Microsoft and Healthcare transformation: vis role and examples

Niall McDonagh
Director Western Europe Health Sector

Bert Hoorne
Cloud Solution Architect Health Sector

Microsoft

Healthcare IT News

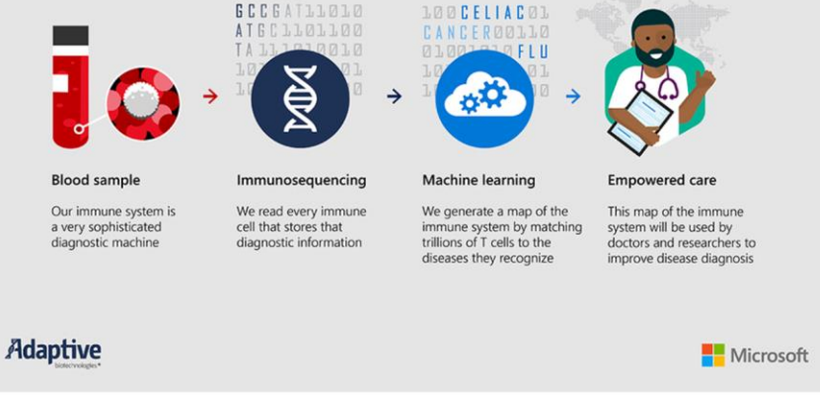
Microsoft, Google invest in precision medicine startup DNAnexus

Company will use the $58 million round of financing to advance its cloud-based platform for genomics and biomedical datasets.

By Bernie Monegain | January 02, 2018 | 12:25 PM

Microsoft and Adaptive Biotechnologies announce partnership using AI to decode immune system; diagnose, treat disease

Jan 4, 2018 | Peter Lee - Corporate Vice President, Microsoft AI + Research

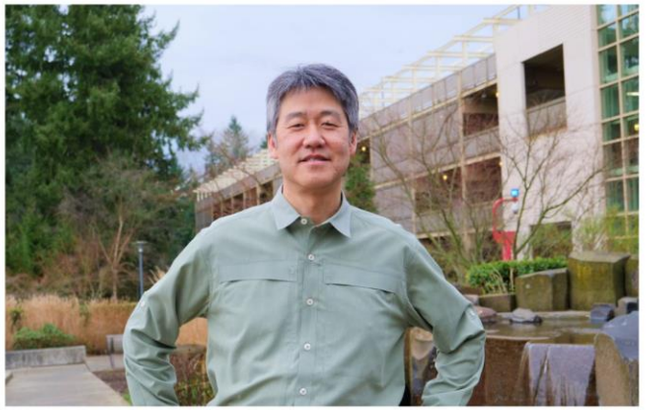


GeekWire NEWS JOBS EVENTS RESOURCES ABOUT Search

Microsoft and UPMC unveil virtual AI assistant that listens in and takes notes on doctor's visits

BY CLARE MCGRANE on February 28, 2018 at 6:00 am

3 Comments | Share 141 | Tweet | Share | Reddit | Email



Peter Lee, a corporate vice president at Microsoft Research and head of its Healthcare NExT initiative.

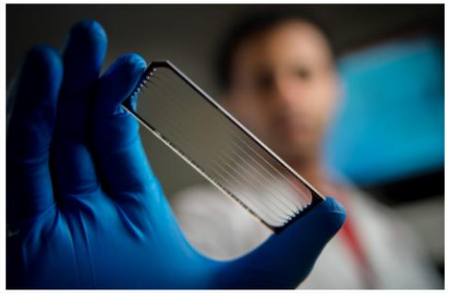
siliconANGLE RESEARCH PEOPLE CUBE COVERAGE

HOME » NEWS

In healthcare push, Microsoft launches genomics service on Azure cloud

BY MARIA DEUTSCHER

UPDATED 12:51 EST . 28 FEBRUARY 2018



Microsoft Corp. hopes to establish a stronger presence in the healthcare sector with a new genomic analysis platform that will provide scientists with an environment for carrying out large-scale medical research.

The service, which is launching under the name Microsoft Genomics, is one of several healthcare offerings that the company introduced today for its Azure cloud platform.

It provides a hosted implementation of two open-source tools used in DNA sequencing projects. The first is called the Burrows-Wheeler Aligner, while the other goes by GATK and is based on MapReduce, the same technology that gave rise to the popular Hadoop big-data analytics platform.

