

# AI-TOOLS AND THEIR EFFECTS ON AGILE COACHING

## REPLACEMENT, ASSISTANT, SWISS ARMY KNIFE OR FAD?

**Paul Lanzerstorfer**

Agile Coach  
Dynatrace Austria GmbH

# AGENDA

- My Experience in Agile Coaching
- Generative Artificial Intelligence (AI) / Rise of (Chat)GPT
- Current AI Landscape
- **Effects on Agile Coaching: AI and AI-Tools as a...**
  - **Fad, Swiss-Army-Knife, Assistant, Replacement**
- Potential Game Changers
- Challenges and Drawbacks

# QUICK FIRE QUESTIONS

Please raise your hand if the statement is true for you 🙋

1. I have **tried out AI-Tools** - like ChatGPT - already
2. These tools **increase my efficiency or effectiveness** (at work)
3. Which rings more true?
  - A) **This will all blow over**, ChatGPT is just really advanced text completion
  - B) **Recent developments are a really big deal** and we are now a step closer to an Artificial General Intelligence

# MY EXPERIENCE IN AGILE COACHING

- Lead Agile Transformation at a mid-sized online sports betting / gambling company
- Now part of the **Agile Competence Center** at **Dynatrace**
- My main interests / areas of expertise
  - Data-informed coaching
  - Kanban / Flow

# GENERATIVE AI / LARGE LANGUAGE MODELS

*"**Generative artificial intelligence** (AI) refers to a category of **AI algorithms** that can generate new content based on the data they have been trained on. Their output [...] typically resembles human-generated data." - [1]*

*"A **language model** (LM) is a **probabilistic model of a natural language** that can generate probabilities of a series of words, based on text corpora [...] it was trained on."*

*"A **large language model** (LLM) is a LM **characterized by its large size**. Their size is enabled by AI accelerators [...]." - Wikipedia (LM and LLM)*

**GPT** = **G**enerative **P**re-trained **T**ransformer

# METEORIC RISE OF (CHAT)GPT

## Time to **100 million users**

- Internet 84 months
- Facebook 54
- WeChat 14
- TikTok 9
- **ChatGPT 2 months**







# MY FIRST USAGE OF CHATGPT

STORY TIME 



# CAPABILITIES OF GPT-4

**Intelligence** is a very general mental ability that [...] involves the ability to

-  Reason
-  Solve problems
-  Think abstractly
-  Comprehend complex ideas
- Learn quickly and learn from experience
- Plan

**Sparks** of Artificial General Intelligence [3]



# GENERATIVE AI LANDSCAPE

APPLICATION LAYER	Marketing (content)					
	Sales (email)	Code generation	Image generation			
	Support (chat / email)	Code documentation	Consumer / Social			
	General writing	Text to SQL	Media / Advertising			
	Note taking	Web app builders	Design	Voice Synthesis	Video editing / generation	3D models / scenes
	Other					
TEXT		CODE	IMAGE	SPEECH	VIDEO	3D
MODEL LAYER	OpenAI GPT-3	OpenAI GPT-3	OpenAI Dall-E 2	OpenAI	Microsoft X-CLIP	DreamFusion
	DeepMind Gopher	Tabnine	Stable Diffusion		Meta Make-A-Video	NVIDIA GET3D
	Facebook OPT	Stability.ai	Craiyon			MDM
	Hugging Face Bloom	Meta Code Llama				
	Cohere					
	Anthropic					
	AI2					
	Alibaba, Yandex, etc.					

# EFFECTS OF AI-TOOLS (I)

On the work Agile Coaches do

- **Agile Frameworks and Practices Knowledge**
- **Advising**
- **Guiding/Learning**
- **Facilitating**



# EFFECTS OF AI-TOOLS (II)

the context we work/coach - organizations / environments / teams

Which effects could it have on Agile Software Development?

