



**Roche, AI & Communications  
PR Symposium, October 2023**

*Hans Trees*



**Here's what I'll talk about today**

- 1. Roche**
- 2. AI**
- 3. Roche & AI & Comms**

**First of all: A warm welcome!**



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Our purpose

**Doing now  
what patients  
need next**

*We are Roche*

# Doing now what patients need next

Global pioneer in pharmaceuticals & Diagnostics since >125 years

## Roche at a glance (FY 2022)

**63.3** billion CHF sales

**14.2** million patients treated

**29** billion tests conducted

**14.1** billion investment in R&D

**>200** billion CHF market cap

**103'613** employees

## Our patient and business impact

**16** Blockbuster drugs in 2022, up from 8 in 2013

**#1** in neurology and hemophilia A market<sup>1</sup>

**#3** in oncology market<sup>1</sup>

**#1** in *in vitro* diagnostics market<sup>1</sup>

**#1** top pharma as ranked by rare disease patient groups<sup>2</sup>

**32** Medicines on the WHO List of Essential Medicines

# Headquarters in Basel and Kaiseraugst

One of the biggest sites worldwide



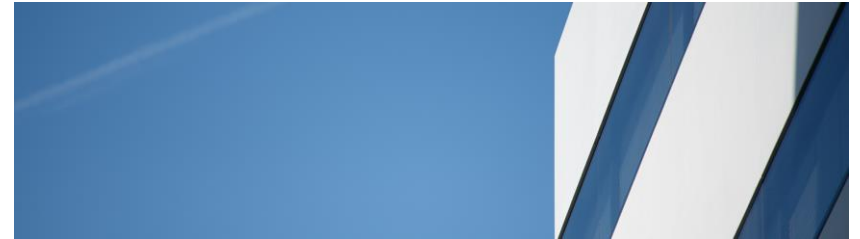
- Home to the Corporate Executive Committee and the Group functions and headquarters of both the Pharmaceuticals and Diagnostics Divisions

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- Global steering of Research and Development, Production and Marketing

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- Around 11,000 employees in FTE (without apprentices and interns)



- Pharmaceutical research: central nervous system, oncology, infectious diseases, rare diseases, ophthalmology, immunology

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- Pharmaceuticals production

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- Kaiseraugst: IT innovation center, packaging and logistics

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- High added value thanks to synergies between Research, Development, Production and Marketing

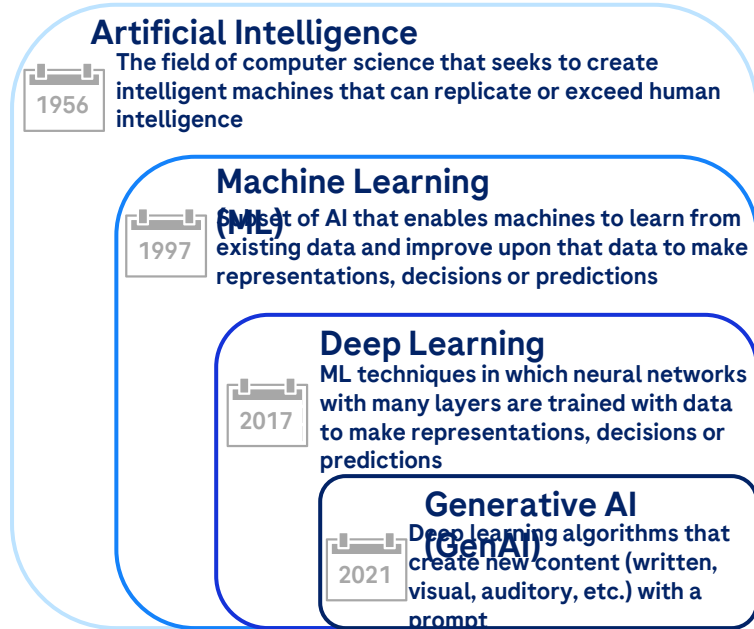
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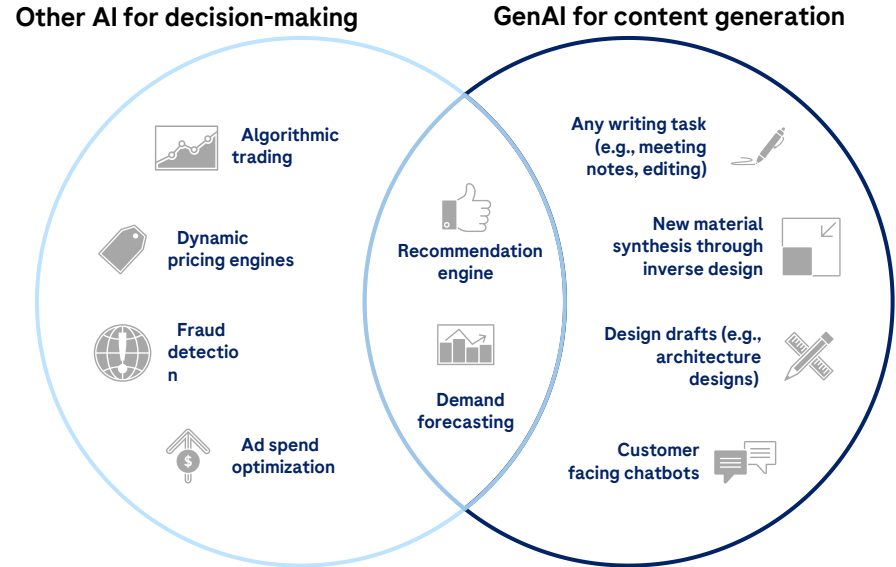
# Generative Artificial Intelligence

