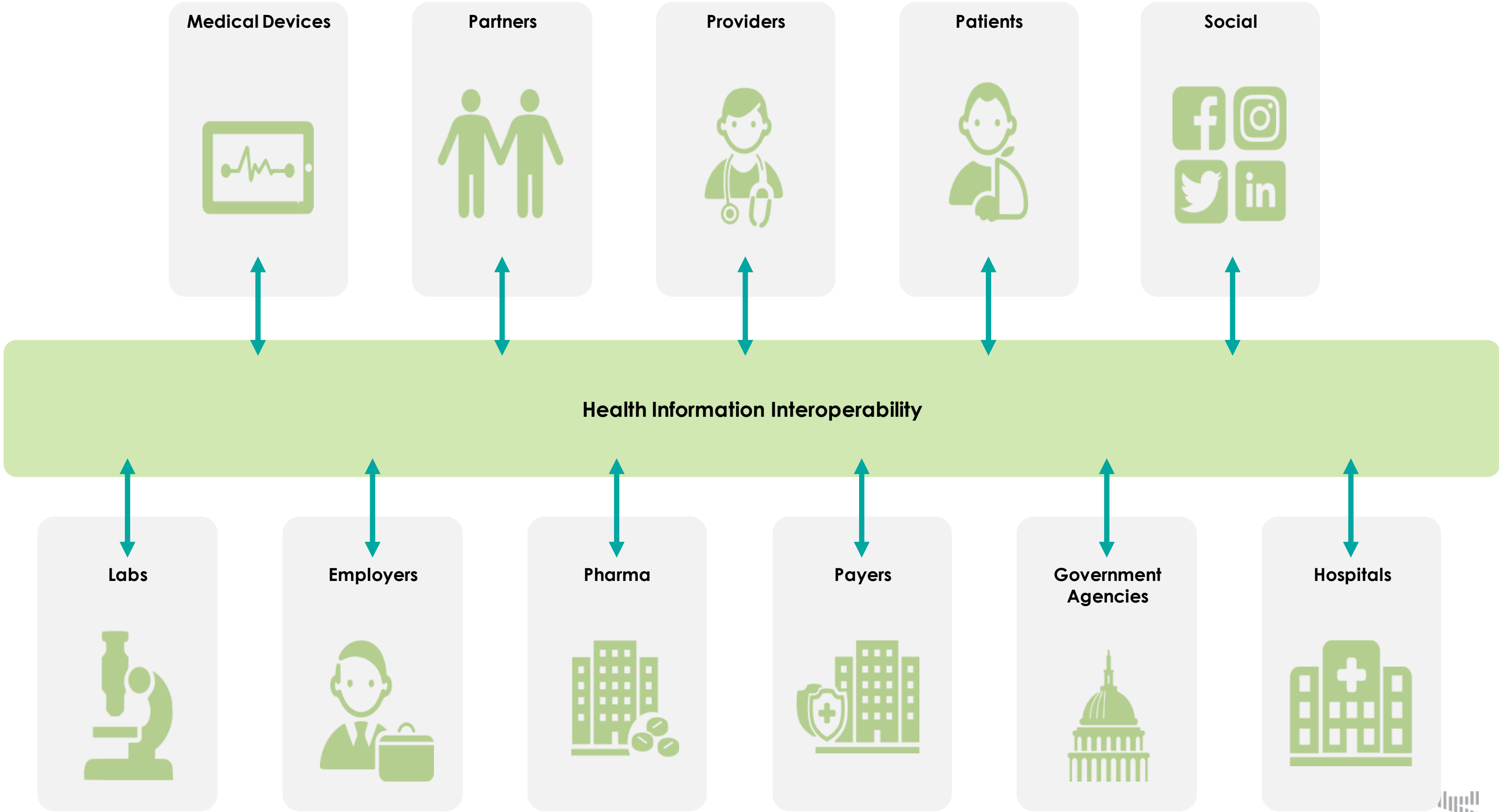# Healthcare transformation: IBM's Experiences

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Manager of IBM Consulting, Greece & Cyprus