*Agile Software Development is the  
rapid and sustained evolution of working software  
by self-organising and continuously improving teams  
responding to feedback from customers working in  
close collaboration.*

Coding Co-Pilots  
(some day: Conversational Programming)

changing nature of teams and their interactions,  
development ceasing to be the bottleneck

improved ways to incorporate feedback, tighter  
feedback loops

- Jason Gorman (Codemanship)

# AI-TOOLS AND THEIR EFFECTS ON AGILE COACHING

- a fad?
- a swiss-army-knife?
- an assistant?
- a replacement?

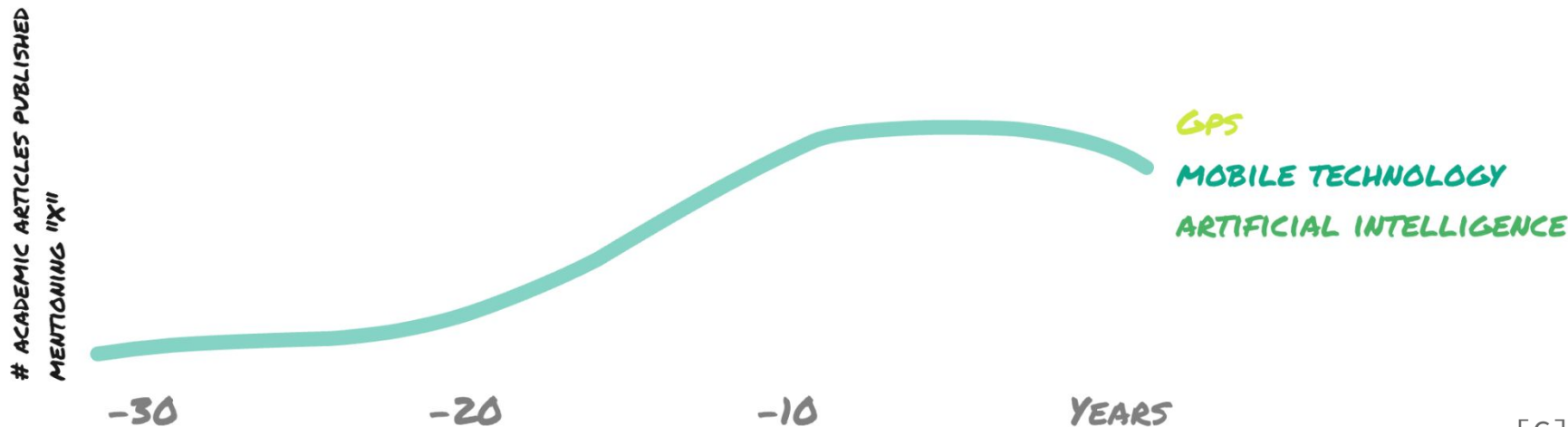
*It is very hard to predict,  
especially the future.*

– Niels Bohr

# ONLY A FAD?

## EFFECTS ON AGILE COACHING

- a fad – “a practice or interest followed for a time with exaggerated zeal”



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# ONLY A FAD? (II)

## EFFECTS ON AGILE COACHING

	PRE - 2020	2020	2022	2023?	2025?	2030?
TEXT	Spam detection Translation Basic Q&A	Basic copy writing First drafts	Longer form Second drafts	Vertical fine tuning gets good (scientific papers, etc)	Final drafts better than the human average	Final drafts better than professional writers
CODE	1-line auto-complete	Multi-line generation	Longer form Better accuracy	More languages More verticals	Text to product (draft)	Text to product (final), better than full-time developers
IMAGES			Art Logos Photography	Mock-ups (product design, architecture, etc.)	Final drafts (product design, architecture, etc.)	Final drafts better than professional artists, designers, photographers)

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Large model availability:



First attempts



Almost there

# AI AS SWISS-ARMY-KNIFE?

## EFFECTS ON AGILE COACHING

### **Swiss-Army knife**

- **Adaptable:** can be easily adjusted or modified to suit various tasks/situations
- **Versatile:** performs a wide range of functions, suitable for diverse purposes
- **Handy:** convenient and practical
- **Compact:** despite its numerous features, it maintains a compact and portable design



