Harnessing the power of AI in your innovation process

Innovation pioneers Tank meeting with Kairos Future & LKAB, May 5th 2023

FUTURE
Research-based foresight

STRATEGY
Future-based strategy

ACTION
Strategy enforcement

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Agenda

09.00-09.15	Welcome
09.15-10.30	**Intro to AI and knowledge automation**
	Discussions, demos and interactive live demo
10.30-10.45	Break
10.45-12.00	**LKAB presentation and cases, group discussions, sharing of insights**
12.00-13.00	Lunch
13.00-14.30	**Augmenting innovation processes and innovation roles with AI**
	Presentation, discussions
14.30-14.45	Sharing, reflection
14.45-15.00	Wrap up

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Katarina Stetler
Director of Innovation
& Consumer insights
Kairos Future

Mats Lindgren
Founder of
Kairos Future

Olivier Rostang
Future Strategist
& AI whisperer
Kairos Future

Jan Lundgren, Head of Transformation BAIO

Robert Ylitalo, Transformationsledare

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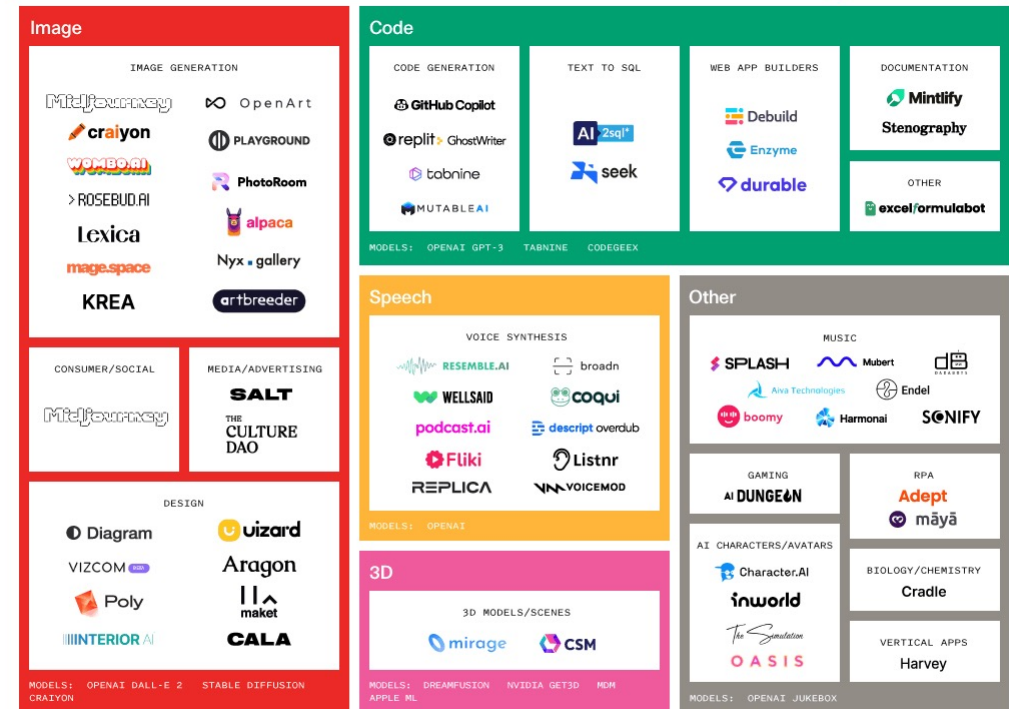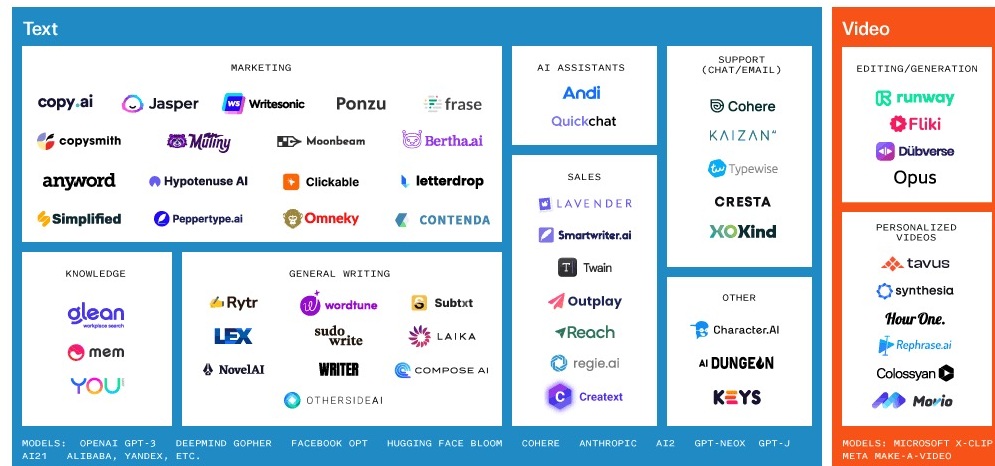# The BIG Q

The 21st century challenge

*"The most important contribution of management in the 20th century was to increase manual worker productivity fifty-fold. The most important contribution of management in the 21st century will be **to increase knowledge worker productivity** – hopefully by the same percentage."*

Peter F. Drucker, in "Management challenges of the 21st Century", 1999

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Rapidly growing landscape

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Two approaches to research+AI: Top down and bottom-up

Behind the scene of ChatGPT

Natural Language Processing

- Structuring
- Extraction
- Enrichment

Natural Language Understanding

- Classification, relevance filtering
- Semantic search
- Content-based clustering

Natural Language Generation

- Summarization
- Synthesis
- Question answering

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Bottom-up and top-down approaches

Top-down approach:
Specific focus areas

Bottom-up approach:
Broad arena
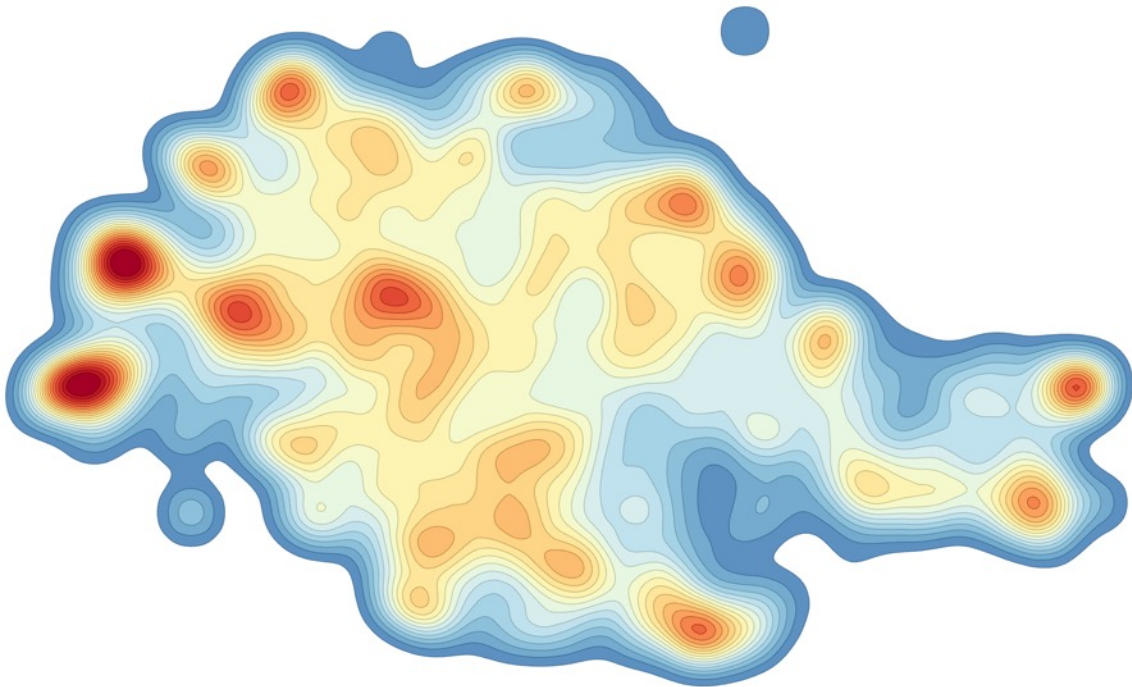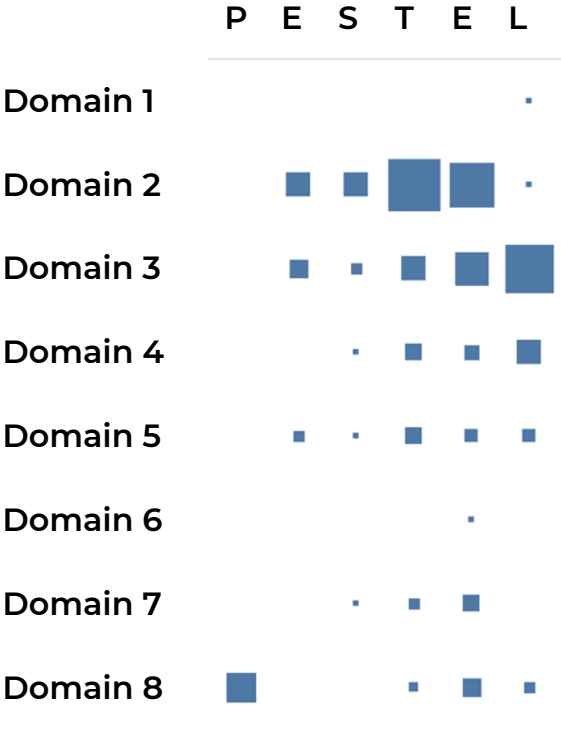
Source: Generated with https://www.dcipheranalytics.com/

