solutions

# **ITC Infotech's FHIR based Interoperability Solution (Modular, Platform Agnostic, SaaS based + Plug & Play)**



# FHIR - The Context

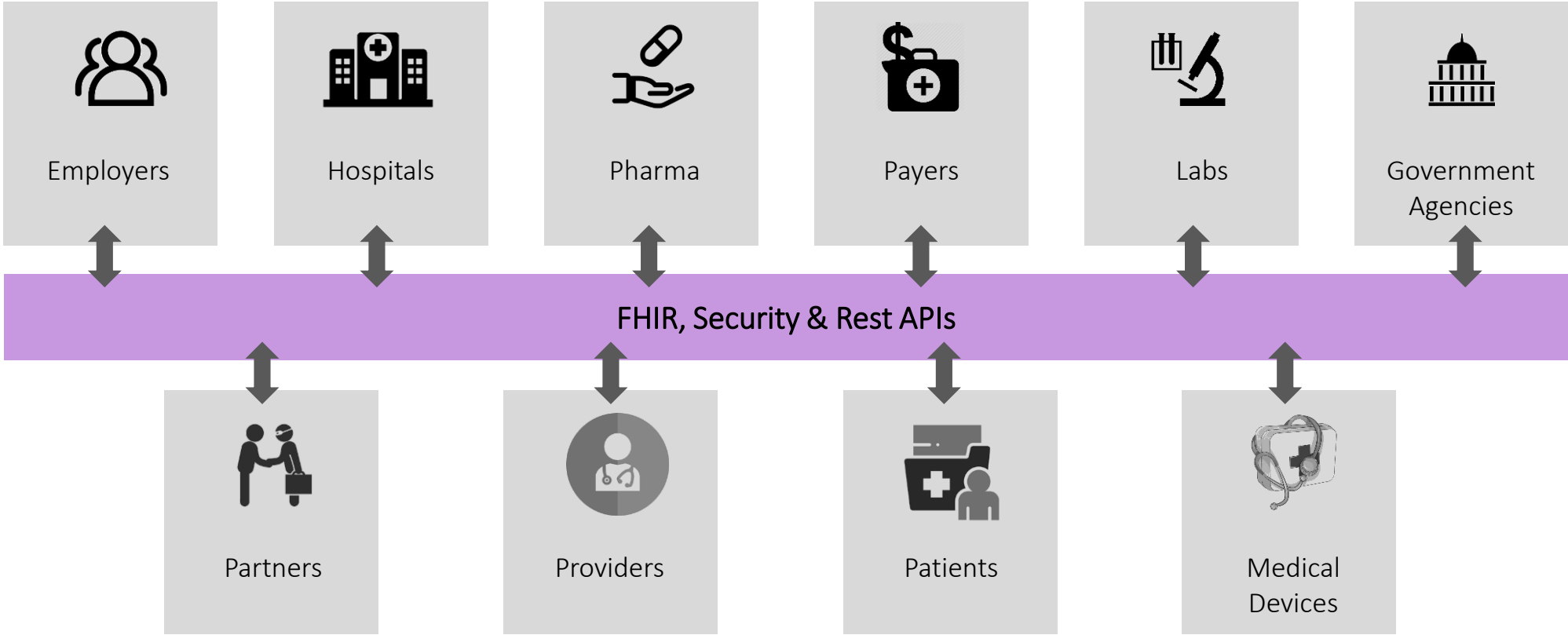
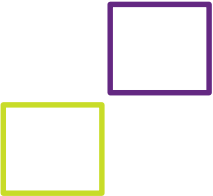


US government has given mandate to Payers (Health Insurance organizations) to adhere to FHIR interoperability needs by July 2021 to meet the Interoperability and Patient Access final rule as part of the Trump Administration's MyHealthEData initiative.

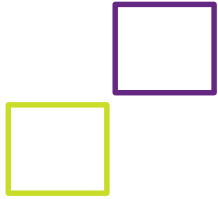
This final rule is focused on patient data using CMS (Center for Medicare & Medicaid Services) to regulate Medicare Advantage (MA), Medicaid, CHIP, and Qualified Health Plan (QHP) issuers on the Federally facilitated Exchanges (FfEs). Following deadlines are given to Payers to provide FHIR APIs

- Patient Access API (applicable January 1, 2021)
- Provider Directory API (applicable January 1, 2021)
- Payer-to-Payer Data Exchange (applicable January 1, 2022)
- Improving the Dually Eligible Experience by Increasing the Frequency of Federal-State Data Exchanges (applicable April 1, 2022)
- Digital Contact Information (applicable late 2020)
- Admission, Discharge, and Transfer Event Notifications (applicable spring 2021)

# Healthcare – Interoperability through FHIR



# Our Understanding - Interoperability Requirements for Payers (1/2)



## Publish an API for third party developers

- Allow members to access their own data (or grant consent to others)
- Implement and Maintain open API, to support Medicare Advantage Enrollees, Medicaid and CHIP Managed Care beneficiaries and FFE- QHP enrollees

- Administrative and Clinical data
- The API must be compliant with:
  - *HL7 FHIR technical standards & Implementation specifications*
  - *HIPAA privacy rule*



