AI-DRIVEN AUTOMATION IN HEALTHCARE

Healthcare as an industry continues to have one of the highest potential for adopting newer technologies like Artificial Intelligence (AI) and extracting maximum benefit to drive down operational efficiencies, enhance quality of care and reduce cost of care. At the most elementary level, with AI-based virtual assistants and automation excellence, work burden can eventually reduce.

Cognitive technology can facilitate enhanced clinical decision-making for increased patient safety. AI also allows for a wider application spectrum for Health Plans, Patients, Physicians, and Pharmacy Benefit Managers (PBMs). It could be the panacea to reduce the overall healthcare cost and increase operational efficiencies while reducing medical errors, fraud, waste or abuse.

AI Journey: Transformation of Operations towards Software + People Model

In our work with many of our clients, we have observed that the AI journey for healthcare companies should not be a "big bang" approach but a gradual one. Health Plans should access and prioritize business function(s) and use case(s) that could be the best candidates to begin the AI transformation. Payers should ideally look for "low hanging use cases" that are mostly internal (for instance, in the enrollment intake process, claim pends, enrollment reconciliation, provider tickets and member tickets) to implement AI.

Once benefits are realized, payers can integrate AI in other critical functions and create a roadmap for AI technology infrastructure organization-wide. A successful AI journey begins with an understanding of AI and the specific opportunities it brings, and requires health plans to meticulously act on multiple levers (as shown in Figure 1), to achieve desired results.
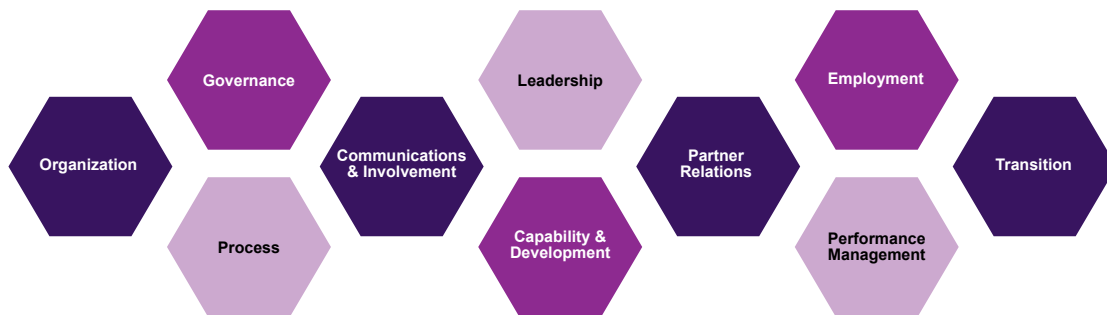

Figure 1: Key Organization Levers in the AI Journey

AI transformation also needs a step-wise approach from Operational to Predictive and Cognitive processes, to generate knowledge-driven insights as the organization attains a certain level of maturity in terms of its understanding of AI processes and benefits, and is also able to handle the human aspects of organizational change (as shown in Figure 2).
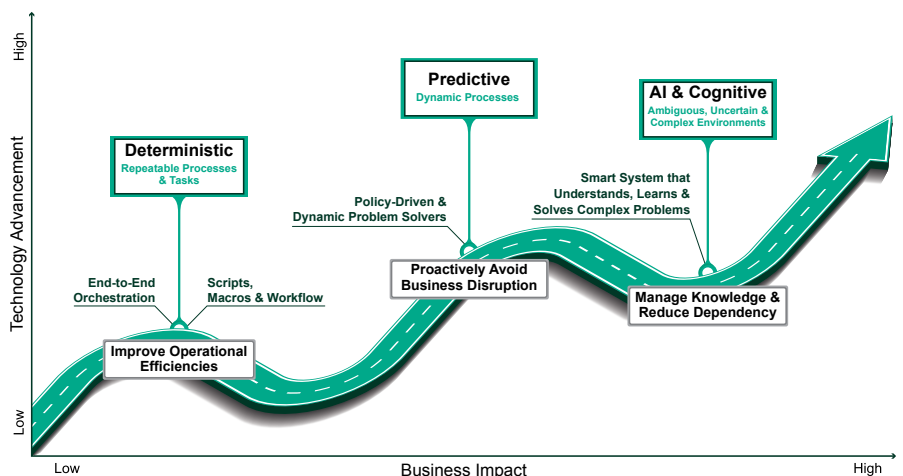

Figure 2: AI Solution Maturity

Scope of AI Opportunities in Payer Value Chain

We see that many of the Health Plans are compelled to embrace AI to address pressing industry imperatives. However, organizations have to look at the business value, technology maturity and automation potential of AI across the value chain to select the right business function (and use case) as a candidate for AI implementation (as shown in Figure 3).