Healthcare is rapidly evolving …

Many information systems, devices, and applications need to **access, exchange, integrate and cooperatively use data** in a coordinated manner **across organizational boundaries**. This ability is predicated on and enabled by *re-usable* **industry adopted standards."**
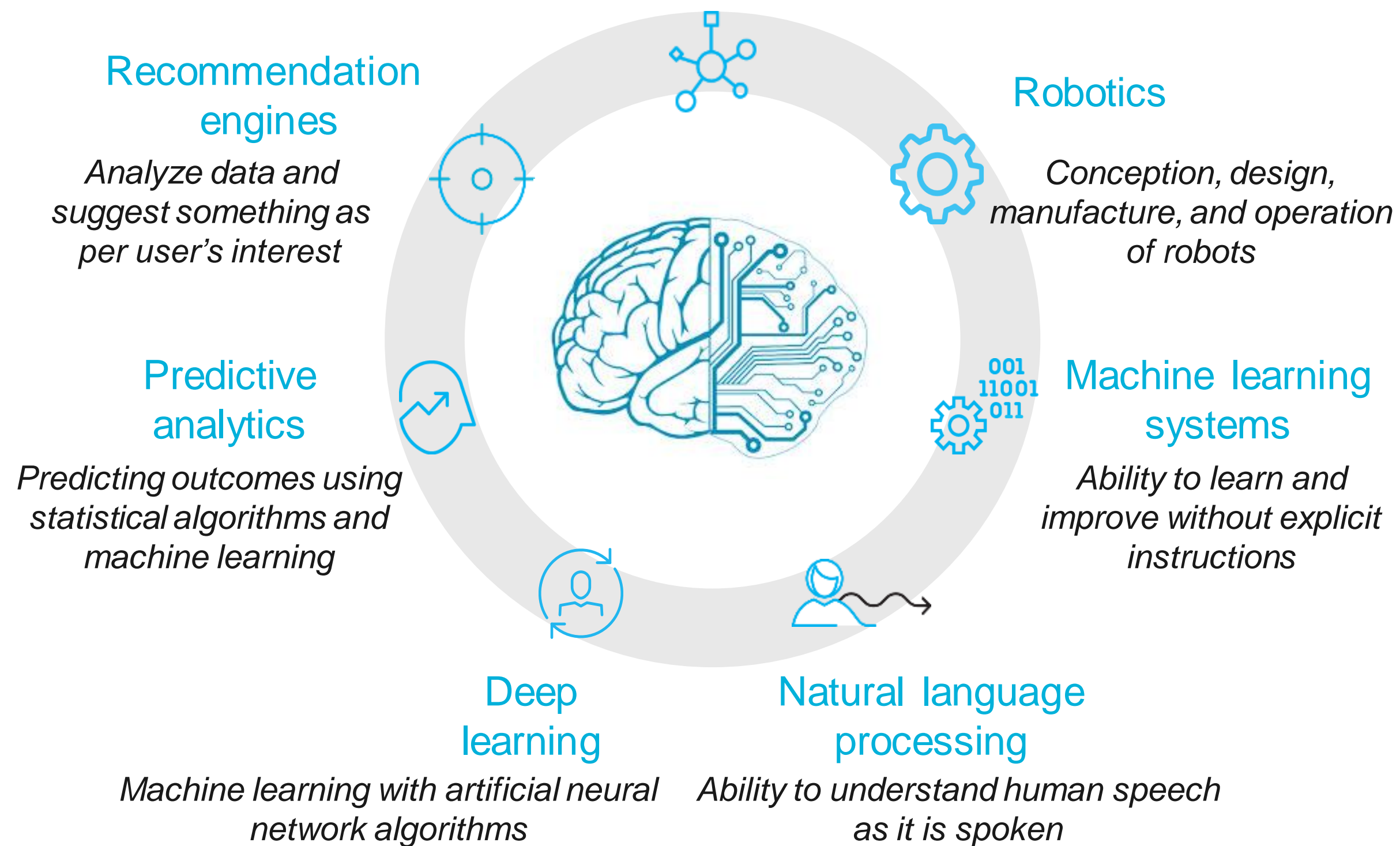

Medical Devices | Partners | Providers | Patients | Social

Health Information Interoperability

Labs | Employers | Pharma | Payers | Government Agencies | Hospitals

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Digital technologies have become a source for creating new value…

Cognitive Technologies

Artificial intelligence
Simulation of human intelligence processes

Recommendation engines
Analyze data and suggest something as per user's interest

Robotics
Conception, design, manufacture, and operation of robots

Predictive analytics
Predicting outcomes using statistical algorithms and machine learning

Machine learning systems
Ability to learn and improve without explicit instructions

Deep learning
Machine learning with artificial neural network algorithms

Natural language processing
Ability to understand human speech as it is spoken

Business Value

Create new ways of interacting with customers

Reveal more powerful on-demand business insights through real-time access to data

Enable business model – *and ecosystem* – transformation

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However, existing barriers are creating silos across the healthcare ecosystem