Deadlines



July 1, 2021



## Payer to Payer Data Exchange

- At the request of enrollee, Payer be able to send /receive data to any other payer (up to 5 years after disenrollment)
- Maintain a process for the electronic exchange of data

- Clinical data only for now
- Payers must comply with patient's requests to send their clinical data inclusive of elements defined in **United States Core Data for Interoperability (USCDI)**



January 1, 2022



## Participate in trusted exchange networks

- Payers to participate in trusted exchange networks to allow the free and secure exchange of information using common standards
- Care Coordination through trusted exchange networks

- Work on Trusted Exchange Framework and Common Agreement (TEFCA) is currently in progress and the rule is yet to be finalized



Not finalized

## Payer Readiness

Setup IT Infrastructure for API enablement

Enable seamless bi-directional data exchange

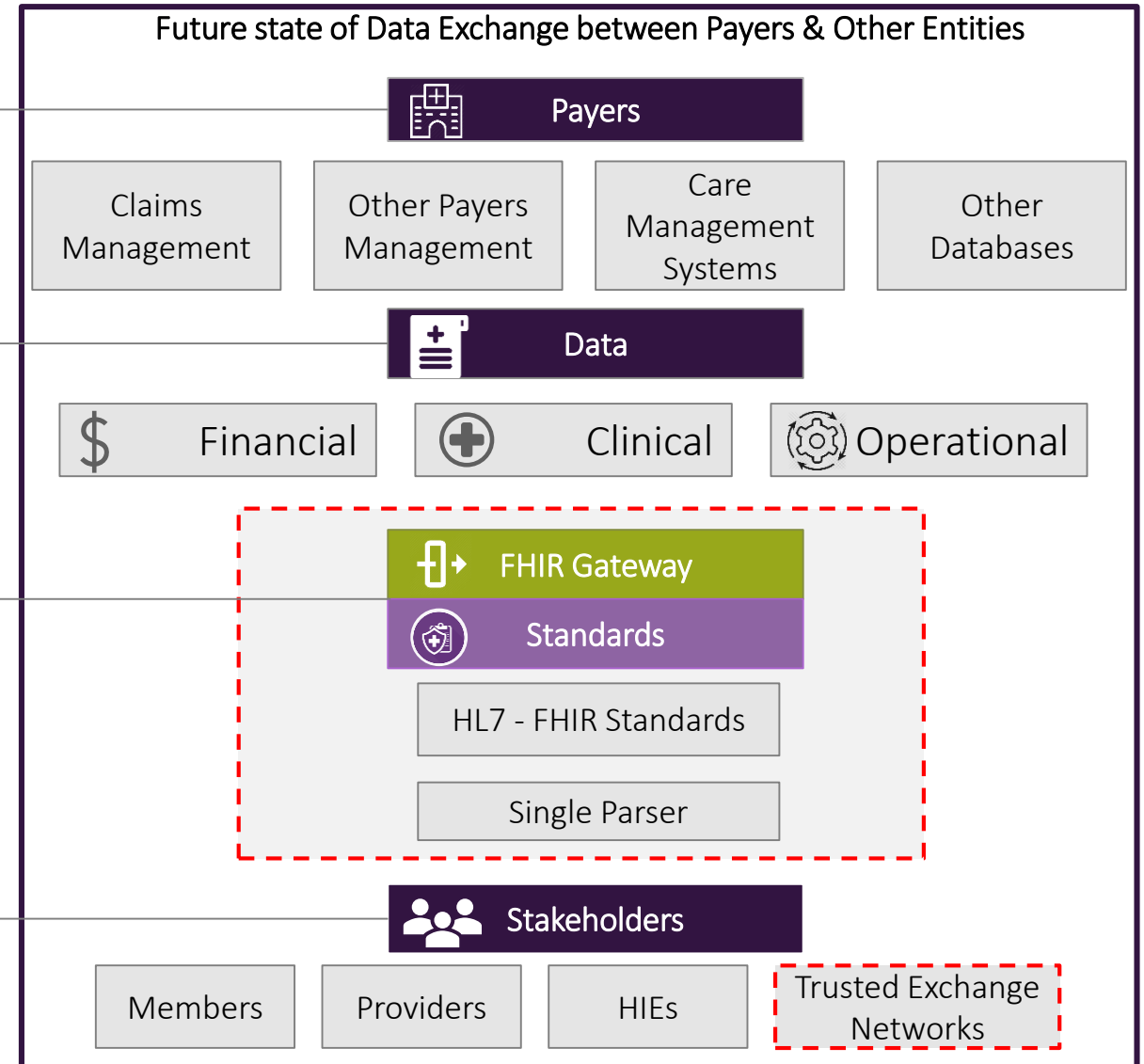
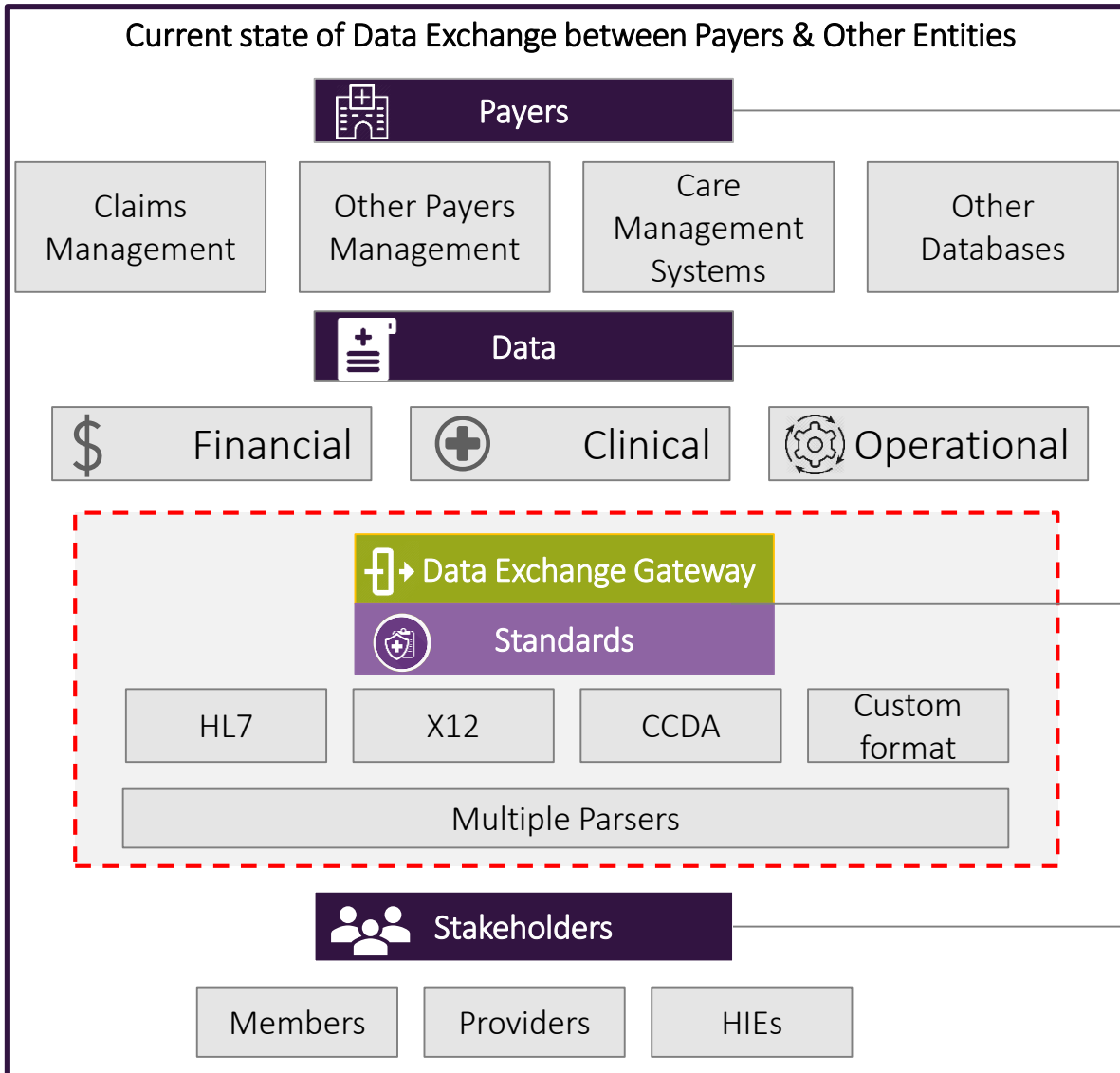
Enable technical standards and data aggregations