Product Design	Sales & Quoting	Enrollment & Member Management	Billing	Provider Management	Claims	Medical Management	Customer Service	Analytics
Risk Assessment	Precision Marketing	Account Set Up	Premium Billing	Provider Credentialing	Claims Adjudication & Processing	Care Plan Creation	Automate Customer Assistance (Voice Recognition + NLP)	Predictive Analytics to Improve Clinical Decision Making
Underwriting Logic	Broker Management	Eligibility Check	Prior Authorization	Provider Data Management	Claims Payments	Population Health Management	Insights-Driven Customer Grievances Management	State Reporting
Market Trend Analysis	New Business Quotes	Benefit Management	Premium Subsidy Processing	Contract Negotiations & Drafting	Complaints & Appeals	Creation of Treatment Plans	Correspondence Management	Federal Reporting
AV Calculation	Renewal Quotes	Member Segmentation & Retention	820 Processing	Provider Network Management	Referral Generation	Disease Management	IVR	
Product Rating	Channel Management	Renewals		Provider Outreach	Underwriting	Member Risk Assessment		
	Market Analysis				Fraud & Abuse	Analyze Clinical & Financial Data		
					Overpayment Recovery Services			

AI Applicability Index: High | Medium | Low

Figure 3: AI Applicability across the Health Plan Value Chain

Infosys Knowledge Platform

The **Infosys Knowledge–based AI Platform** (depicted in Figure 4) brings together machine learning and organizational deep knowledge to drive automation and innovation. It collates people's knowledge and experience across systems and functions to enable businesses to use this information without human intervention.

The AI Knowledge Platform Delivers:

- Intelligent business process monitoring
- Smart automation
- Prediction and prescription
- Knowledge curation and inferences

The platform helps capture, formalize, process and represent knowledge in a powerful ontology-based structure that allows knowledge reuse as underlying systems change.
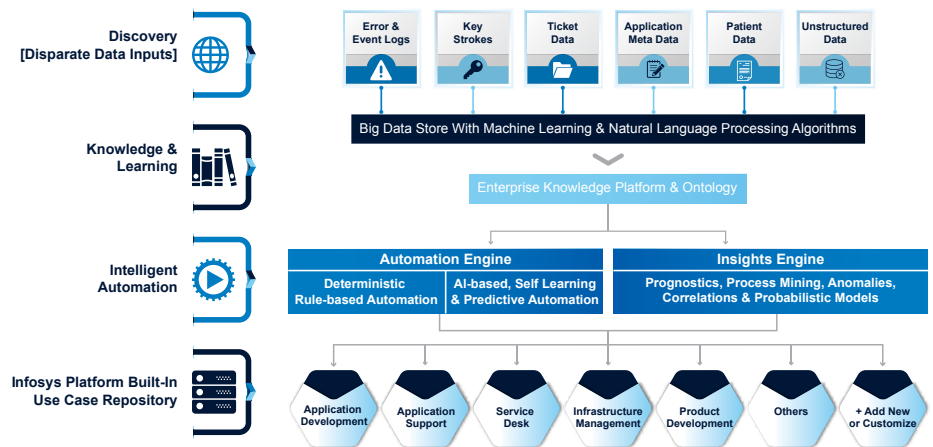

Discovery [Disparate Data Inputs]
Knowledge & Learning
Intelligent Automation
Infosys Platform Built-In Use Case Repository

Error & Event Logs | Key Strokes | Ticket Data | Application Meta Data | Patient Data | Unstructured Data

Big Data Store With Machine Learning & Natural Language Processing Algorithms

Enterprise Knowledge Platform & Ontology

Automation Engine — Deterministic Rule-based Automation | AI-based, Self Learning & Predictive Automation

Insights Engine — Prognostics, Process Mining, Anomalies, Correlations & Probabilistic Models

Application Development | Application Support | Service Desk | Infrastructure Management | Product Development | Others | + Add New or Customize

Figure 4: Infosys Knowledge-Based Enterprise AI Framework

Business Benefits of Automation

We are already seeing quantifiable benefits across a number of AI use cases that we are working on with clients. Some of the key benefits of automation and AI are:

- A competitive edge
- Lowered overall cost of operation
- Increased advisory excellence
- Increased productivity
- Enhanced operations efficiency
- Improved customer experience
- Increased process quality and consistency

Automation and AI are slowly being seen as must-haves across domains and client organizations. The world and a lot of our clients have begun to understand the benefits of AI and are moving from a mobile-led transformation in the last decade to an AI-led transformation in the coming decade.

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Navigate your next

For more information, contact askus@infosys.com

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