# AI AS SWISS-ARMY-KNIFE? - MY EXPERIENCES

## EFFECTS ON AGILE COACHING

### The Good

- Editing/improving all kinds of texts, ...
- Translations
- Storytelling, gripping metaphors
- A tutor for new knowledge areas
- Creating R code for one-off data analyses
- Co-creating workshops

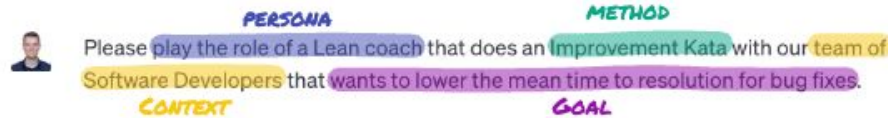
### The *Bad* / *Ugly*

- got simple arithmetics wrong
- "Shorten to half the length" still seems very hard for an LLM
- often rather basic content without proper prompting
- hallucinations

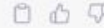


# AI AS SWISS-ARMY-KNIFE? - EXAMPLE: IMPROVEMENT KATA (I)

## EFFECTS ON AGILE COACHING



Of course, I'd be glad to guide you through the Improvement Kata process to help lower the mean time to resolution for bug fixes in your software development team. The Improvement Kata is a structured approach that encourages continuous improvement through iterative experimentation and learning. Let's get started!



### Step 1: Understand the Current Condition

First, we need to understand the current state of your bug fix process. Gather data on the mean time to resolution for bug fixes over the past few months. Identify the steps involved in your current process, from bug identification to resolution. Document the challenges, bottlenecks, and areas where delays commonly occur.

### Step 2: Set a Target Condition

Define your target condition. What would you like the mean time to resolution for bug fixes to be? Be specific and measurable. For instance, you might aim to reduce the mean time by 30% within the next quarter.

### Step 3: Define the Next Improvement Step (Experiment)



# AI AS SWISS-ARMY-KNIFE? - EXAMPLE: IMPROVEMENT KATA (II)

## EFFECTS ON AGILE COACHING



"First, we need to understand the current state of your bug fix process. Gather data on the mean time to resolution for bug fixes over the past few months. Identify the steps involved in your current process, from bug identification to resolution. Document the challenges, bottlenecks, and areas where delays commonly occur." Please point me towards more information on this first step

**FOLLOW-UP**

• • •

7. **Lean and Agile Principles:** Understanding Lean and Agile principles will give you a foundation to identify waste, prioritize value, and improve collaboration within your team.

For detailed information and practical guidance on these topics, you can explore books, articles, and online resources on Lean methodologies, Agile practices, and process improvement. Some recommended books include:

- "The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win" by Gene Kim, Kevin Behr, and George Spafford
- "Lean Thinking: Banish Waste and Create Wealth in Your Corporation" by James P. Womack and Daniel T. Jones
- "The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses" by Eric Ries

You can also search for online courses or workshops on Lean methodologies and process improvement. These resources will provide you with practical insights and tools to effectively analyze your bug fix process and make informed improvements.

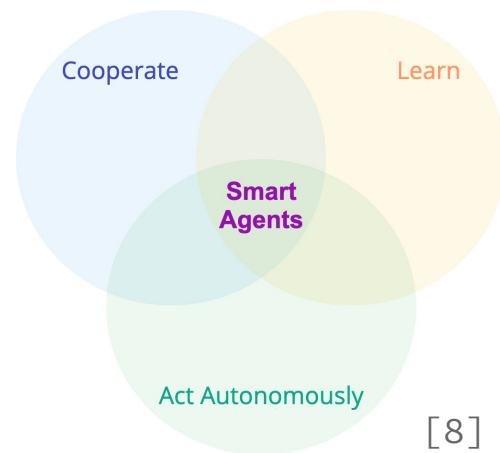
# AI AS ASSISTANT?