Choose simple and reusable solution

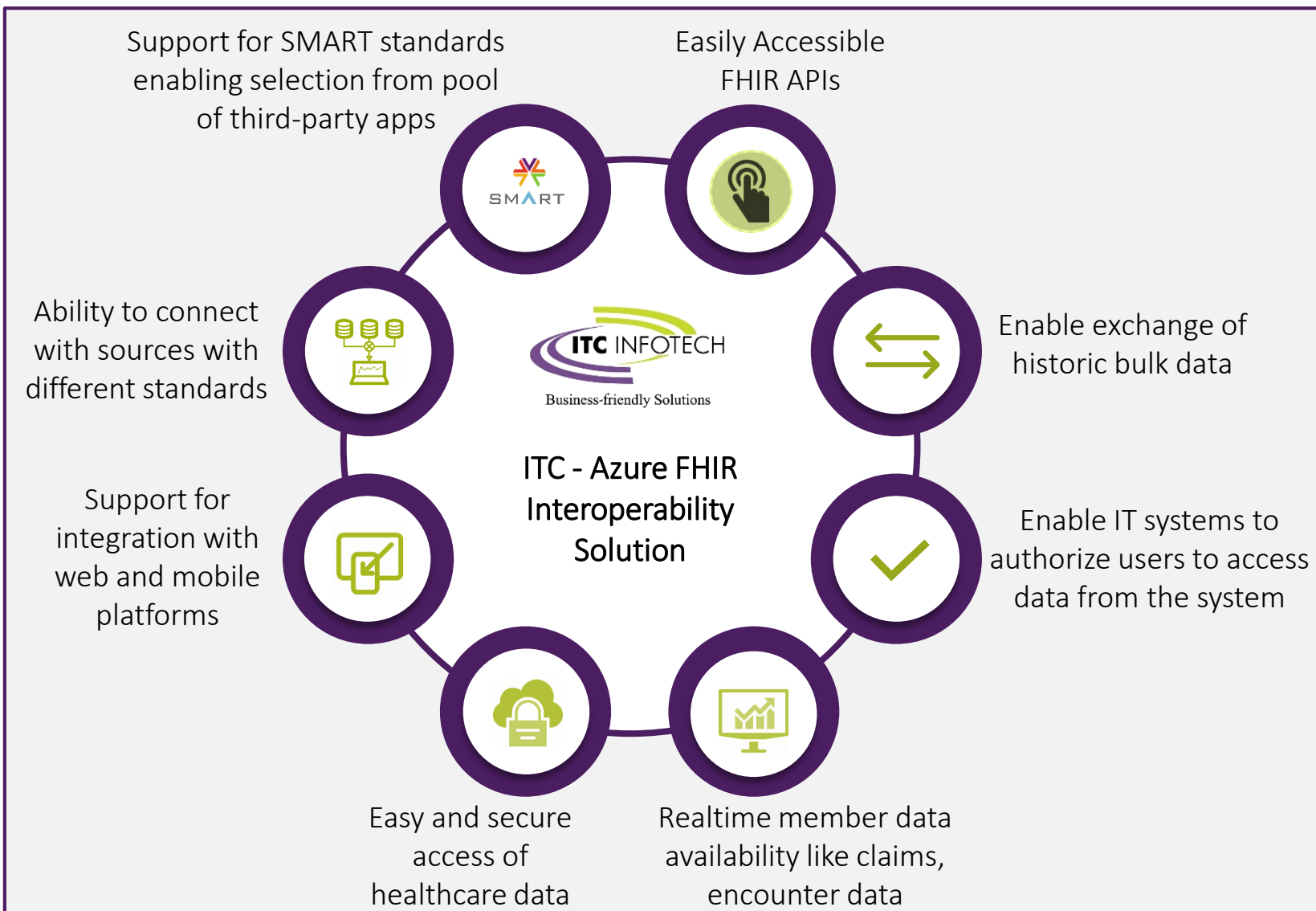
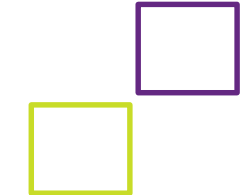
Participate in trusted exchange networks

Enable easy member health data access

# Our Understanding - Interoperability Requirements for Payers (2/2)



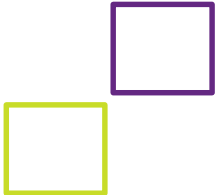
# Solution Considerations Addressing Key Challenges