Generative Artificial Intelligence is transformative

Generative AI is a new and disruptive technology...



... that can complement other AI technologies



# Generative AI has gained significant traction in 2023...



**Chatbot can pass US law and medical licensing exams**

GPT-4 chatbot by OpenAI scored a 75% on the uniform bar exam, placing it in the 90th percentile.

Answers US medical exam licensing questions correctly more than 90% of the time

```

1 #!/usr/bin/env python
2
3 import { fetch } from "fetch-h2";
4
5 // Determine whether the sentiment of text is positive
6 // Use a web service
7 async function isPositive(text: string): Promise<boolean> {
8   const response = await fetch("http://text-processing.com",
9     {
10      method: "POST",
11      body: "text=" + text,
12      headers: {
13        "Content-Type": "application/x-www-form-urlencoded",
14      },
15    });
16   const json = await response.json();
17   return json.label === "pos";
18 }
  
```

**Code assistant increases productivity by 55%**

Coding assistant Copilots can auto-complete code and even turn text prompts into coding suggestions



**GenAI image wins art prize**

AI generated “Théâtre D’opéra Spatial” from Midjourney took first place in the digital category at 2022 Colorado State Fair

**The “Age of AI has begun”**  
– Bill Gates, March 2023

**“as big of a platform ship as the internet was” in 1995 and the iPhone in 2006**  
– Doug Leone (Sequoia) on GenAI in April, 2023

**“2X easier and 10X the speed”**  
Reid Hoffman (LinkedIn cofounder) on using Gen AI to write a book in April, 2023

# Industry view: Digital maturity in the healthcare is improving

Healthcare score improved (2022 vs 2019) showing progress

**+12** points

Healthcare  
Digital Acceleration  
Index by BCG  
Vs 2019.

**Second**  
highest increase by  
Industry\*

**80%** more EBIT

produced for digitally  
advanced Healthcare  
companies than those  
that lag.

**Highest**  
EBIT Advantage by  
Industry\*

\*Source BCG Digital Acceleration Index (DAI), global study 2022.

\*\* Source BCG Digital Acceleration Index (DAI), global study 2022. The numbers represent the EBIT surplus (average over the last three years) of digitally advanced companies (the top 25% in BCG sample) compared with the bottom 25%.

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# The case for change – Pharma Digital Customer Engagement



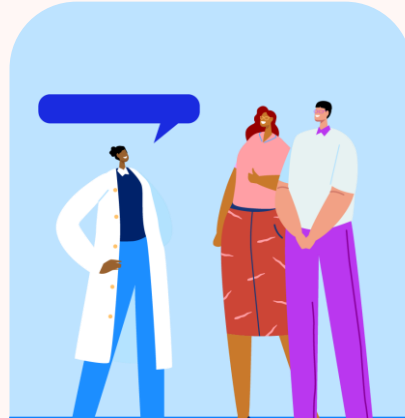
# We need to evolve from a Product focus to a Customer focus