## EFFECTS ON AGILE COACHING

- assist – to give usually supplementary support or aid to

What this would entail for me

- Integration into a variety of tools to **fulfill tasks**
- **access to necessary context** in which the task is to be performed
- **Smart Agent** capabilities / ability to
  - **learn**
  - **cooperate**
  - **act autonomously**
- (probably some kind of persona attached to the system)



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# AI AS ASSISTANT? (II)

## EFFECTS ON AGILE COACHING

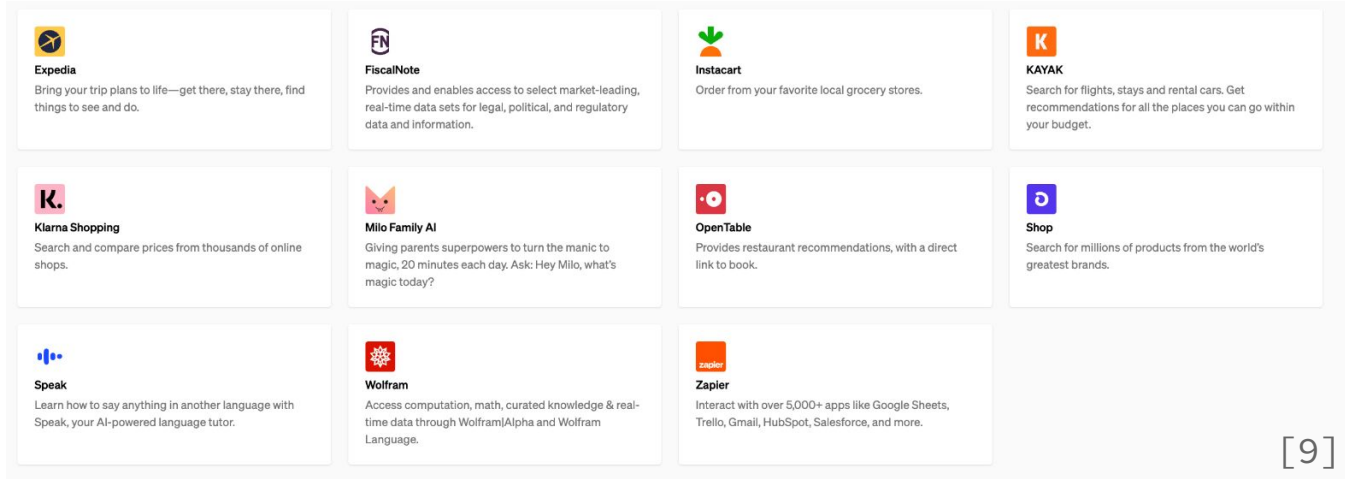
### Potential tasks

- On-demand learning and guidance / Training
- Mentoring support
- Workshop design
- Support for change management
- *and many more*

# AI AS ASSISTANT? (III) - ECOSYSTEM / PLUGINS / AGENTS

## EFFECTS ON AGILE COACHING

- **plugins** may play a major role in order to
  - access **up-to-date information**
  - run **computations**
  - use **third-party services / integrations**
- growing ecosystem to handle a higher variety of Agile Coaching related tasks



# AI AS REPLACEMENT?

## EFFECTS ON AGILE COACHING

What would this entail?

- Replacing Agile Coaches by **working independently with the organization** to **achieve higher degrees of business agility** to **provide direct, learning, or opportunity value**

<Fiction>



</Fiction>

# AI AS REPLACEMENT?

## EFFECTS ON AGILE COACHING



Will Agile Coaches be replaced by an AI in the near future?