Insight professionals use Dcipher Analytics for four types of insight needs

Top-down

Finding specific info/ answers	Signal detection
Area mapping	Horizon scan

Ad-hoc ← → Continuous

Bottom-up

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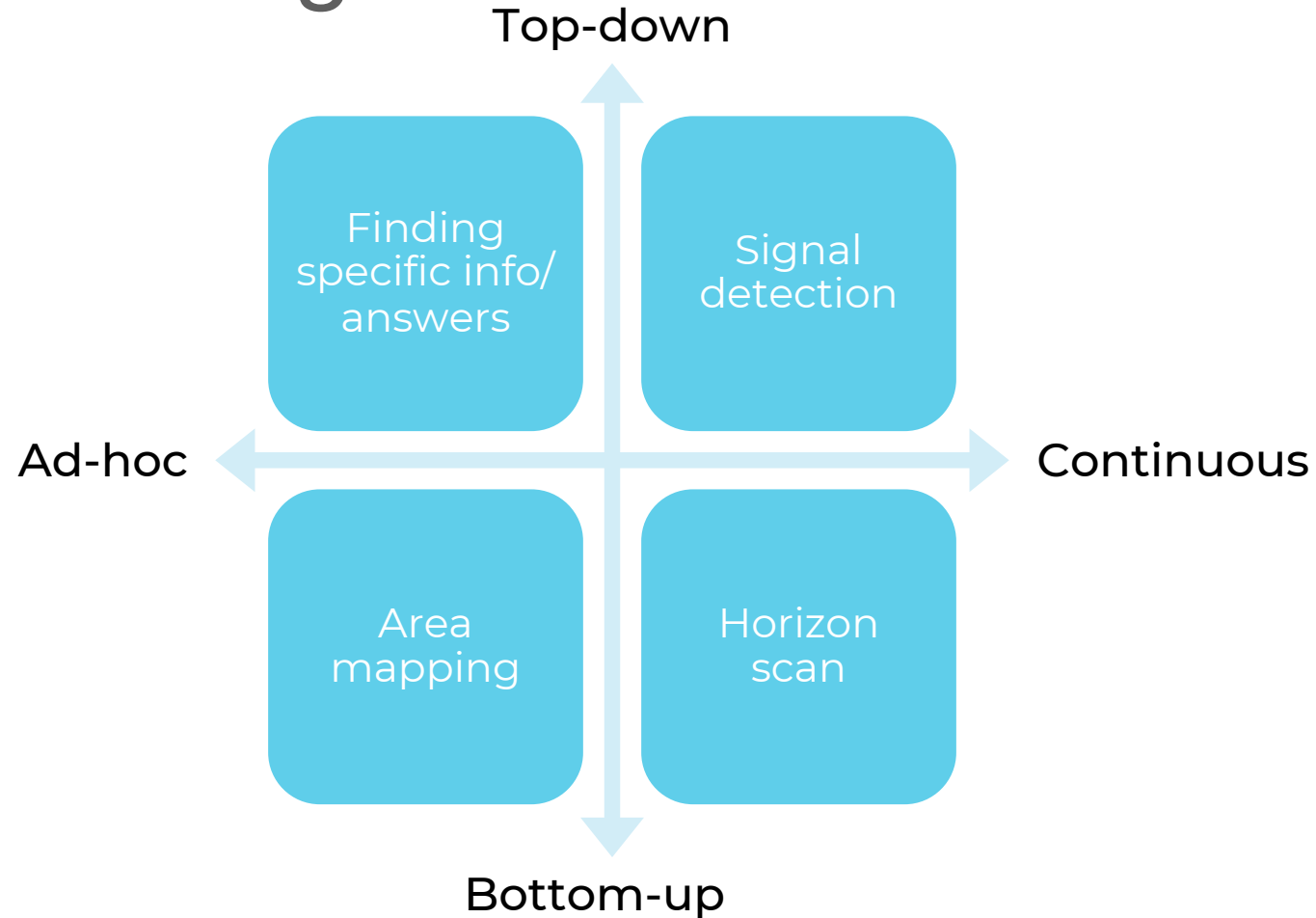
Dcipher Analytics offers end-to-end insight workflow automation

Data (social media, news, surveys, reports)

Processing power

Pretrained models

Dcipher Studio: Pipeline design & workflow automation

Prep & preprocessing
Enrichment
Complex aggregations
Annotation
Model training/retraining
Summarization
Automation & deployment

Automated reports and emails

Data via API

Dashboard

AI models

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Example: Landscape of news reporting around vaccination

100 000 news articles in three different languages

Inocculation priorities & progress

National agencies' efforts & communication

Vaccine logistics & distribution

Stakeholders in government, academia, international organizations, professional organizations, and political parties

Governors' & regional response

Travel restrictions & diaspora

Financing & equitable distribution

Community engagement & intermediaries

Adverse events

Regulatory approval and information about specific vaccines

Trust building efforts & barriers

Polio eradication

International news, incl misinformation from Tanzania's president

Social media information & misinformation

Hesitancy & conspiracy theories

Risks & side-effects

Immunization initiatives

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Source: Generated with https://www.dcipheranalytics.com/

Example: Research bot conducts research based on a topic-stakeholder matrix

The text discusses the company's **robotic-assisted solution for total knee replacement**, which has received several approvals and is experiencing higher utilization than projected. The company also has a **broad offering across the digital robotic surgery landscape** and is making progress in advancing differentiated solutions. [Based on 7 mentions.]

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LLMs and the future of knowledge work

What are large language models?