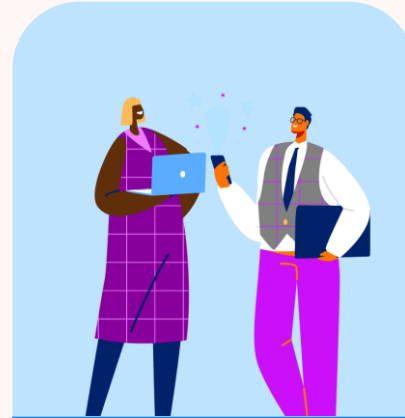
Our evolving business environment and stakeholder expectations are driving the need for change



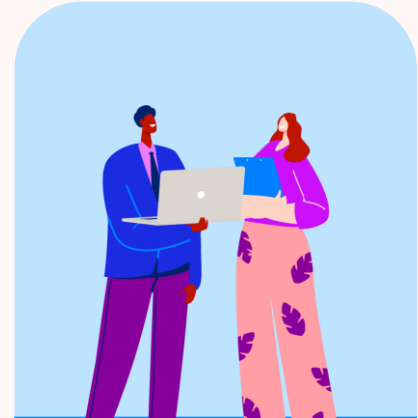
Our portfolio and business is changing



Our engagement model is changing from the traditional, transactional model to a 'partner and solve' model



Our customer base is changing, the expectation of patients, carers, customers is changing



Healthcare systems around the world are continuously evolving

Medical  
information

**DOUBLES**

every **73**  
days



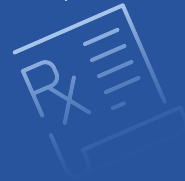
**>80%**

of customer experience  
is derived from non-  
product attributes

Up to  
**50%** of  
prescriptions  
are lost



after  
they are  
written



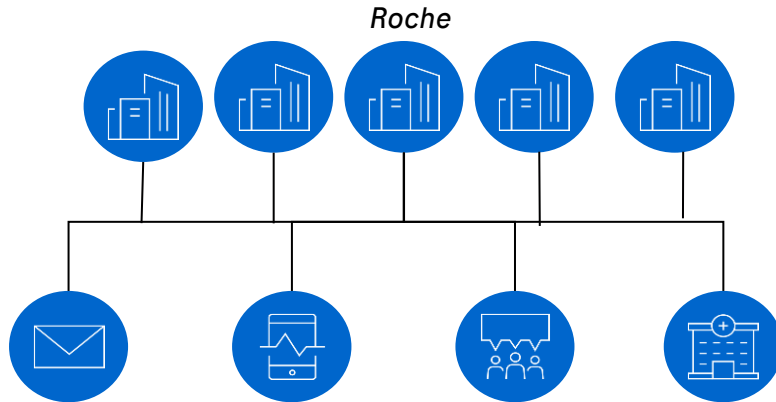
# What are the differences between multichannel and omnichannel?



## Multichannel

Starts with Roche and uses channels, digital & F2F, in an uncoordinated way & not based on customer preferences

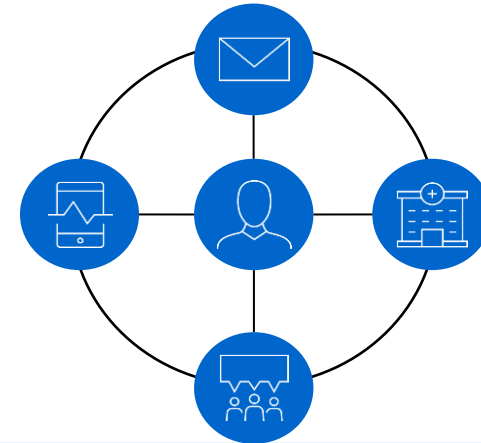
*Product focused, pushing content down*



## Omnichannel

Starts with the customer at the center using interconnected digital and F2F channels to seamlessly communicate