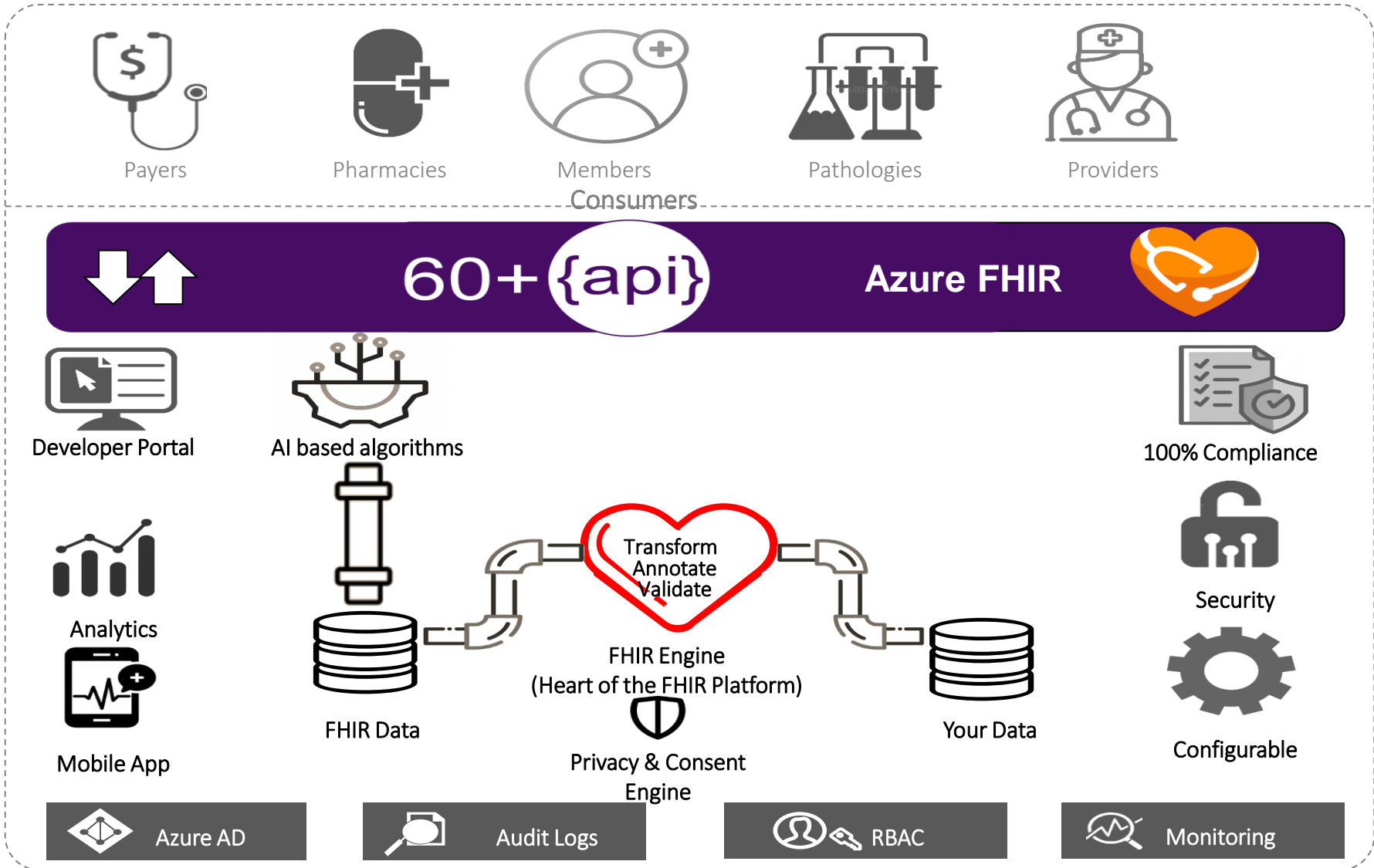
## Key challenges being addressed

- Multiple electronic transaction standards
- High administration overheads in standardizing data formats using parsers
- Multiple data exchange of same data set with different external entities
- Incompatible payer systems to aggregate and leverage data
- Need networking across multiple networks
- Lack of care coordination between payers on members switching plans

# ITC Infotech's FHIR Solutions



- Modular
- Plug & Play
- Platform Agnostic
- SMART support
- Highly Secured
- 47 Compliance Certifications



# Tools, Connectors & Accelerators for Faster Implementation

## IoMT FHIR Connector

- Ingest, normalize, and transform data from the Internet of Medical Things into FHIR