Data, data, data

Trained model

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When did models start beating humans?
A great leap after 20 years of steady growth

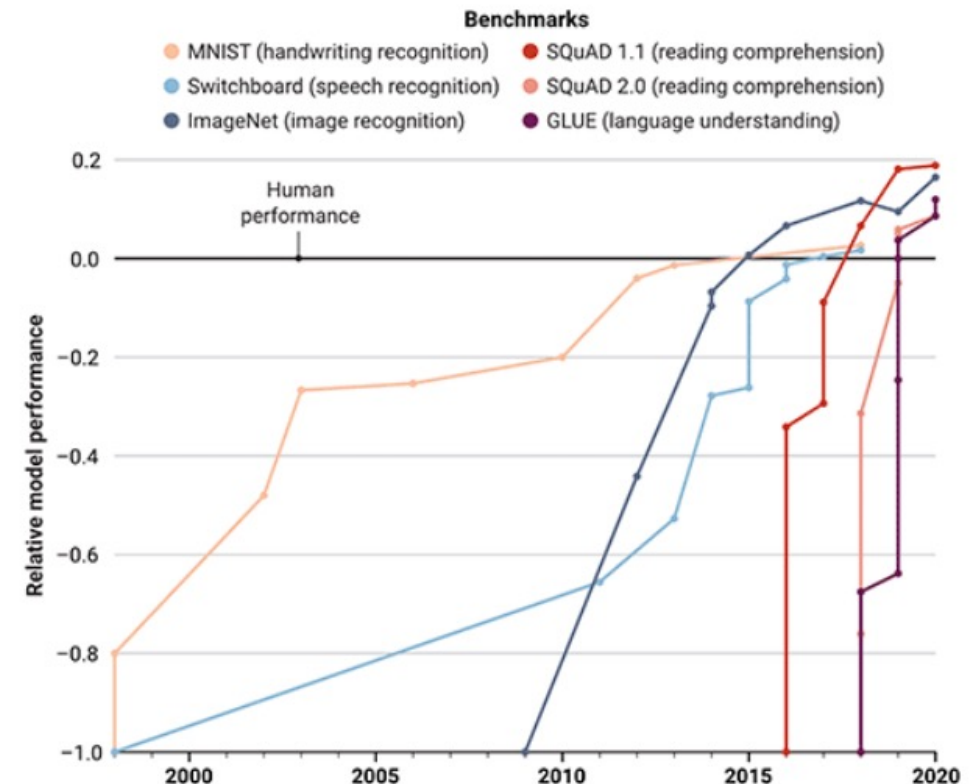**1 miljon times bigger in 3-5 yr**

The blessings of scale
AI training runs, estimated computing resources used
Floating-point operations, selected systems, by type, log scale

- Drawing
- Language
- Vision
- Other

PaLM (540B)
LaMDA
GPT-3
DALL-E
GPT-2
BERT-Large
NPLM
NetTalk
Neocognitron
ADALINE
○ Theseus

10^{24}
10^{20}
10^{16}
10^{12}
10^{8}
10^{4}
1

1950 60 70 80 90 2000 10 22
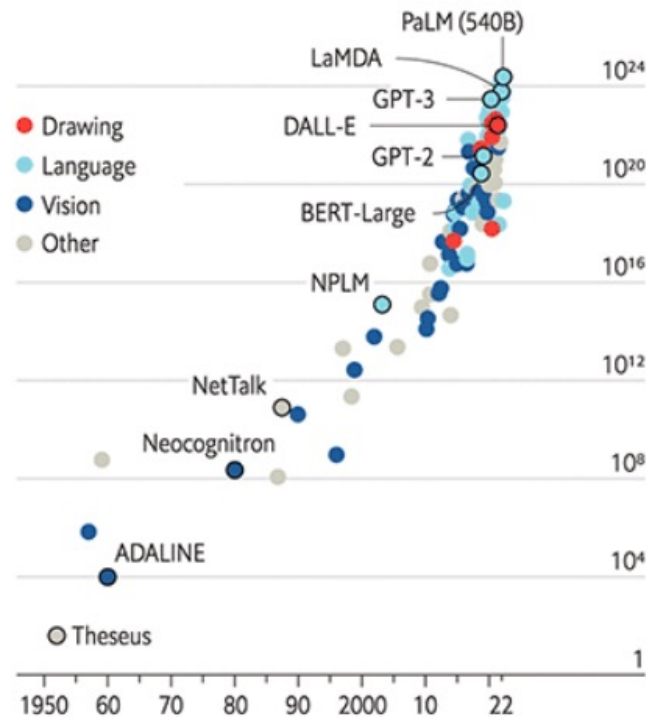
Sources: "Compute trends across three eras of machine learning", by J. Sevilla et al., arXiv, 2022; Our World in Data

Quick learners
The speed at which artificial intelligence models master benchmarks and surpass human baselines is accelerating. But they often fall short in the real world.

Benchmarks
- MNIST (handwriting recognition)
- Switchboard (speech recognition)
- ImageNet (image recognition)
- SQuAD 1.1 (reading comprehension)
- SQuAD 2.0 (reading comprehension)
- GLUE (language understanding)

Human performance

Relative model performance

0.2
0.0
−0.2
−0.4
−0.6
−0.8
−1.0

2000   2005   2010   2015   2020

(GRAPHIC) K. FRANKLIN/SCIENCE; (DATA) D. KIELA ET AL., DYNABENCH: RETHINKING BENCHMARKING IN NLP, DOI:10.48550/ARXIV.2104.14337

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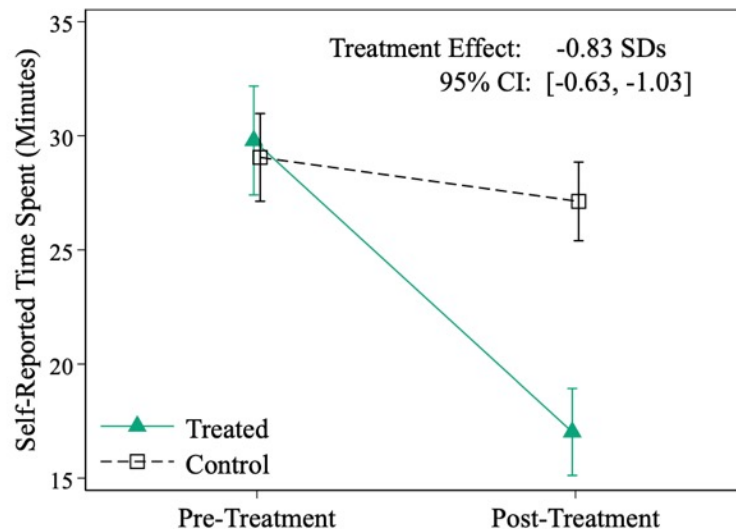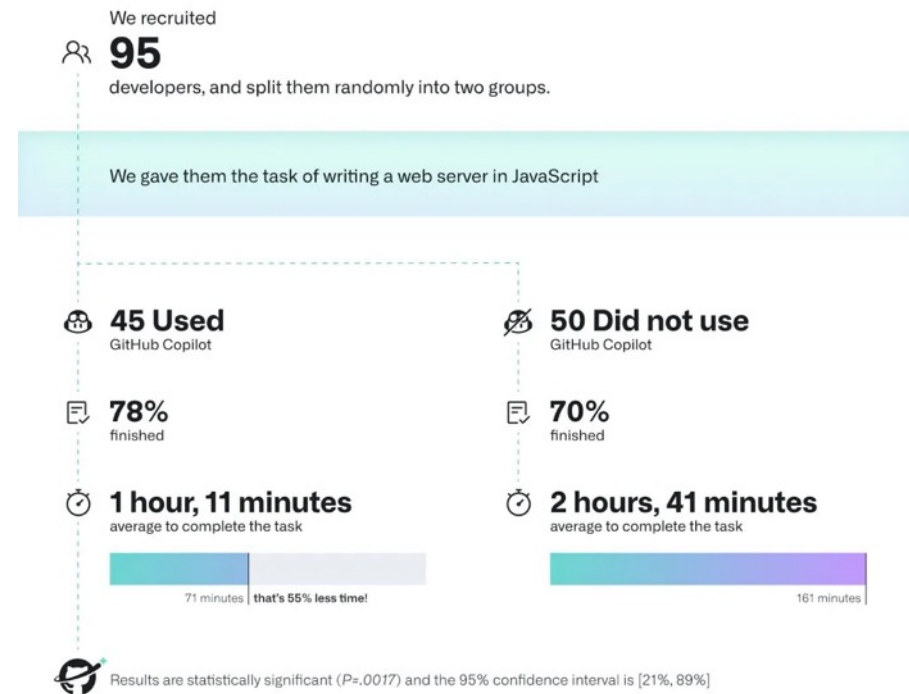# How much will generative AI increase productivity