*Content based on customers' preferences and needs*



*Powered by data and technology*

# An example of High Performing Content



The world has changed,  
but the way we do Content &  
Channels has not



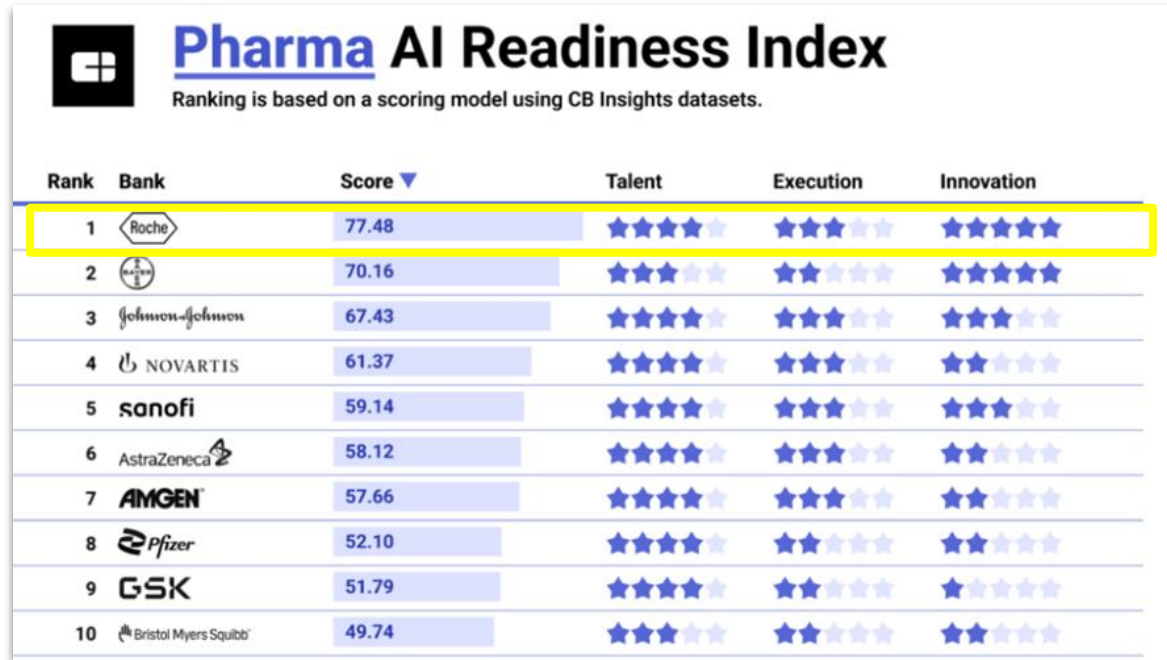
Did you know that the most watched content on managing type 1 diabetes is on TikTok and it had **500k views** within 8 hours of publication?\*



Global oncologists receive latest publications on their devices **within 4 hours** of publication.

# Roche at the front end of innovation

External data suggests Roche as the no.1 pharma company due to our leading levels of AI innovation




Source: [CB Insights \(August 2023\)](#)

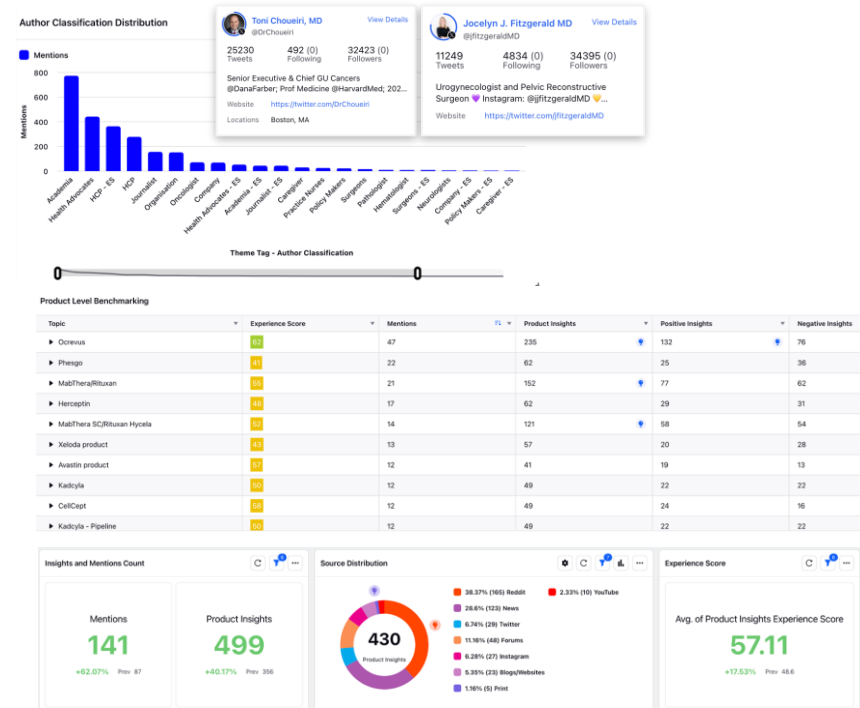


# Various use cases for AI within Intelligence

Use cases range from streamlining and automating simpler tasks, through to more complex solutions like identifying product insights on a granular level