- Ingests streaming data in real-time at millions of events per second
- Customized settings allow developers to manage device content, sample data rates, and set the desired capture thresholds

## FHIR Tools for Anonymization

- Redaction of 18 HIPAA defined identifiable attributes (e.g. names, addresses) in accordance with HIPAA Privacy Rule
- Shift dates by random value.
- Configure rules for redaction and date shifting in a configuration file

## FHIR Convertor

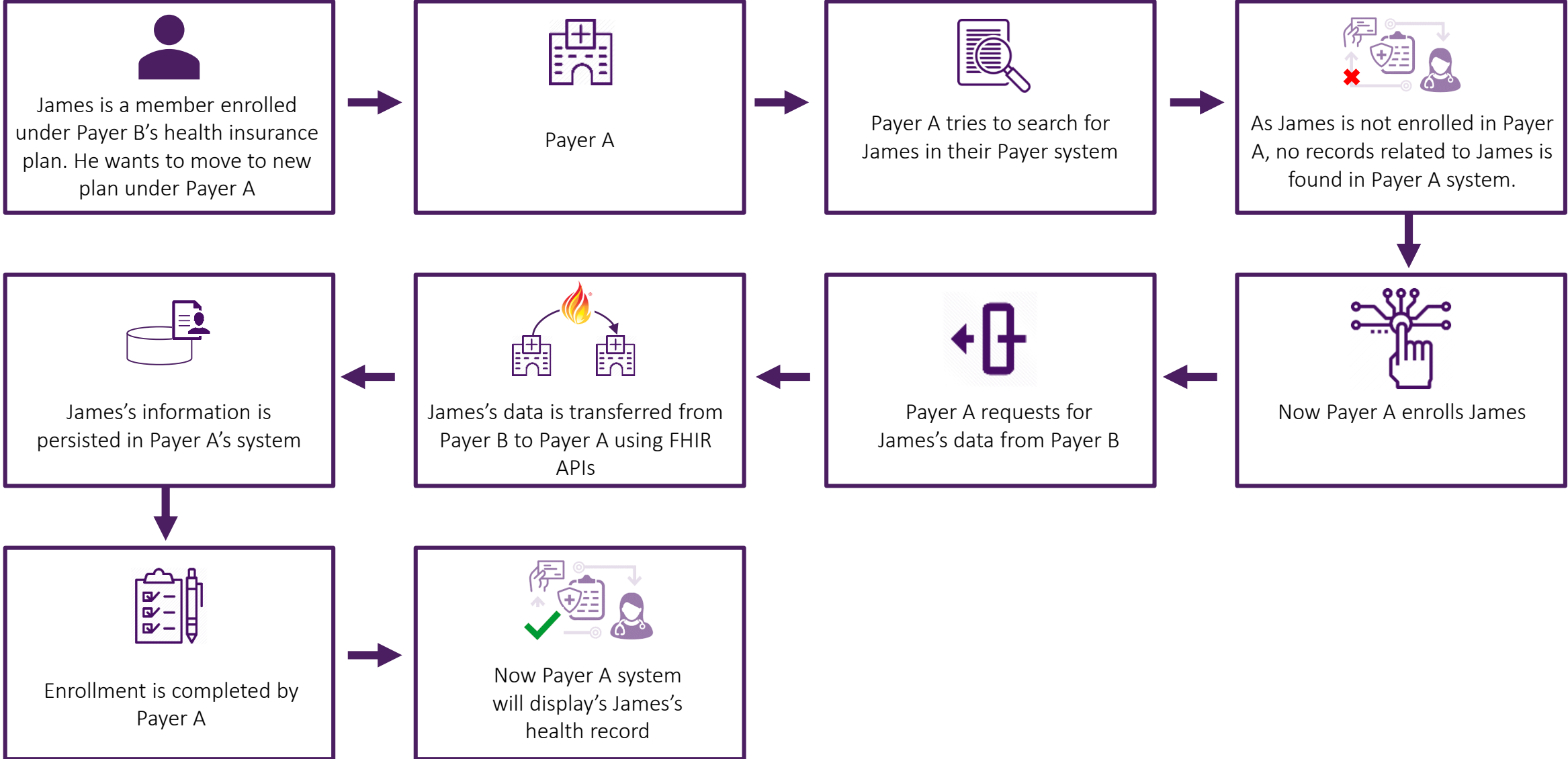
- Transform legacy health data into FHIR
- Ingest HL7v2 messages that are converted to FHIR resources and persisted
- A library of templates for common HL7v2 messages types. Extensible and customizable templates allowing you to define your own HL7v2 to FHIR transformations