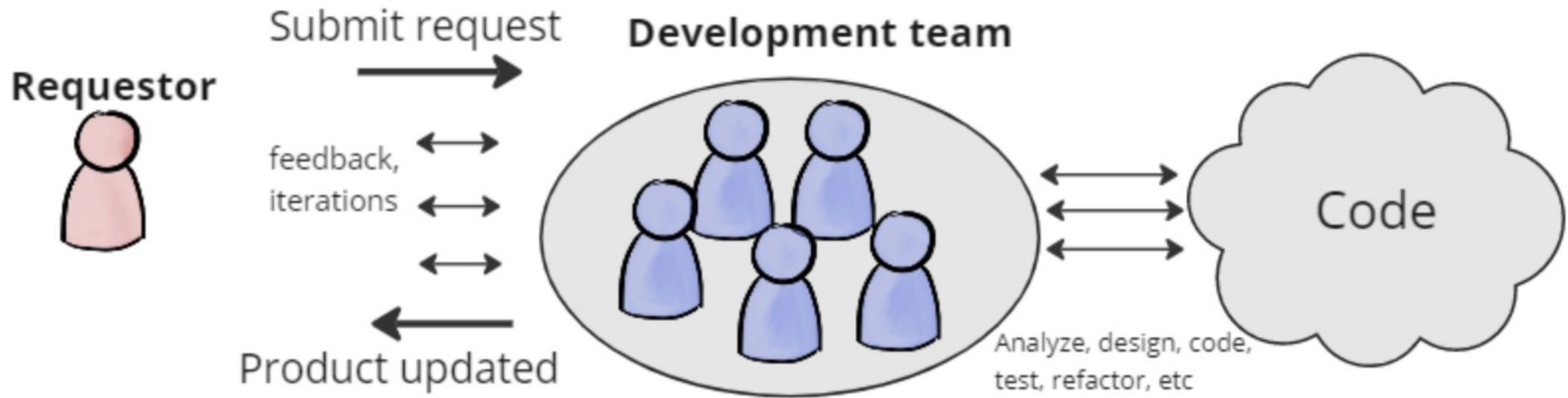Write: 60% faster with ChatGPT

Coding with Copilot: 128% faster

Do we need developers in the future?
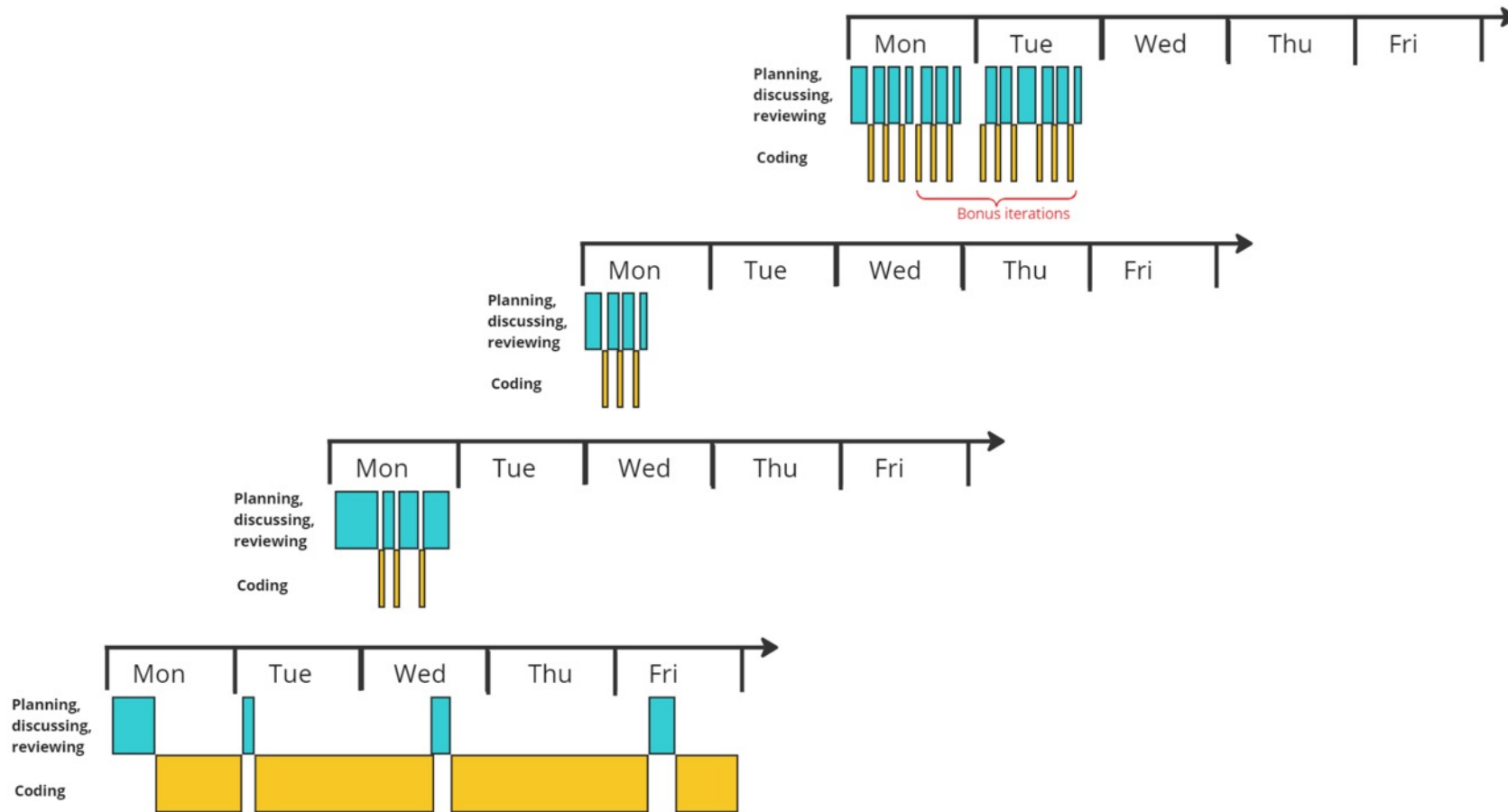
If not? Accelerated development

Källa: https://hups.com/blog/are-developers-needed-in-the-age-of-ai

Prompting and process are key

- A **global fund-of-funds company** analyzes 150 funds annually

- For each investment, analysts go through reams of documents in a **data room** and put together an **investment report**