CUBE EVENT COVERAGE

Check out more cube videos and stories

VOICE OF THE COMMUNITY

WinBuzzer WINDOWS 10 WINDOWS 10 MOBILE AZURE XBOX HOLOLENS ABOUT WINBUZZER

WinBuzzer News

Microsoft's Elevation AI Drives Improvements in CRISPR Gene Editing Research

In collaboration with MIT, UCLS, MGH, and Harvard, Microsoft created the Elevation AI to avoid errors in CRISPR DNA editing, a technology which could help to cure disease.

By Luke Jones - January 11, 2018 4:14 pm CEST

Share on Facebook | Tweet on Twitter | Search

TIPS AND TRICKS

How to Improve Windows Performance by Changing Process Affinity

How to Fix Windows Update Errors

Load more

HEALTHCAREDIVE Home Events Library Jobs Viewpoints

Health IT Payer Health Law Finance Hospital Admin Policy

BRIEF

Microsoft, Alphabet, Apple bet big on health with 300+ patents since 2013

Project EmpowerMD

Medical conversations to medical intelligence

Microsoft

Evolution of Health Solutions

Steps to an Electronic Medical Record

US EMR Adoption Model[SM]

Stage	Cumulative Capabilities	2011 Final	2012 Q1
Stage 7	Complete EMR; CCD transactions to share data; Data warehousing; Data continuity with ED, ambulatory, OP	**1.2%**	**1.2%**
Stage 6	Physician documentation (structured templates), full CDSS (variance & compliance), full R-PACS	**5.2%**	**6.2%**
Stage 5	Closed loop medication administration	**8.4%**	**9.4%**
Stage 4	CPOE, Clinical Decision Support (clinical protocols)	**13.2%**	**13.2%**
Stage 3	Nursing/clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology	**44.9%**	**43.9%**
Stage 2	CDR, Controlled Medical Vocabulary, CDS, may have Document Imaging; HIE capable	**12.4%**	**12.1%**
Stage 1	Ancillaries - Lab, Rad, Pharmacy - All Installed	**5.7%**	**5.5%**
Stage 0	All Three Ancillaries Not Installed	**9.0%**	**8.4%**
Data from HIMSS Analytics™ Database © 2012		N = 5,337	N = 5,318

But which capabilities will impact Cost, Access, Quality?

	Cumulative	2011 Final	
e 7	Complete EMR; Data continuity	1.2%	1
e 6	Physician documentation (structured templates), full CDSS (variance & compliance), full R-PACS	5.2%	6
e 5	Closed loop medication administration	8.4%	9
e 4	CPOE, Clinical Decision Support (clinical protocols)	13.2%	1
Stage 3	Nursing/clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology	44.9%	43.9 %
e 2	CDR, Controlle; Imaging; HIE	12.4%	1
e 1	Ancillaries - L	5.7%	5
e 0	All Three Anci	9.0%	8

