On Shoulders of Giants

In order to envision a better future, we need to have a deep understanding and insight.
This is why tools were created that enable us to understand, to gain insight.
Here are a few noteworthy examples:

45000 BCE Oldest recognizable cave painting

3400 BCE First written language (Sumerian)

2600 BCE Egyptians use lenses made from polished rock crystal to magnify objects

1700 BCE Babylonians predicted lunar and solar eclipses

400 BCE Camera obscura

212 BCE Archimedes, optical refraction laws

1 CE shadow and mirror projectors

1300 CE invention of spectacles against far-sightedness

See our curated timeline of inventions

There is a new milestone rising:

GenAI

New user interface

The internet let us share the world's knowledge. The smartphone gave us the ability to access this knowledge anywhere.

Today, GenAI allows us to access it easier and more comprehensively than ever before.

Powerful interfaces:
Yearly sales & growth of internet users.

Visual Interface PC — Interface Tablet — Smart Speaker

Interface for knowledge and connectivity: internet users
2023: 65% of global population has internet access

Smartphone
2023: 90% of adults have a mobile-/smartphone

Source: Statista

Open AI's ChatGPT is one of the fastest growing internet products.

*in 8 months: 180'000'000+ users

Growth in fraction of internet users since launch

Facebook, Twitter, Netflix, Instagram

Days since launch

Source: State of AI Report 2023

Content Creation

It can write texts, explain sources, generate images, compose music, search the internet, summarize papers - in less time than the fastest human can.

On the example of image generation: GenAI created as many images in a year as photography did in 150.

2011: Images taken worldwide 380 billions

First Photography — 150 Years of Photography — 1 Billion Images worldwide

2023: **ONE YEAR** of GenAI images — 15.5 billion images

The 10 largest stockimage platforms (Total 1.9 B Images)

GenAI 2023: 15.5 billion Images*

Adobe Stock 295 mio
Dreamtime 182 mio
Depositphotos 186 mio
123RF 180 mio
Canva 100 mio
Bigstock 110 mio
Alamy 288 mio
Pond5 51 mio
iStock 140 mio
Shutterstock 400 mio

* while not yet equal to photography, the quality of AI imagery is improving quickly

Source: Everypixel Journal, Photutorial

What about efficiency?

GenAI makes you faster, better & happier

Quantity — Quality — Optimism

GenAI complements good workers, it does not replace them

MIT study found: workers who could use GenAI were 40% faster and 18% better. Plus they were more optimistic about the future!

Shakked Noy, Whitney Zhang, MIT; Science 2023-07

What it means for business:

Today, the GenAI market is estimated to be 40 billion USD.

This number does not include the increase in productivity that GenAI brings already.

Generative AI Revenue
GenAI % of total tech spend

Bloomberg Intelligence predicts that GenAI revenue will grow to 1.3 trillion over the next 10 years, with a remarkable revenue per dollar spent ratio of 230%.

Source: Bloomberg Intelligence

For our Greek friends:
A GenAI knowledge graph

We analyzed Homer's Odyssey with the help of Natural Language Processing (AI) and generated this knowledge graph.

Agamemnon, Helen, Menelaus, Atreus, Achilles, King Nestor, Telemachus, Calypso, Poseidon, Odysseus, Apollo, Persephone, Penelope, Aphrodite, Queen Hera, Zeus, Athena

Cyclops, Giants, Circe, Sirens, Titan

● Human friendly/neutral
● God friendly/neutral
● Human enemy/unfriendly
● God enemy/unfriendly
○ Location of the Journey
○ Location not part of the Journey

Hey Herlock, show me Odysseus' journey.

Ismarus, Troy, Lotus-Eaters' Isle, Aeaea, Aeolus' Isle, Teleplyus, Polyphemus' Isle, Scheria, Phaeacia, Ogygia, Ithaca, The Sea, Sirens, Scylla and Charybdis, Aeaea, Underworld

Spotlight: Troy - who was there

Prince Deiphobus, Achilles, Agamemnon, Helen, Antiphus, Odysseus, Argives, Atreus, Menelaus, Areos

BTW, Herlock.ai uncovers similar connections in legal cases daily ;-)

Wherever you celebrate, we wish you
a Merry Christmas and a Happy New Year!

Sirer, Hans Peter, Stamatis, Dominique, Christian, Patrick

D ONE
WE MAKE SENSE.

Vision aids

Tools and methods for generating insights: This timeline contains breakthroughs that enabled a new perspective in our understanding (be they physical or digital).

Including: GenAI milestones and applications.