- With AI support, template and clear instructions, a first version of the report can be generated completely automatically
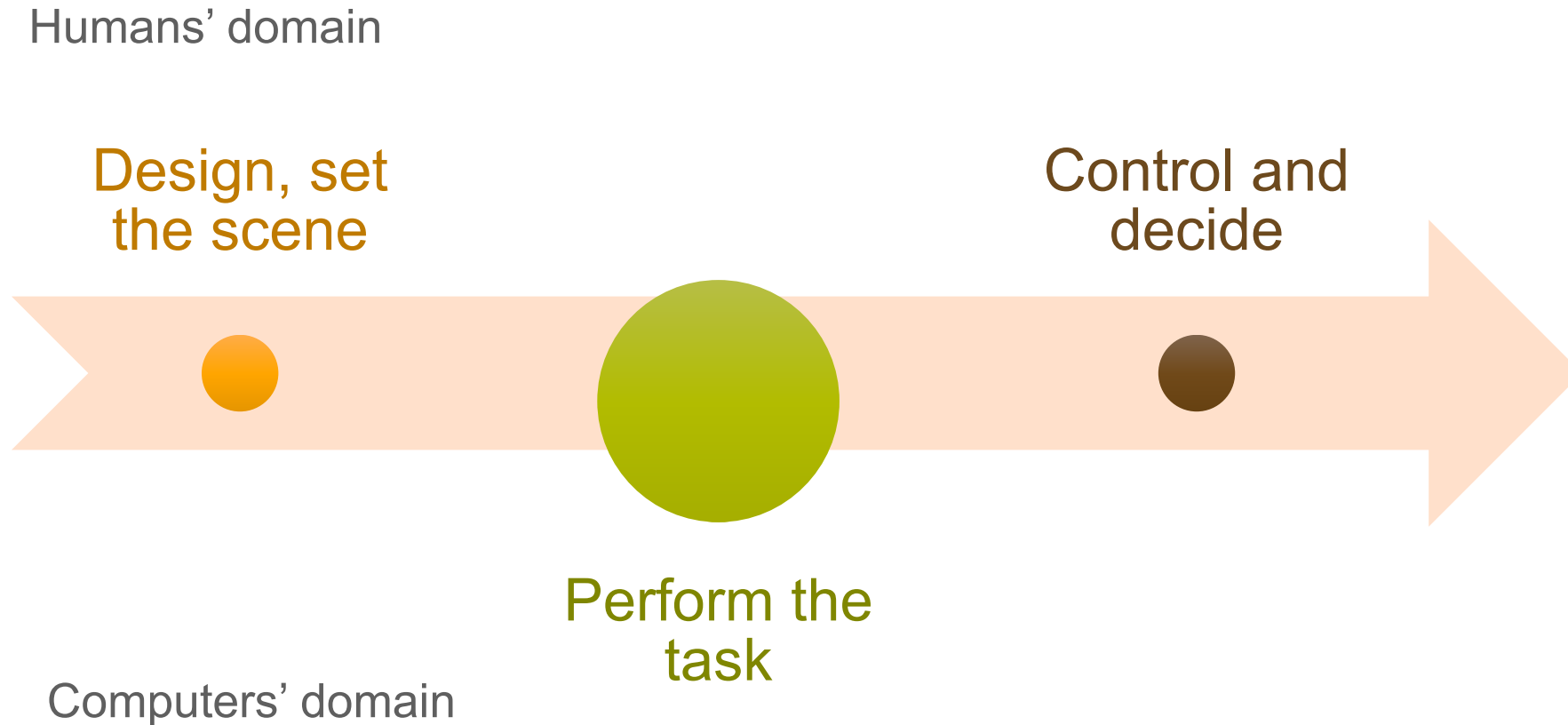
Prompt examples

- "Summarize the operating executive board's composition and primary role/responsibilities."

- "Summarize the data; discuss who has the most number of board seats, who has more capacity to take on more board seat responsibilities."

- "Leveraging GP-provided materials, summarize the decision making and investment committee process, as well as investment committee composition."

- "Summarize investment performance by sector of [the firm's funds], drawing conclusions where appropriate."

- "Discuss the firm's general usage of leverage and debt across its investments.

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Teaming up with machines:
We're all becoming managers

Humans' domain

Design, set
the scene

Control and
decide

Perform the
task

Computers' domain

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Source: Kairos Future

AI tools and examples

Olivier

Midjourney

Welcome to
Pepperoni
Hug Spot

TODAY   ON THE SHOW   SHOP   WELLNESS   PARENTS   FOOD   TODAY *all day*   🔍   ☰

TRENDS

'Cursed' pizza commercial generated by AI is terrifying the internet

"Pepperoni Hug Spot: Like family, but with more cheese."

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https://www.youtube.com/watch?v=qSewd6Iaj6I

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OL I'm playing Civilization 6 with with Hammurabi from the Babylonian empire. We are playing on the archipelago map and I see no other civilizations or city-states in the vicinity. Based on this limited information, can you suggest what type of play style and strategy I should attempt and secondly which type of victory I should aim for?

With the information provided, playing as Hammurabi from the Babylonian Empire on an archipelago map, you can attempt the following play style and strategies:

1. Focus on Science: The Babylonian Empire has strong bonuses for science, thanks to its unique ability "Enuma Anu Enlil" that rewards Eurekas with full technology unlocks. Prioritize unlocking Eurekas by exploring, settling coastal cities, and building a navy to engage in naval warfare.

2. Naval Dominance: As you're on an archipelago map, having a strong navy is crucial. Focus on researching technologies that unlock stronger naval units, and maintain a well-rounded fleet. Use your navy to explore, protect your own territory, and control sea resources.

3. Expand and Settle: Settle on resource-rich islands and prioritize building Harbors and Lighthouses for increased growth and production. Focus on city placement that maximizes adjacency bonuses for districts such as Harbors and Campuses.

4. Leverage Unique Units and Districts: Hammurabi's unique unit, the Sabum Kibittum, is a strong early-game unit. Use it for early exploration and defense. Take advantage of the

OL
Plastics X is one of Sweden's leading players in the market for contract manufacturing of vacuum-formed thermoplastic products.

Our production is aimed at all customers regardless of industry, where you as a customer have the opportunity to develop your product with the help of our expertise. We contribute with our knowledge at all stages - from the purchase of materials to the final packaging of the finished product.

5-axis milling machines are used to get the best results when processing details.

Can you give 10 suggestions for how we could get started with carbon reporting that will soon become mandatory in Europe?

1. Appoint a sustainability officer or team: Designate an individual or a group of individuals within your organization to oversee the carbon reporting process. This person or team should be responsible for coordinating efforts, setting goals, and ensuring compliance with mandatory requirements.

2. Conduct a carbon footprint assessment: Evaluate your company's current carbon emissions by conducting a comprehensive greenhouse gas (GHG) inventory. This will help you identify the main sources of emissions and prioritize areas for improvement.

3. Set up a carbon accounting system: Implement a carbon accounting system to consistently measure and track your company's emissions. This will enable you to quantify progress towards reducing your carbon footprint and ensure accurate reporting.

4. Establish emission reduction goals: Set clear and achievable targets for reducing your company's carbon emissions, based on the results of your GHG inventory. These goals should be in line with the mandatory requirements set by the European Union.

5. Develop a carbon reduction strategy: Create a comprehensive strategy outlining the steps your company will take to achieve its emission reduction goals. This may include increasing energy efficiency, adopting renewable energy sources, and investing in carbon offset projects.

6. Implement emission reduction measures: Begin implementing the initiatives outlined in

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AgentGPT Beta 🚀

Assemble, configure, and deploy autonomous AI Agents in your browser.

⬤⬤⬤ AgentGPT   ⬆ Export ⌄

👉 Create an agent by adding a name / goal, and hitting deploy! Try our examples below!

PlatformerGPT 🎮	**TravelGPT** 🌴	**ResearchGPT** 📜
Write some code to make a platformer game.	Plan a detailed trip to Hawaii.	Create a comprehensive report of the Nike company

Web search ⬤

🤖 **Name** | AgentGPT

⭐ **Goal** | Make the world a better place

I▲N CURTIS ✔
@XRarchitect

Recreated #Tetris in #AugmentedReality during my commute on the train to and from work yesterday using #chatgpt4

Total development time: 1 hour ⏱ Here's the breakdown:

54 min: Game Logic (this was a back and forth dialogue in which gpt4 planned out the best approach to take and wrote 100% of the game logic)
6 min: Game Aesthetics (generated a neon grid texture from midjourney and applied to an <a-plane> in the scene)

Översätt tweeten

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AI song featuring fake Drake and Weeknd vocals pulled from streaming services

The song, called Heart on My Sleeve, has been removed from TikTok, Spotify and YouTube for 'infringing content created with generative AI'

Tue 18 Apr 2023 10.37 BST

Grimes Tells Fans To Deepfake Her Music, Will Split 50% Royalties With AI

Apr 24, 2023, 05:15am EDT

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GPT CEO?

Unlocking growth for early stage startups. Venture Capital...
1d · 🌐

We're building a company with GPT4 as CEO for 30 days. Start date: March 18.
This got 2 million views in one day, so at your request, here is your Day 2
progress update:

- -

0. Recap of house rules for new followers:

- I work for GPT4 for 60 minutes a day.
- Target starting capital: 1,000 USD.
- All decisions are made by GPT4 whenever possible, even if it hurts the
company.

1. Main progress achieved yesterday:

- We started building an e-commerce store.
- It chose the brand name Alsthetic Apparel.
- GPT4 writes the prompts that go into Midjourney designs.
- We raised 2,500 USD from investors.
- Our first AI-to-AI t-shirt is ready.