## Power BI FHIR Connector

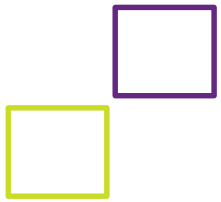
- Represent FHIR data in Power BI by selecting FHIR as a Data Source
- Describe queries in Power BI that are translated into FHIR queries and executed against a FHIR API
- Works with most FHIR servers that implement FHIR DSTU2, STU3 and R4 by interrogating the Capability Statement



# Demo – ITC Interoperability Solution



# ITC Interoperability : All-in-1 Solution for Scale, Security & Success



## Advisory Services

- Discovery & Scoping
- Checkpoint
- Strategy and Planning Services:
  - Data Management & Governance Strategy
  - Implementation Strategy
  - Testing Strategy

- Healthcare expertise with deep knowledge on CCDA, HL7 FHIR standards
- Healthcare CoE with Enterprise Architects and Technology Consultants

## Implementation Services

- Legacy Interoperability Adaptation
- Data Aggregation and Data Policy Implementation
- Data and Analytical Services
- Privacy/Security policy remediation
- Third party data feed remediation
- Security technology remediation
- Portal and Mobile App Development

- End to end Dx (digital experience) services
- 100+ Data Warehouse projects in Health Care Domain

## Configuration Services

- FHIR Services enablement in MS Azure
- MS Azure configuration and integration

- 360-degree partnership with Microsoft
- Mature Cloud CoE

## Testing Services

- Interoperability Implementation Testing
- Interoperability privacy/security Testing

- Strong experience in testing with healthcare clients like SutterHealth, Fairview etc.,
- Test Automation Framework

## Standards

- HL7 2.x
- DICOM
- CCD and CCR
- FHIR
- IHE

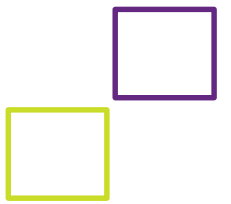
## Tools

- Mirth Connect
- Cloverleaf
- Easy HL7
- Neo HL7
- EasyConnect
- Jaguar Interface Engine

## Integration Systems

- Cerner Millennium
- Facets
- HealthRules
- Optum Insights

# ITC FHIR Interoperability Solution Highlights



Highlights	
<i>Managed PAAS Offering for FHIR</i>	✓
<i>Maintenance and upgrades for FHIR Service</i>	✓
<i>Standards and certifications at service level</i>	✓
<i>Inbuilt Audit logging</i>	✓
<i>Support for R3 and R4 FHIR Standards</i>	✓
<i>Role Based Access Control (RBAC)</i>	✓
<i>Secure Compliance in the Cloud</i>	✓
<i>Global Availability and Protection of data with multi-region failover</i>	✓
<i>SMART on FHIR functionality</i>	✓
<i>Quick turnaround</i>	✓

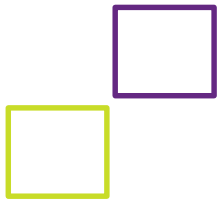
# List of APIs/ Resources (1/2)