Data from HIMSS Analytics™ Database © 2012

N = 5,337 N = 5,318

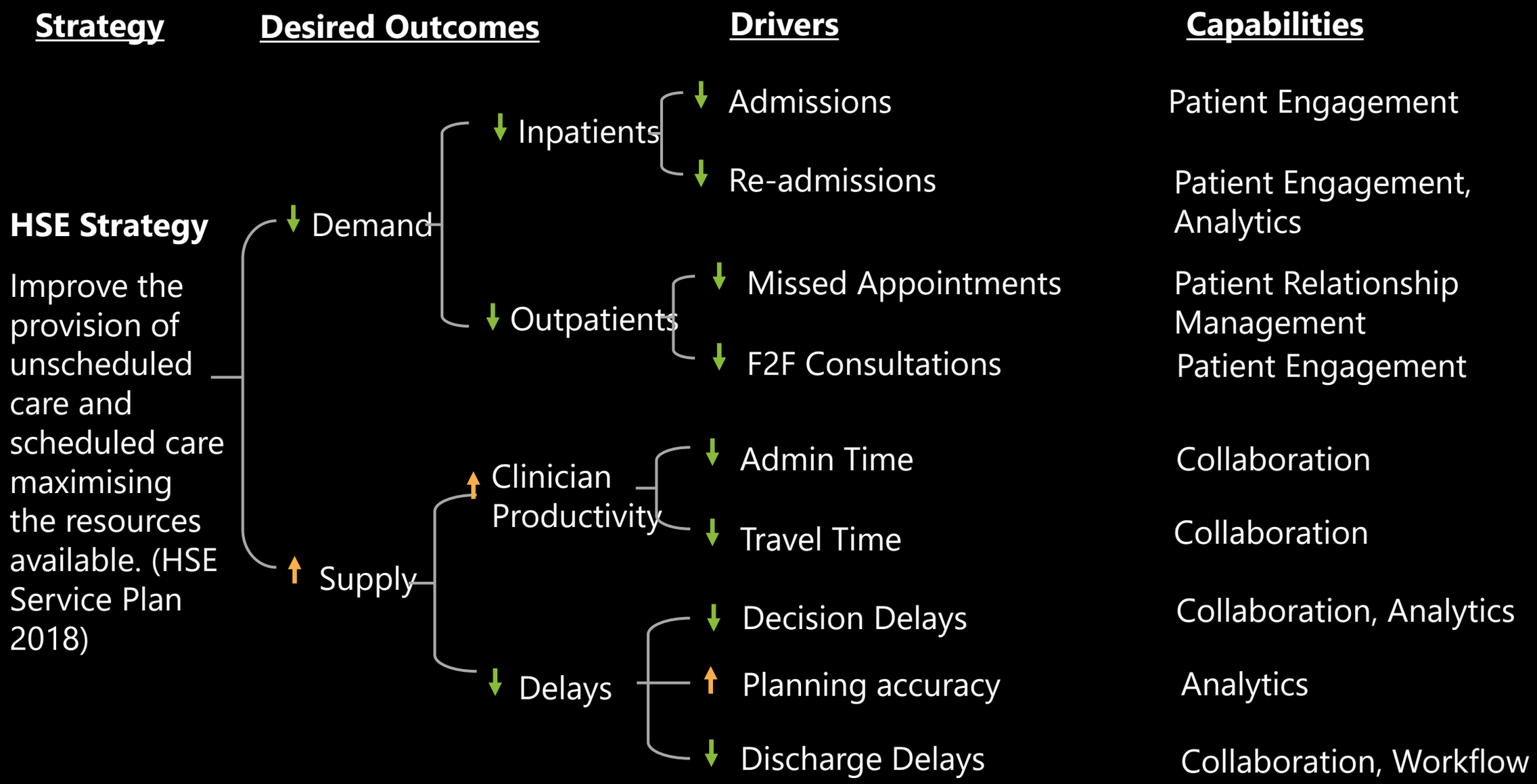
Microsoft perspective on Digital Transformation in Health

What capabilities on the Microsoft Platform are most relevant for Healthcare

Capabilities	What the Technology offers to Healthcare	Building Blocks
Collaboration	Empowers Care teams to communicate and collaborate in real time	Chat based workspace; Mail and Calendar; Voice, Video & Meetings, Single data repository, Content co-creation, Enterprise social
Analytics & AI	Better align supply with demand Reduce readmission Improve patient outcomes	Big Data storage, Data visualisation, Machine Learning, Artificial Intelligence
Workflow & relationship Management	Optimise clinical and non clinical processes Single view of the patient	Patient relationship management; Case management; digitisation of manual processes; Workforce scheduling; Talent Management
Patient Engagement	Diagnose earlier Empower preventative Health Reduce demand for Acute	Patient Portals, Chatbots, Virtual consultation, Triage, Patient portals, Remote monitoring