INDEPENDENT

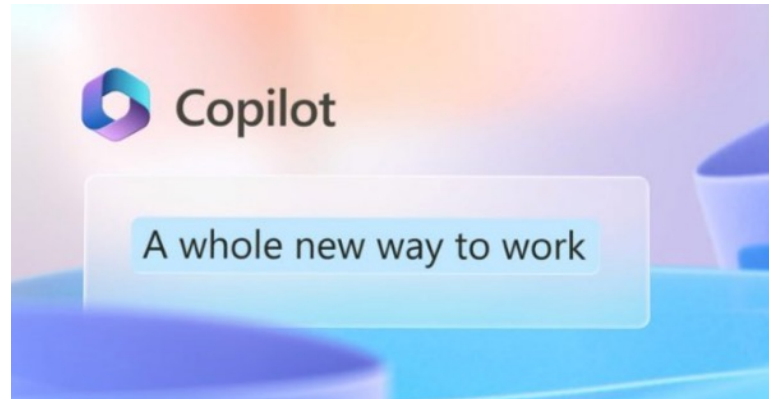NEWS   SPORT   VOICES   CULTURE   LIFESTYLE   TRAVEL   PREMIUM   MORE

Tech

Company that made an AI its chief executive sees stocks climb

China-based NetDragon Websoft says it is the first company in the world to appoint an AI as its CEO

Anthony Cuthbertson · 4 days ago · 💬 Comments

ENHANCED

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A whole new way to work

- **Copilot i Word** skriver, redigerar, sammanfattar och skapar samtidigt som användaren arbetar.

- **Copilot i PowerPoint** förenklar skapandeprocessen genom att förvandla användarens idéer via vanligt språk till en designad presentation.

- **Copilot i Excel** tar del av insikter, hittar korrelationer och skapar professionella datavisualiseringar på nolltid.

- **Copilot i Outlook kan** hjälpa till att effektivisera och hantera inkorgen så att mer av användarens tid kan spenderas på att faktiskt kommunicera.

- **Copilot i Teams** gör möten mer produktiva genom att transkribera i realtid och skapa att göra-listor eller påminnelser utefter vad som sades på mötet.

- **Business Chat** samlar data från dokument, presentationer, e-post, kalender, anteckningar och kontakter för att sammanfatta chattar, skriva e-post, hitta viktiga datum eller till och med skriva en plan baserad på andra projektfiler.

Nya roller…? Prompt Manager? Chief Prompt Officer? AI whisperer?

III. AI Policy

I expect you to use AI (ChatGPT and image generation tools, at a minimum), in this class. In fact, some assignments will require it. Learning to use AI is an emerging skill, and I provide tutorials in Canvas about how to use them. I am happy to meet and help with these tools during office hours or after class.

Be aware of the limits of ChatGPT:

- If you provide minimum effort prompts, you will get low quality results. You will need to refine your prompts in order to get good outcomes. This will take work.

- Don't trust anything it says. If it gives you a number or fact, assume it is wrong unless you either know the answer or can check in with another source. You will be responsible for any errors or omissions provided by the tool. It works best for topics you understand.

- AI is a tool, but one that you need to acknowledge using. Please include a paragraph at the end of any assignment that uses AI explaining what you used the AI for and what prompts you used to get the results. Failure to do so is in violation of academic honesty policies.

- Be thoughtful about when this tool is useful. Don't use it if it isn't appropriate for the case or circumstance.

Kunskapsautomation – en revolution i vardande

Välkommen att medverka i en handlingsinriktad framtidsstudie om
hur AI förändrar informations- och kunskapsarbetet redan idag.

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https://www.kairosfuture.com/se/forskning/projekt/generativ-ai/

Augmenting innovation processes and innovation roles with AI

FUTURE	STRATEGY	ACTION
Research-based foresight	Future-based strategy	Strategy enforcement

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The Kairos Future approach

Capability building

Strategy

Foresight

Thought leadership

Innovation

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Kairos Future's services

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Foresight pays off – but only if it is well integrated into strategy and innovation

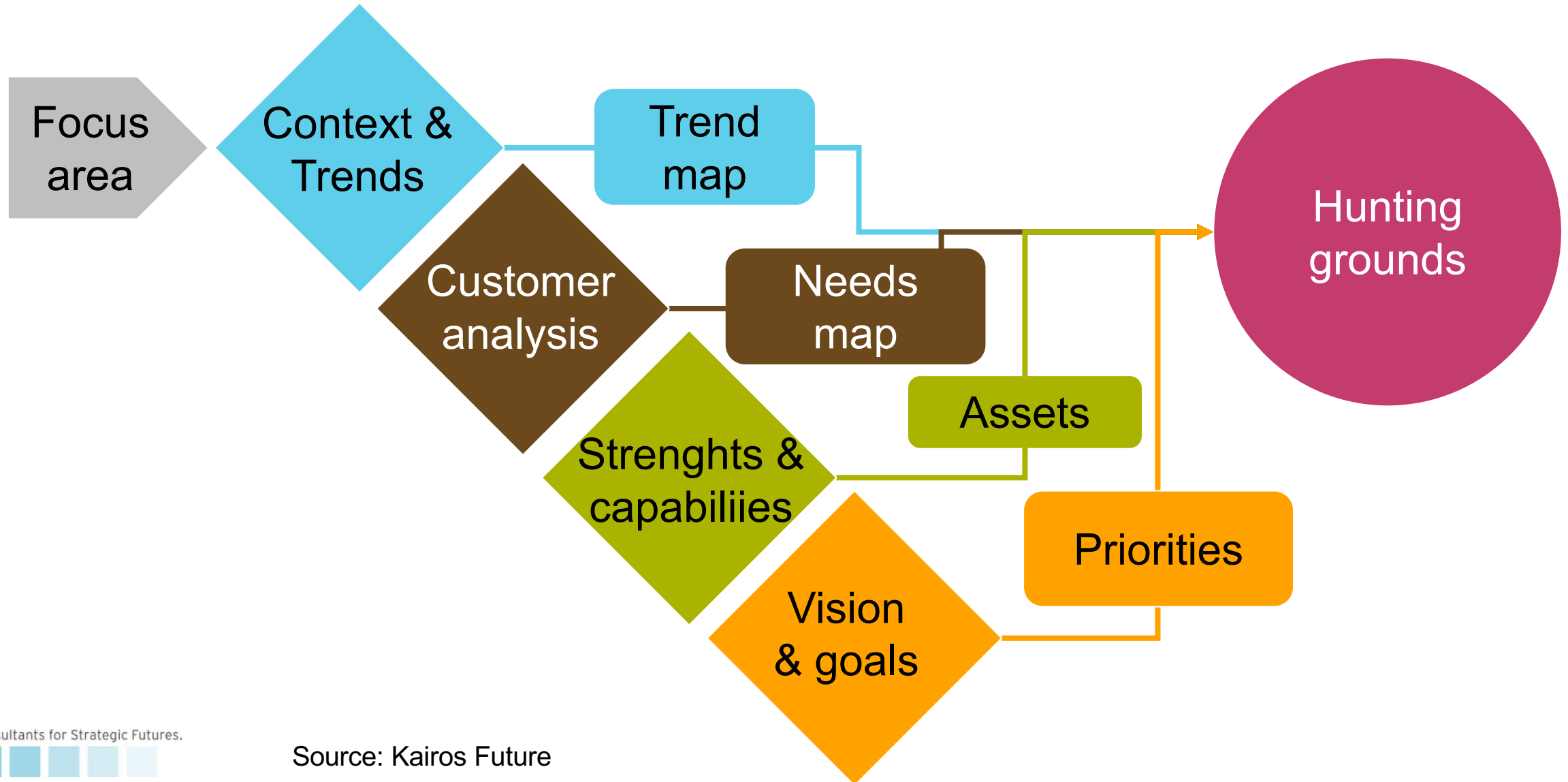Research shows that firms that have build systematic future preparedness practices have…

33%

Better profitability and…

200%

…better market cap growth between 2008 – 2015 than the average.