As of my last knowledge update in September 2021, while AI and automation are advancing rapidly, it's challenging to predict with certainty whether Agile Coaches will be entirely replaced by AI in the near future. Here are a few considerations:



1. **Complexity of Human Interaction:** Agile Coaches often work closely with teams, addressing their dynamics, communication, and collaboration. The human element in coaching involves empathy, emotional intelligence, and understanding nuances that are currently difficult for AI to replicate.
2. **Adaptability and Creativity:** Agile Coaches need to adapt their approaches based on the unique needs and challenges of each team. They offer creative solutions and facilitate discussions that require a level of human intuition and contextual understanding that AI struggles with.
3. **Organizational Context:** Agile Coaches not only focus on teams but also on the broader organizational context. They assist in fostering an Agile culture, working with leadership, and aligning Agile practices with business goals. This involves strategic thinking and decision-making that AI might find challenging.






4. **Continuous Learning and Improvement:** Agile is built on the principles of continuous learning and improvement. Coaches help teams and organizations reflect on their practices, identify areas for growth, and experiment with changes. This ongoing learning cycle relies on human judgment and interpretation.
5. **Ethical and Social Considerations:** The role of Agile Coaches extends beyond technical guidance. They help with conflict resolution, motivation, and building trust among team members. These aspects involve ethical considerations and human values that AI might struggle to navigate effectively.

While AI might assist Agile Coaches by providing data-driven insights, automating certain tasks, or suggesting patterns, the holistic and nuanced nature of coaching suggests that complete replacement by AI could be challenging in the near future. Instead, AI could complement their work by providing tools and information to enhance the coaching process.

It's worth monitoring developments in AI and the adoption of AI-assisted coaching tools to see how the role of Agile Coaches evolves over time. Keep in mind that the rate of advancement in AI can be rapid, so newer developments beyond my last update could have occurred since then.

# AI AS REPLACEMENT?

## EFFECTS ON AGILE COACHING

-  **Complexity of Human Interaction** *difficult to replicate for an AI*
-  **Adaptability and Creativity** *based on human intuition still needed*
-  **Organizational Context** *still challenging to fully grasp*
-  **Continuous Learning and Improvement** *also relies on human judgment*
-  **Ethical and Social Considerations** *hard to navigate*



*AI can complement, rate of advancement is rapid, Agile Coach role may evolve*



# RECAP: AI-TOOLS AND THEIR EFFECTS ON AGILE COACHING

- not a fad, **here to stay** (built on strong foundation)
- a swiss-army-knife: **yes**, already a versatile/handy tool
- an assistant? **not yet**, plugins/integration and smart agent capabilities may get us there soon
- a replacement? **currently very hard to predict; rate of change, vast challenges to overcome still**

# POTENTIAL GAME CHANGERS

- **Conversational Programming**

*“The speed of one company with **engineers building systems through conversational programming** (i.e. a discussion with the system) vs.*



*the speed of a company whose **engineers are messing around with containers and orchestration systems** (such as kubernetes clusters) vs.*