Barriers
- Difficulty managing coordinative collective action
- Lack of universal adoption of standard based EHRs
- Inconsistent Implementation
- Lack of infrastructure for secure transmission
- Variability in choice of standards

Drivers
- Empowers member access to and control over their data and usage
- Strengthens provider integration and alignment
- Improves savings for members, providers and payers
- Supports coordinated care experiences

Principles
- Open data and transmission standards
- Open standards to enable innovation
- Zero Trust Security

4

Accelerating the process of filtering patients' records help to deliver accurate insights for physicians

Case Studies

A healthcare company in Poland is improving patient health with data driven risk analysis and recommendations[1]

A healthcare solution analyzes patient risk factors and current research to create personalized long-term health plan recommendations.

The solution uses years of patient records, medical journals, and more, generating a personalized risk analysis and plan

It provides informal feedback through online chat, or full recommendations

Alerts patients about their personalized risk factors

Expands patient options with an online evaluation tool

Moves the company toward becoming a **proactive** health partner rather

A medical technology startup in Ecuador uses cognitive to achieve big outcomes in the diagnosis of rare diseases[2]

Cloud Therapy

"We're combining big data analytics with artificial intelligence to process health data—years of R&D that pharmaceutical companies have accumulated."

—Andre Sandoval, Chief Executive Officer, Cloud Therapy

Uses NLP to extract value from previously dark data, including several years' worth of clinical studies

The solution uses probabilistic reasoning to find and rank the best to improve its accuracy rates

50% potentially faster diagnosis

Improves potential patient outcomes by enabling treatment to start sooner

Frees doctors from hours of research

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Cognitive support on mobile devices is helping to improve diagnosis and treatment by taking real time decisions

Digitize and streamline processes

Case Studies

A information service provider uses cognitive to search comprehensive medical data and inform answers to complex diagnostic questions

The solution uses natural language processing to decipher what physicians are seeking and to offer best potential answers

Interactive technology to facilitate content searching, note taking and deliver information related to diagnosis, treatment and symptom management

| Rapid curated responses to clinical queries with **79%** accuracy	Supports more **personalized** treatment plans	Improves ability to treat and manage rheumatoid arthritis by **75%**

Sources : See notes below

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The ability to learn from a patient's data provides opportunities to reinvent client engagements

Re-invent client engagement
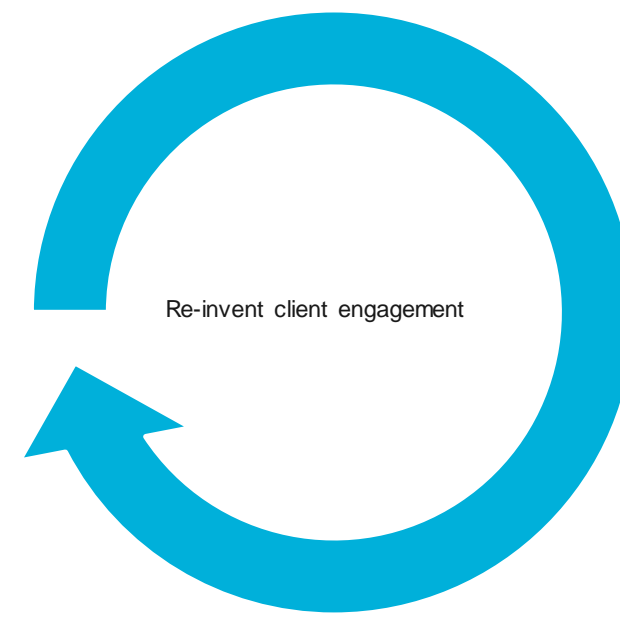
Case Studies

A healthcare provider in Israel improves quality of care by more in its obstetrics department using NLP[1]

A children's hospital to become UK's first 'Cognitive Hospital'[2]

Cognitive computing is changing the way doctors evaluate patient cases and make decisions, improving quality of care.

Uses NLP to draw correlation within a corpus of medical best practices and historical patient records

The company is enhancing the expertise of physicians with cognitive computing technology

Given the rapid changes in healthcare, cognitive computing will play a key role in keeping patients healthy.

Watson technology will be applied to improve patient experience in the United Kingdom

To provide cognitive analytics that deliver insights enabling the hospital to think, sense and feel what is happening with a patient

60% quality improvement with personalized plans	**Boosts** performance and consistency of physicians	**Improves** decision making with adherence to insurance guidelines

Greatly enhance patient's experience	Identify **patient anxieties** and providing information and reassurance	**Remind** young patients and their parents about appointments

Sources : See notes below

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Thank You