Base	<b>Individuals</b>	<b>Entities #1</b>	<b>Entities #2</b>	<b>Workflow</b>	<b>Management</b>
	<ul style="list-style-type: none"> <li>• <u>Patient</u></li> <li>• Practitioner</li> <li>• PractitionerRole</li> <li>• RelatedPerson</li> <li>• Person :</li> <li>• Group :</li> </ul>	<ul style="list-style-type: none"> <li>• Organization</li> <li>• OrganizationAffiliation</li> <li>• HealthcareService</li> <li>• Endpoint</li> <li>• Location</li> </ul>	<ul style="list-style-type: none"> <li>• Substance</li> <li>• BiologicallyDerivedProduct</li> <li>• Device</li> <li>• DeviceMetric</li> </ul>	<ul style="list-style-type: none"> <li>• Task</li> <li>• Appointment</li> <li>• AppointmentResponse</li> <li>• Schedule</li> <li>• Slot</li> <li>• VerificationResult</li> </ul>	<ul style="list-style-type: none"> <li>• Encounter</li> <li>• EpisodeOfCare</li> <li>• Flag :</li> <li>• List :</li> <li>• Library</li> </ul>

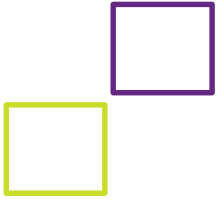
Clinical	<b>Summary</b>	<b>Diagnostics</b>	<b>Medications</b>	<b>Care Provision</b>	<b>Request &amp; Response</b>
	<ul style="list-style-type: none"> <li>• AllergyIntolerance</li> <li>• AdverseEvent</li> <li>• Condition (Problem)</li> <li>• Procedure</li> <li>• FamilyMemberHistory</li> <li>• ClinicalImpression</li> <li>• DetectedIssue</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Media</li> <li>• DiagnosticReport</li> <li>• Specimen</li> <li>• BodyStructure</li> <li>• ImagingStudy</li> <li>• QuestionnaireResponse</li> <li>• MolecularSequence</li> </ul>	<ul style="list-style-type: none"> <li>• MedicationRequest</li> <li>• MedicationAdministration</li> <li>• MedicationDispense</li> <li>• MedicationStatement</li> <li>• Medication</li> <li>• MedicationKnowledge</li> <li>• Immunization</li> <li>• ImmunizationEvaluation</li> <li>• ImmunizationRecommendation</li> </ul>	<ul style="list-style-type: none"> <li>• CarePlan</li> <li>• CareTeam</li> <li>• Goal</li> <li>• ServiceRequest</li> <li>• NutritionOrder</li> <li>• VisionPrescription</li> <li>• RiskAssessment</li> <li>• RequestGroup</li> </ul>	<ul style="list-style-type: none"> <li>• Communication :</li> <li>• CommunicationRequest</li> <li>• DeviceRequest :</li> <li>• DeviceUseStatement</li> <li>• GuidanceResponse</li> <li>• SupplyRequest</li> <li>• SupplyDelivery</li> </ul>

# List of APIs/ Resources (2/2)



Financial	<p><b>Support</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Coverage</a></li> <li>• <a href="#">CoverageEligibilityRequest</a></li> <li>• <a href="#">CoverageEligibilityResponse</a></li> <li>• <a href="#">EnrollmentRequest</a></li> <li>• <a href="#">EnrollmentResponse</a></li> </ul>	<p><b>Billing</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Claim</a></li> <li>• <a href="#">ClaimResponse</a></li> <li>• <a href="#">Invoice</a></li> </ul>	<p><b>Payment</b></p> <ul style="list-style-type: none"> <li>• <a href="#">PaymentNotice</a></li> <li>• <a href="#">PaymentReconciliation</a></li> </ul>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Account</a></li> <li>• <a href="#">ChargeItem</a></li> <li>• <a href="#">ChargeItemDefinition</a></li> <li>• <a href="#">Contract</a></li> <li>• <a href="#">ExplanationOfBenefit</a></li> <li>• <a href="#">InsurancePlan</a></li> </ul>	
	Specialized	<p><b>Public Health &amp; Research</b></p> <ul style="list-style-type: none"> <li>• <a href="#">ResearchStudy</a></li> <li>• <a href="#">ResearchSubject</a></li> </ul>	<p><b>Definitional Artifacts</b></p> <ul style="list-style-type: none"> <li>• <a href="#">ActivityDefinition</a></li> <li>• <a href="#">DeviceDefinition</a></li> <li>• <a href="#">EventDefinition</a></li> <li>• <a href="#">ObservationDefinition</a></li> <li>• <a href="#">PlanDefinition</a></li> <li>• <a href="#">Questionnaire</a></li> <li>• <a href="#">SpecimenDefinition</a></li> </ul>	<p><b>Evidence-Based Medicine</b></p> <ul style="list-style-type: none"> <li>• <a href="#">ResearchDefinition</a></li> <li>• <a href="#">ResearchElementDefinition</a></li> <li>• <a href="#">Evidence</a></li> <li>• <a href="#">EvidenceVariable</a></li> <li>• <a href="#">EffectEvidenceSynthesis</a></li> <li>• <a href="#">RiskEvidenceSynthesis</a></li> </ul>	<p><b>Quality Reporting &amp; Testing</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Measure</a></li> <li>• <a href="#">MeasureReport</a></li> <li>• <a href="#">TestScript</a></li> <li>• <a href="#">TestReport</a></li> </ul>

# Why ITC Infotech for ITC Azure-FHIR based Interoperability Solution?



- ITC Infotech's top Executive leadership commitment for Relationship Success & ensure fulfillment of Customer's program goals
- **Service Delivery Excellence** through strong program governance, ensuring value co-creation and value delivery for Customers