## More advanced solutions

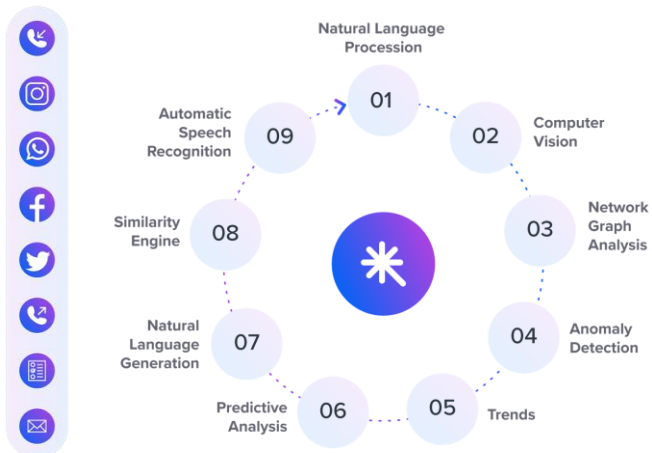
- Training sentiment models to align with pharma and healthcare (overall lack of relevance so continuous training is necessary to improve relevance)
- Leveraging AI Studio in Sprinklr to help identify audiences talking about a conversation - splitting between HCPs, patients, caregivers, policy makers, etc
- Developing taxonomies to help identify granular insights based on product mentions. Consists of both supervised and unsupervised training to determine insights (more detail on next slide)



# Leveraging generative AI for listening



## Sprinklr AI



## Generative AI

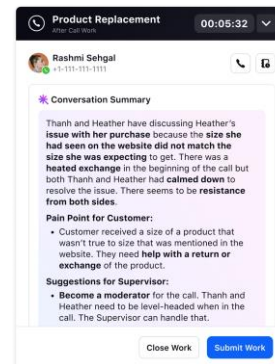


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## Sprinklr AI+

AI Everywhere paradigm enriches CX data for deeper insights, better decisions, faster actions.



- Platform supported by algorithms focused on CX data
- Customized across verticals and customer-specific details
- 2,000+ models on a unified codebase across 100+ languages
- Refined against real-world use cases and scenarios

- Broad, powerful models modify knowledge in natural language
- Official engagement with generative AI leaders, OpenAI + Bard models and APIs

- AI-generated recommendations and content for agents, marketers, analysts
- Seamless experience across every AI capability – for every Sprinklr user
- Reigns in expansive nature of generative AI to respect governance required by Unified-CXM



# RocheChat

A safe, Roche-internal version of ChatGPT

RocheChat

+ New Chat

Published Chats [Show All](#)

- Drafting an Agenda for a Two-Day AI Co-Creation Worksho...
- Artificial Intelligence Litigation and Regulations Impa...
- Self-criticism Example
- Get to Know Roche PD Organization - Finding Resources f...
- Get Onboarding Support and Buddy in Roche Product Devel...

Submit Issues or Feedback

## RocheChat

Examples	Capabilities	Limitations
<p>Extract entities from a given text</p> <p>How can I structure my research project about...</p> <p>What's the excel formula to sum up cells?</p>	<p>Remembers up to 10 messages of your conversation</p> <p>Allows follow-up questions</p> <p>Keeps enterprise data secure</p>	<p>May occasionally generate incorrect information</p> <p>Doesn't know Roche context other than specified by you</p> <p>Trained on a fixed data set. Doesn't know current events.</p>

### Today

- Prompt-based LLM walled within Roche infrastructure
- Based on GPT3.5
- Accepts confidential information - no information is transmitted or shared outside of Roche

### Communications Use Cases

- Speech-writing, copywriting, proofreading, idea generation, translation, etc

### In the future

- Upgrading to GPT4
- Trained on Roche internal data (i.e. intranet, knowledge base)

**Doing now what patients need next**