Optical

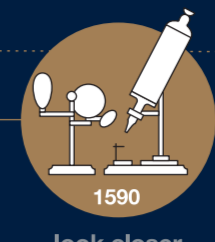| Year	Event
1590	**Zacharias and Hans Jansen develop first compound microscope**
1608	First telescope, Hans Lippershey
1609	Galileo massively improves telescope
1672	Newton invents reflecting telescope
1800	Development of spectroscopy
1826	First photo
1840	First mathematically calculated lens
1858	First aerial photograph
1861	Reflex camera invented
1879	Filmstrip projector invented
1873	First underwater photo
1895	X-ray photography
1896	Camera on unmanned aerial vehicle
1937	First contact lens
1946	First camera in space
1959	First satellite with camera, Explorer 6
1990	Hubble Space Telescope

1590 look closer

Mathematical

Year	Event
1637	Imaginary number 'i' formally defined
1662	Statistical estimation of population
1675	Discovery of calculus by Leibniz and Newton
1686	Three laws of motion, Newton
1710	Mathematical significance test, statistics
1727	Euler Constant 'e'
1824	Braille: tactile writing system
1837	Mechanical, general-purpose computer invented
1943	Neural networks invented
1945	**First electronic computer, ENIAC**
1952	First speech recognition software
1967	Computer pattern recognition algorithm
1967	First chatbot, rule-based
1979	Convolutional neural networks invented
1985	Excel
1991	Statistical image recognition
1998	First quantum computer
2000	"Moneyball," statistics in sports
2008	**General computer vision**
2014	Deep learning computer vision

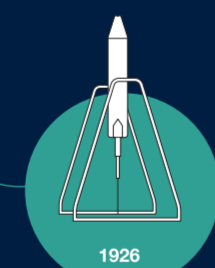## Forecast / Predictions

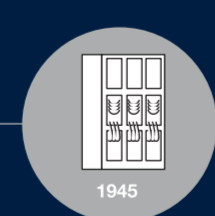| Year	Event
1757	Farmer's almanac for weather
1759	Foundation theory for behavioural economics
1776	Start of classical economics
1819	Earliest business cycle theory
1861	First weather forecast in newspaper
1865	Maxwell predicts electromagnetic waves
1878	Daily weather forecasts in Switzerland
1892	Invention of weather balloon
1915	General Theory of Relativity, Einstein
1920	National Bureau of Economic Research founded
1927	Heisenberg Uncertainty Principle
1928	Paul Dirac predicted the existence of antimatter
1936	Macroeconomic forecasting
1936	Alan Turing predicts the concept of a universal machine
1950	First computer-based prediction
1960	First weather satellite, TIROS
1965	Moore's law, transistors double every year
1979	Behavioural economics, first theory
1983	"Wie wir unsere Erde zum Treibhaus machen"

1783 see more

New perspective

Year	Event
1543	Heliocentric theory proposed by Copernicus
1620	First submarine built
1783	**First manned flight, hot air balloon**
1786	First Line Chart, Pie Chart and Bar Chart
1873	First heatmap drawn
1903	Airplane invented and flown, Wright brothers
1905	Graphical representations of data common in academia
1926	**First liquid-fuelled rocket launch**
1935	First drones built
1953	Proposal of double-helix structure of DNA
1957	First satellite, Sputnik 1
1966	Successful landing on moon
1971	First manned space station, Salyut
1978	Discovery of Dark Matter by Vera Rubin
2013	DJI Phantom Drone, available to public
2021	Powered, controlled flight on other planet
2022	**ChatGPT, talk to the internet**
2023	AI archeology: Vesuvius Challenge

Technical

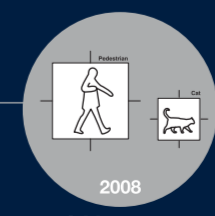| Year	Event
1883	Electric telescope invented
1897	Cathode ray tubes invented (TV screens)
1904	Radar, radiolocation system
1906	Sonar, echolocation system
1912	First mass spectrometer
1926	First television set
1931	First electron microscope
1957	First digital image
1960	Lidar, laserlocation system
1962	Satellite TV
1972	Invention of digital camera
1977	MRI invented, magnetic imaging
1981	First computer with GUI
1983	Internet designed
1986	First atomic force microscope
1991	**Internet goes public**
1996	First 3D scanner
2005	Youtube, new way of sharing videos
2005	D ONE founded: insights from data
2007	First smartphone with camera
2020	Herlock Insights AG founded
2021	**James Webb Space Telescope**