Yet only 1 in 5 companies attempts to do so.

(Rohrbeck & Kum, 2018)

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Integrating foresight & innovation using Hunting grounds

Focus area

Context & Trends

Trend map

Customer analysis

Needs map

Strenghts & capabiliies

Assets

Vision & goals

Priorities

Hunting grounds

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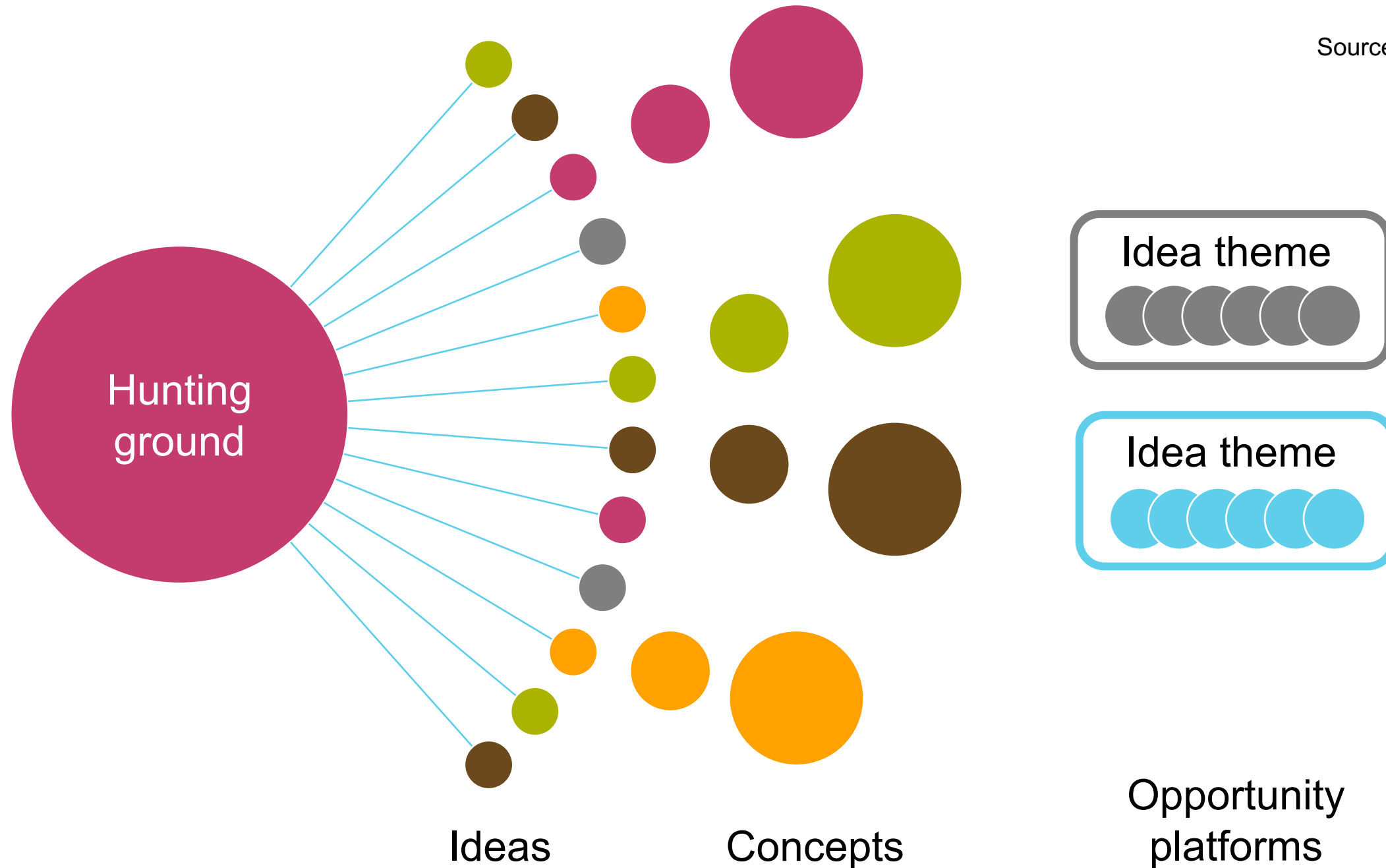
Source: Kairos Future

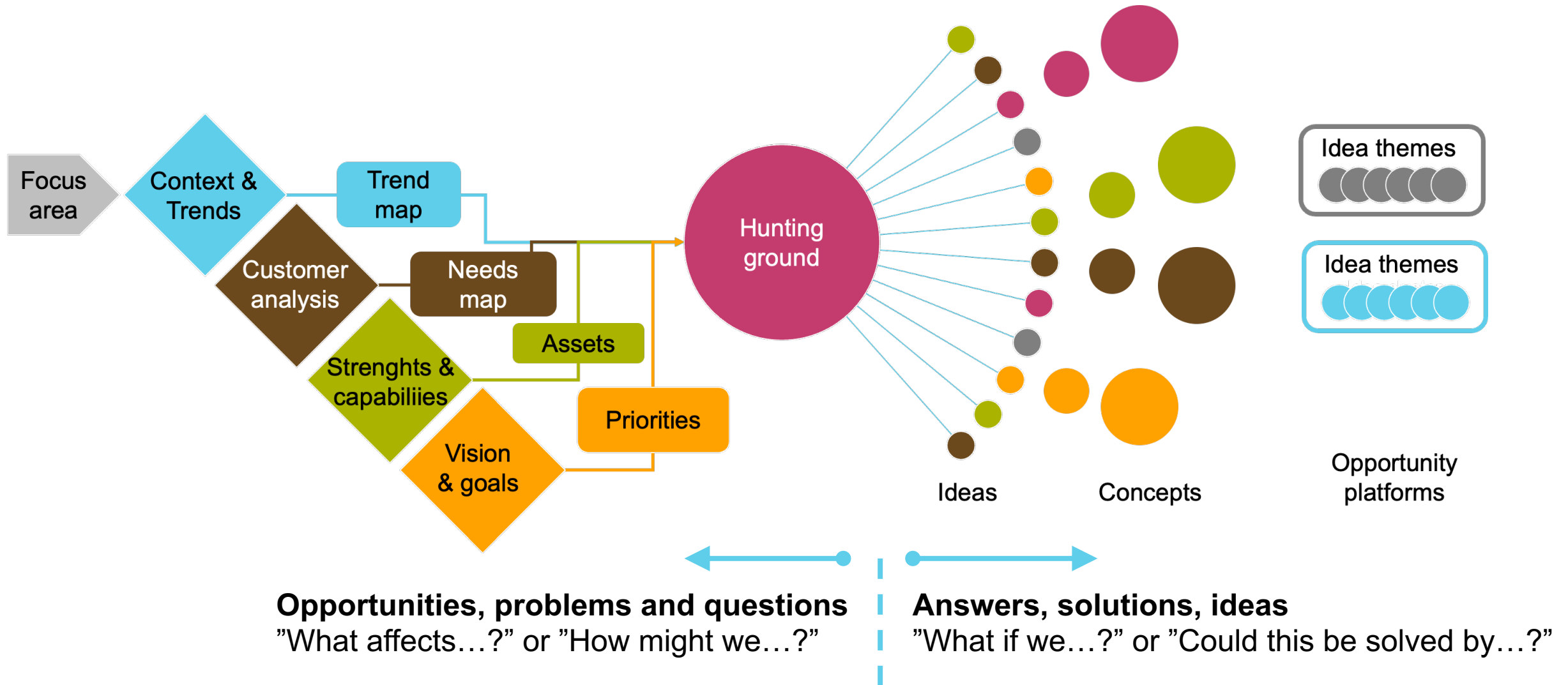KAIROS FUTURE

Hunting ground: Hell Hour

In a world where **parents are getting evermore stressed, commute longer** and **pursue careers** amidst their children's young years, the need to facilitate the **afternoon hell hours** is evident. A window of time where children are picked up at pre-school, dinner is decided on, purchased, and cooked. All while everyone are **tired and hungry**.