*the speed of a company whose **engineers are still wiring servers in racks**.*



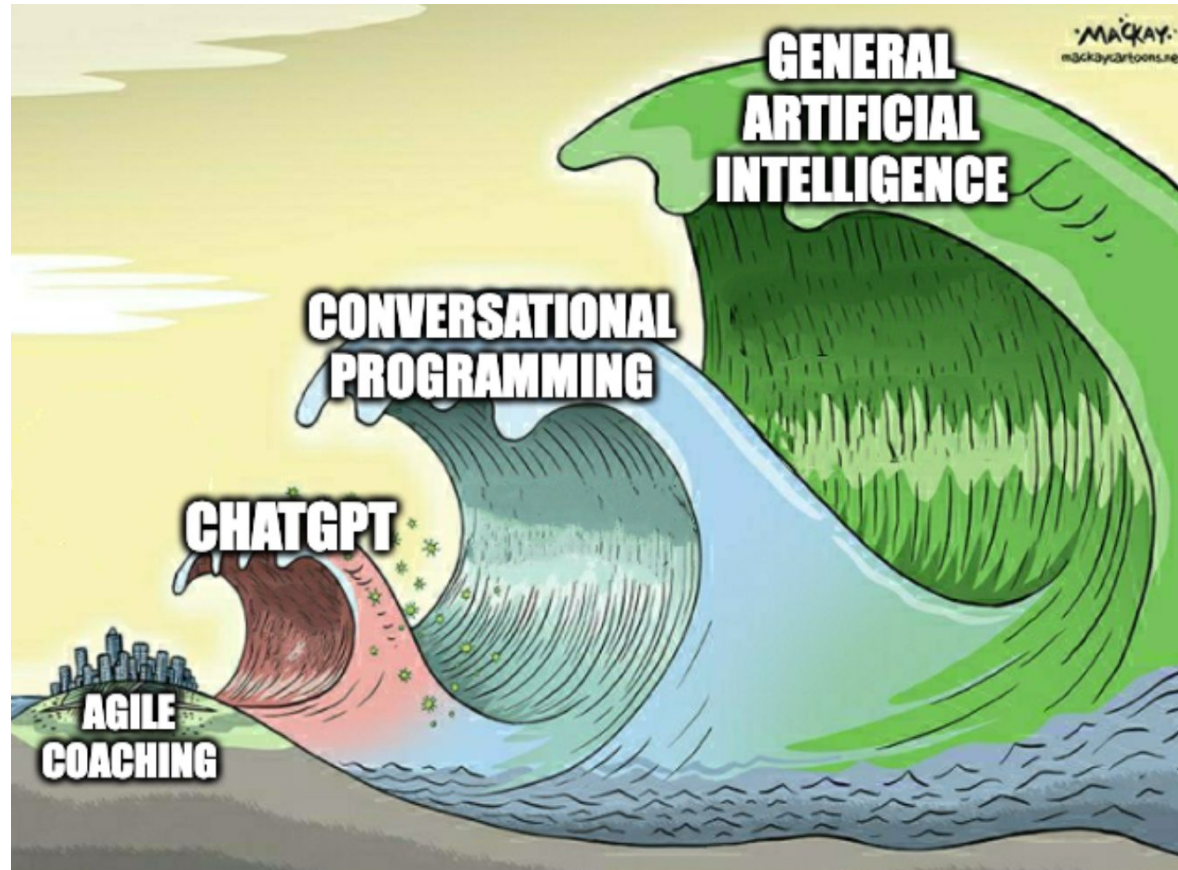
*I want you to [...] realise that you will have no choice over this evolution.”*

*- Simon Wardley [10]*

- **Generative Interfaces beyond Chat [11]**

- **Artificial General Intelligence**

# POTENTIAL GAME CHANGERS (II)



# CHALLENGES AND DRAWBACKS

- hallucinations
- reinforcing biases
- reward hacking
- models are new and poorly understood
- emotional intelligence
- loss of human connection
- power of "big tech"
- economic / job market upheavals
- ethical considerations

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# SUMMARY / OUTLOOK

- Recent developments in Generative AI are **based on decades of research**
- Agile Coaches which **enhance their skills** via LLMs (and other AI-Tools) will get more done through higher efficiency and effectiveness
- Current pace/rate of change makes **predictions very hard**
- **Exciting times ahead** for Agile Software Development and the world
  - **Conversational Programming** and **General Artificial Intelligence** seem a step closer

# Q&A & DISCUSSION

- Which **questions/feedback/comments/thoughts** do you have?
- **How do you feel** about the latest advancements in Generative AI?
- Which **implications** do you see for your job or organization?
- **How should Agile coaches and teams adapt** to recent advancements in AI?

# REFERENCES

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- [2] [How Long it Took for Popular Apps to Reach 100 Million Users](#)
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- [10] [Why the fuss about conversational programming?](#)
- [11] [Generative Interfaces Beyond Chat - @thesephist](#)
- [12] [From the MIT GenAI Summit: A Crash Course in Generative AI](#)
- [13] [40% of workers will have to re-skill in the next three years due to AI, says IBM study](#)