## Strong Partnership with Microsoft

- 360-degree Partnership with Microsoft & Direct Access to Microsoft Consulting for MS Azure FHIR Services
- Experience of delivery services to leading clients along with Microsoft Consulting



## Strong Healthcare domain expertise

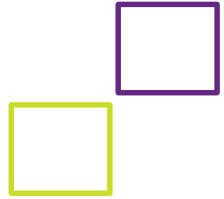
- ITC Infotech brings Healthcare domain knowledge and deep understanding of CCDA, HL7, FHIR, IHE standards
- Exposure of working with Healthcare clients like Sutter Health, Fairview Health, Boston Medical (BMCHP), Samaritan Health Services

# About Us



# About Us

ITC Infotech is a fully owned subsidiary of ITC Ltd, one of India's most admired companies.



## ITC Ltd – Our Parent Company - A diversified business conglomerate



ITC is rated among the **World's Best Companies**, Asia's 'Fab 50' and the **World's most reputable Companies** by Forbes magazine and **India's most admired Company** (Fortune Hay-Group 2014)



**35 Billion USD**  
Market Capitalization

**10.8 Billion USD**  
Annual Revenue



**32,000 Employees**  
Supports livelihoods of ~6 million people



Sustainability driven  
By **Triple Bottom Line**

**Global exemplar in Sustainability**

- Carbon positive 13 years in a row
- Water positive 16 years in a row
- Solid waste recycling positive 11 years in a row

**Nearly 47% of total energy consumed is from Renewable sources**

For more information, visit: [www.itcportal.com](http://www.itcportal.com)

## ITC Infotech



ITC Infotech is a **Flexible, Trusted & Digital Partner**.  
**Specialized Global Full-Service technology solutions provider**

**288+** Million  
USD Revenue

**60+**  
Fortune listed clients

Client engagements  
in **35** countries

Top **10** Clients  
With us for over 5 years

Industry **Practitioners Approach**

**CMMi Level 5**  
**ISO/IEC 20000-1:2011**  
**ISO 9001:2015**  
**ISO 27001**

For more information, visit: [www.itcinfotech.com](http://www.itcinfotech.com)

**Stephanie Moore of Forrester Research has this to say about ITC Infotech,**

“ITC Infotech is an excellent alternative for companies that are looking for the flexibility and attention of a small vendor – almost like an extension of their internal IT organizations.... Because of its size, agility, and deep pockets, ITC Infotech is more willing to enter into creative relationships.....than other vendors may be

### Our Customers

#### BFS & Healthcare



#### Manufacturing & CPG

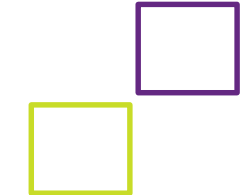


#### Travel & Hospitality





# Our footprint Across the Healthcare Industry



**P  
R  
O  
V  
I  
D  
E  
R  
S**

- Population Health Management
- Connected Health
- Health Intelligence and Analytics
- Patient and Provider Engagement
- Wellness Management
- Value Based Outcomes
- Quality Management
- Long term care and Home care
- Health Information Systems

**P  
A  
Y  
E  
R  
S**

- Claims Management
- Member/Consumer Engagement
- Case and Care Management
- Provider Network Management
- Benefit design
- Enrollment Management
- Regulatory and Compliance Reporting
- Risk and Contract Management
- Member, Provider, Employer and Broker Portal

<b>Service Areas</b>	Consulting	AMS	Product Engineering	Infra	Digital	Testing	Data & Analytics	API management	Mobility	Cloud	CRM
<b>Line of Business</b>	Hospitals	ACOs	Commercial Health Insurance	Medicare	Medicaid	MAO	CHIP	Pharmacy	Dental		
<b>Innovation</b>	Cognitive Automation	IoT	Virtual Reality	Augmented Reality	Artificial Intelligence	RPA	DevOps	Blockchain			
<b>Regulatory and Standards</b>	CMS	HIPAA	MIPS	HEDIS	FHIR	HIPAA EDI 5010	CPT	ICD9/10	SNOMED		



Join the conversation



Business-friendly Solutions

# Thank you

Email: [contact.us@itcinfotech.com](mailto:contact.us@itcinfotech.com)

Web: [www.itcinfotech.com](http://www.itcinfotech.com)

Contact Person:

Manish Jaiswal

VP & Head of HealthCare

Mobile +1 201.248.5767

[Manish.Jaiswal@ITCinfotech.com](mailto:Manish.Jaiswal@ITCinfotech.com)

ITC Infotech  
Americas Head Quarters  
12 North State, Route 17,  
Suite 303, Paramus,  
New Jersey, NJ – 07652  
USA

Corporate HQ & Development Center  
ITC Infotech India Limited  
No.18, Banaswadi Main Road,  
Bangalore – 560005

Other Offices

Austria

Czech Republic

Switzerland

Germany

France

South Africa

Singapore

Denmark

Sweden

Finland

Netherlands

UAE

United States

©2020 ITC Infotech. All Rights Reserved.

All trademarks are the registered property of the respective companies and are acknowledged.