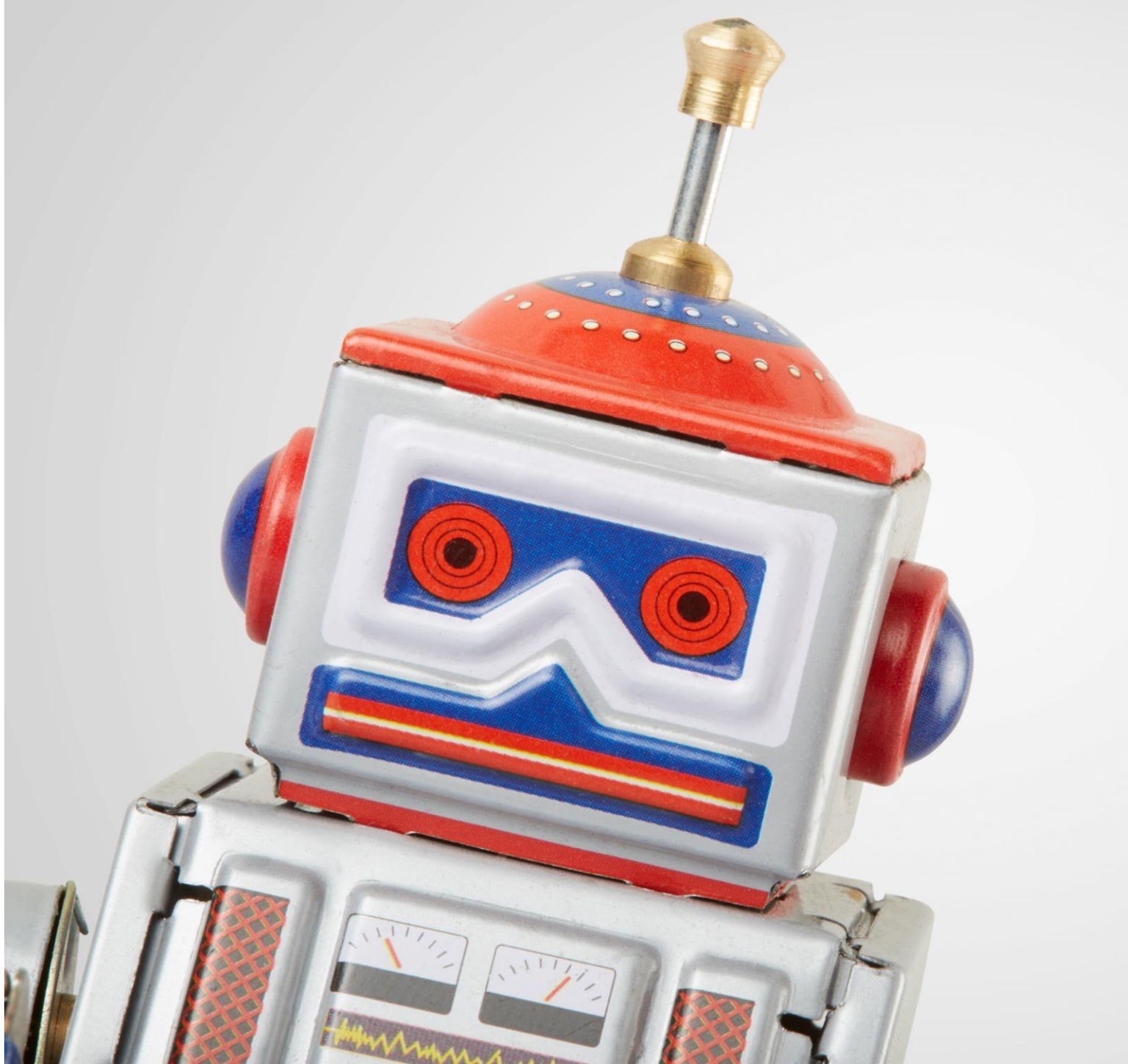
Our Ecosystem of Health sector Partners

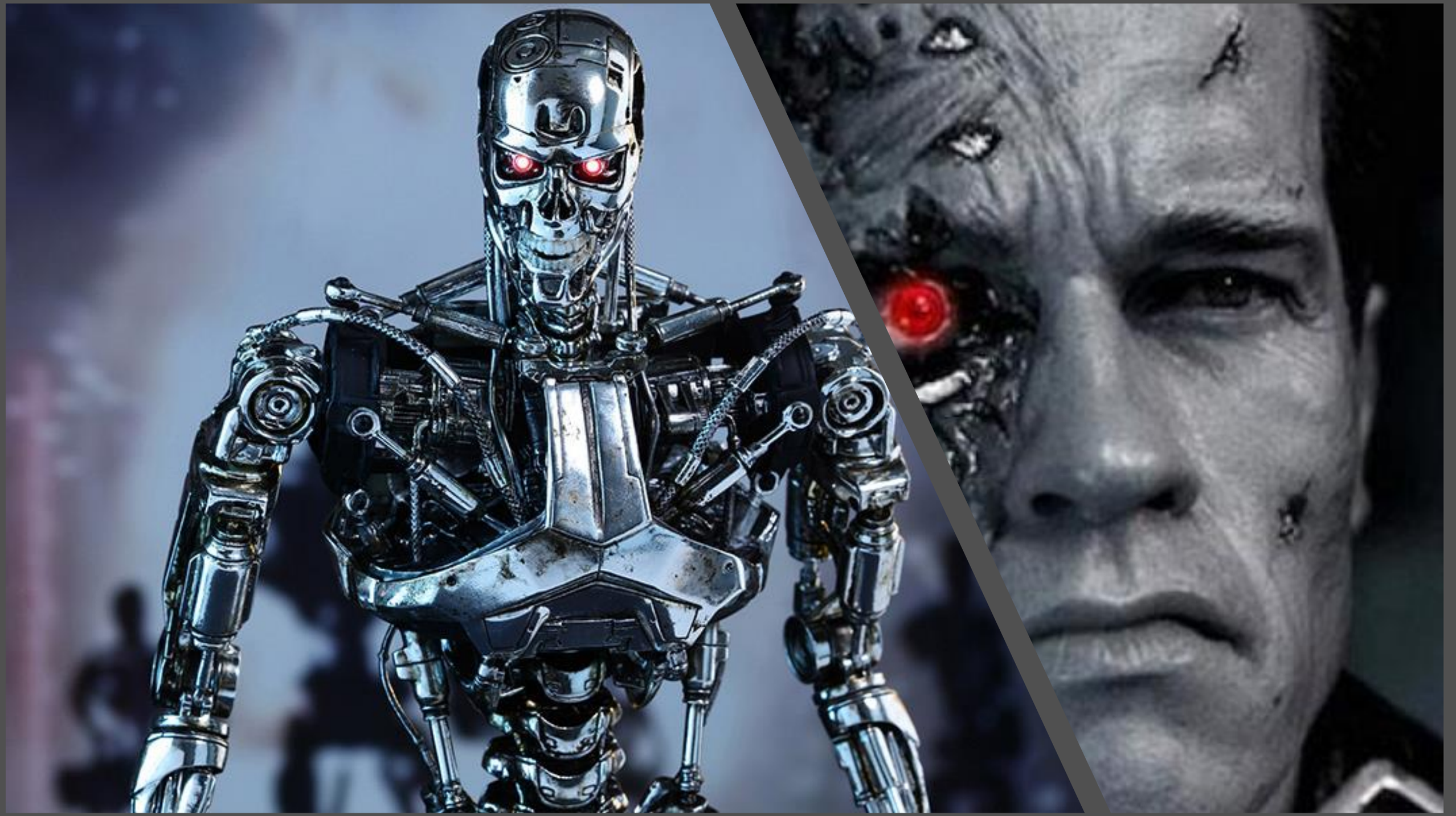
Benefits Framework



Microsoft

What Are Bots?






for (var c = 0, c = 0;c < b.length
return c; } function indexOf_keyword(a, b) {
if (a[d].word == b) {
return c; } function dynamicSort(a) {
return function(c, d) {
b[d] == a && c++;
use_array(a, b) {
for (c = c ? 1 : b.length;;) {
d++, f += c;
$("#go-button").click(function() {
a = Math.min(a, 200),
parseInt($("#limit_val").a());
return 0; } function
.length;d++) {
return c;
-1, a =
-1 : c[a] > d[a] ? 1 : 0) * b;
+= "";
b += "";
var d = 0, f = 0;
<= f) {
f), 0
a.substr(1));
if (0 >= b.length) {
} else {

The current state of chatbots

PURPOSELESS MIMICRY AGENTS

INTENTION BASED AGENTS

CONVERSATIONAL AGENTS

Bot examples

01 Patient screening

With the help of machine learning, guide the patient with its complaint and aide the healthcare provider with pre screening information

“My throat hurts, can I make an appointment?”
“I have a rash and it hurts, what should I do?”

02 Assist caregivers

Provide extended patient information through different channels based on your role

“[Nurse]: Did patient in room “493 already got her medications?”
“[Doctor]: Could you give me the blood results of patient in room 203”

03 GDPR

Be GDPR compliant, provide transparent information and assist in changing incorrect information.

“What information do you have from me?”
“My birthday is not correct registered, can you help me?”

04 Inform caregivers

Ability to sense sentiment and engage in conversation with patients to inform and notify caregivers if needed

“On what time is the doctor arriving.”
“What is it for dinner this afternoon, I am feeling hungry”

DEMO

TRIAGE BOT

Microsoft

DEMO

Magic?!

HELLO HOSPITAL

Microsoft

Next steps

- Contact Niall McDonagh (niallmc@microsoft.com)
  Bert Hoorne (behoorne@microsoft.com)
- Learn more at **microsoft.com/health**
- Digital transformation in health
  www.HealthDigitalTransformation.com
- Visit AppSource for health solutions
- Follow us on Twitter
  @Health_IT (Microsoft in Health)


Microsoft