1926 sky's not the limit

1945 calculate the world

Image Processing
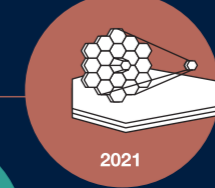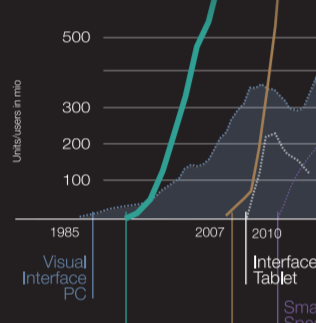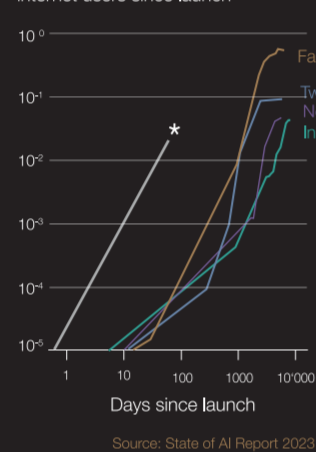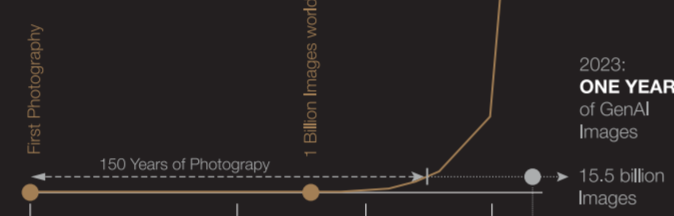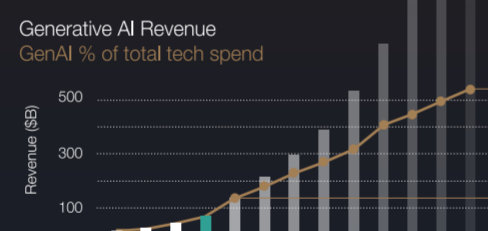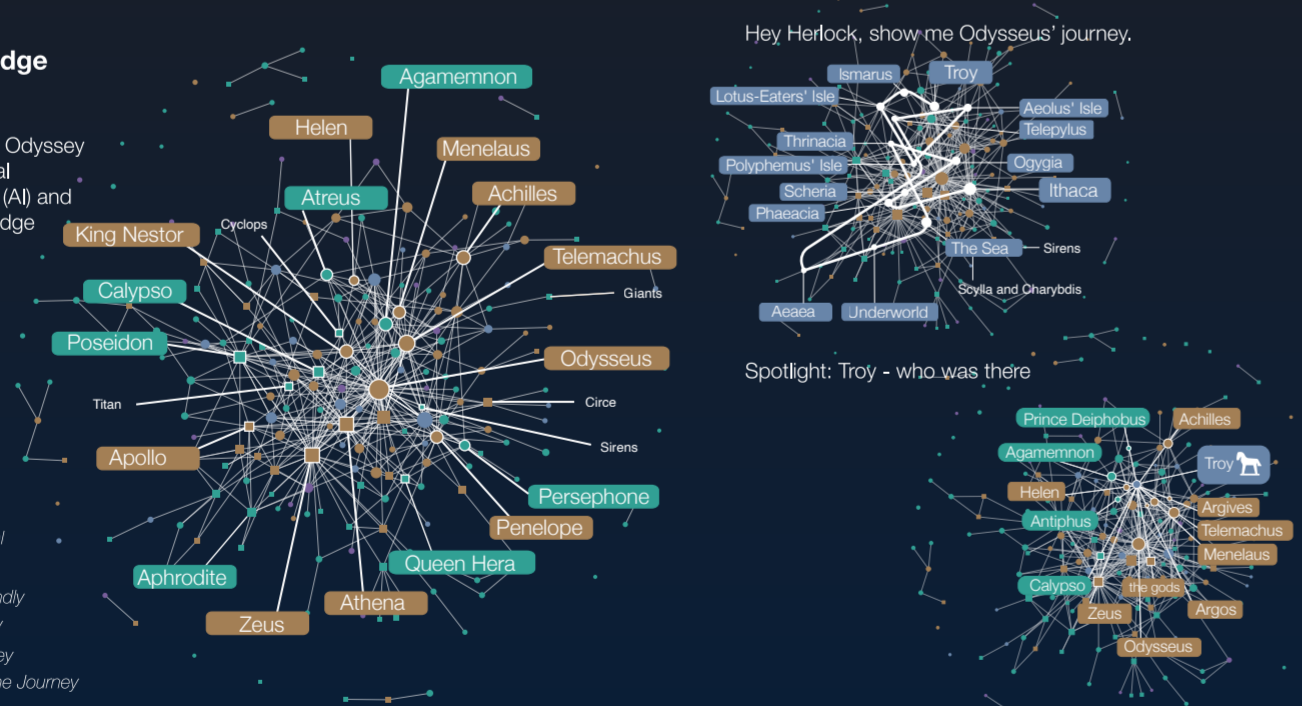
Year	Event
1964	First image processing software
1972	First digital 3D animation
1973	First AI image
2014	AI produces realistic images (GAN)
2021	DALL-E image generation program

1991 shared understanding

2008 world in patterns

2021 see though time

2022 beginning of a great adventure

1600 · 1700 · 1800 · 1900 · 2000