In addition, the trend analysis shows that **dinner as a family ritual** are increasingly important and young parents put **keeping the nuclear family intact** and happy as one of the most admirable traits of people around them. Meanwhile, the ambitions to always provide the family with **nutritious and healthy food** are set high.
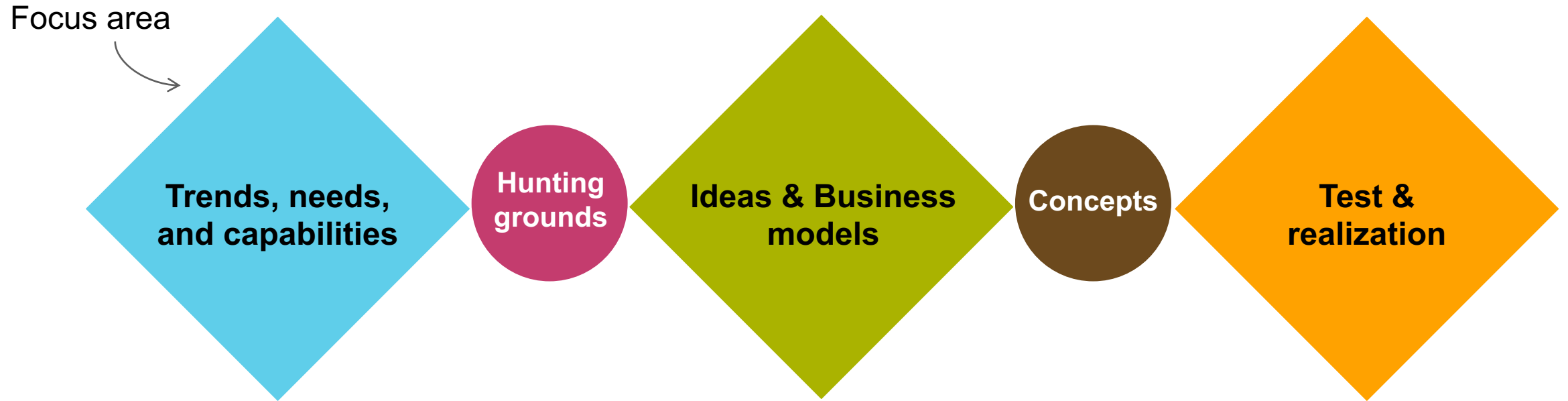
How might we, with our **unique position** in food solutions, create products and services that make Hell hour an **enjoyable time of the day?**

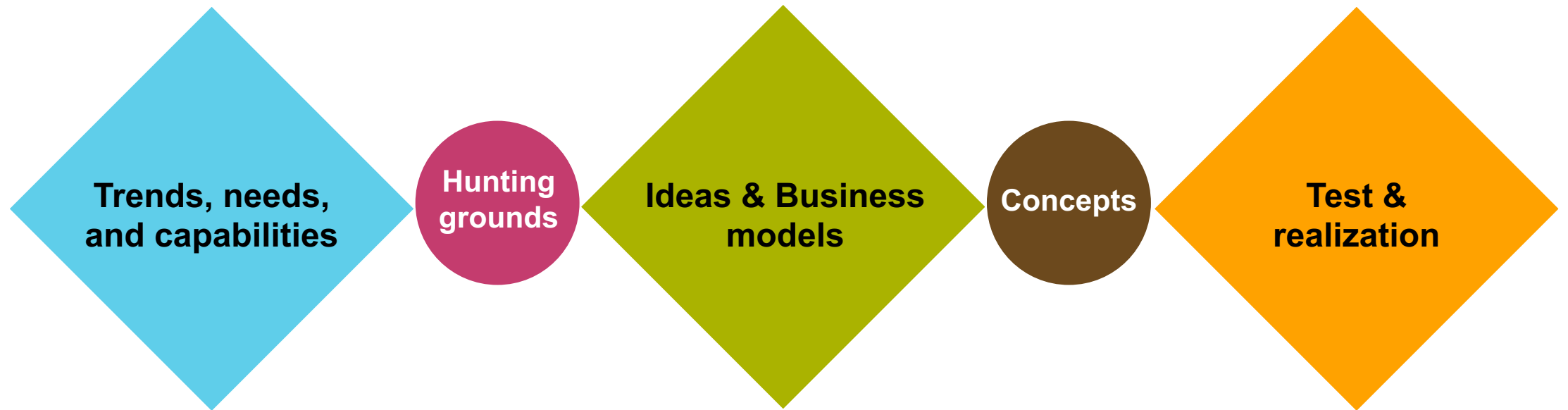Consultants for Strategic Futures.

Source: Kairos Future

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Source: Kairos Future

Hunting ground

Ideas

Concepts

Idea theme

Idea theme

Opportunity platforms

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Source: Kairos Future

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Focus area

Context & Trends

Trend map

Customer analysis

Needs map

Strenghts & capabiliies

Assets

Vision & goals

Priorities

Hunting ground

Ideas

Concepts

Idea themes

Idea themes

Opportunity platforms

Opportunities, problems and questions
"What affects…?" or "How might we…?"

Answers, solutions, ideas
"What if we…?" or "Could this be solved by…?"

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Source: Kairos Future

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Future-driven innovation

Focus area

Trends, needs, and capabilities

Hunting grounds

Ideas & Business models

Concepts

Test & realization

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Source: Kairos Future

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- Benchmark studies
- Meta level market analysis
- Trend scanning

- Ideation?
- Business model suggestions
- AI for a type of "co-creation"
- Patent search

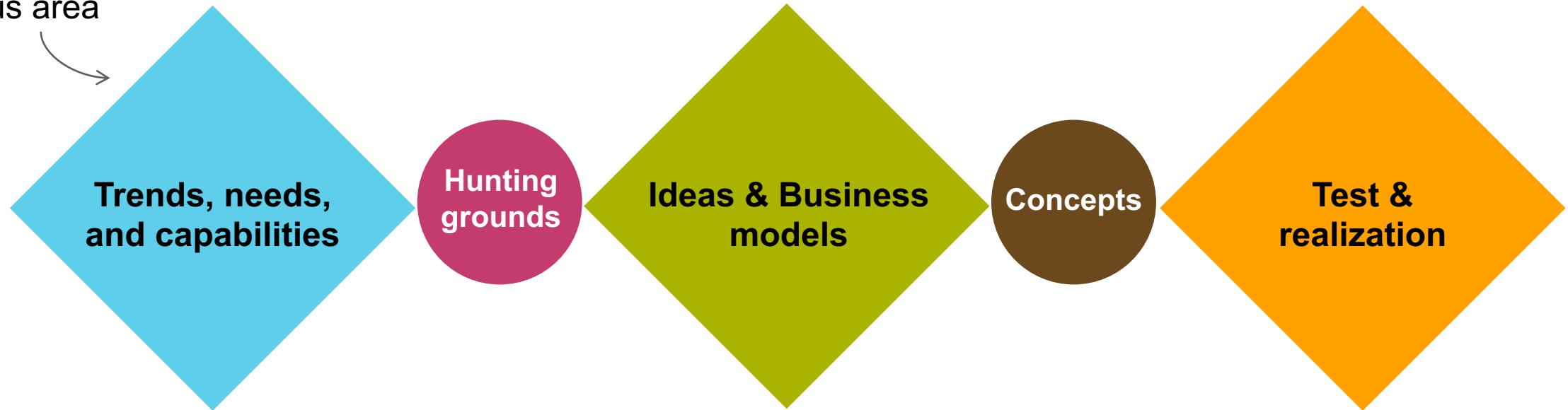- Simulations?
- Prototyping
- "Bollplank" in decisions
- …?

Trends, needs, and capabilities

Hunting grounds

Ideas & Business models

Concepts

Test & realization

Practical process support e.g, workshop documentation

Source: Kairos Future

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Vi hjälper företag och organisationer att förstå och forma framtiden

FUTURE	**STRATEGY**	**ACTION**
Research-based foresight	Future-based strategy	Strategy enforcement
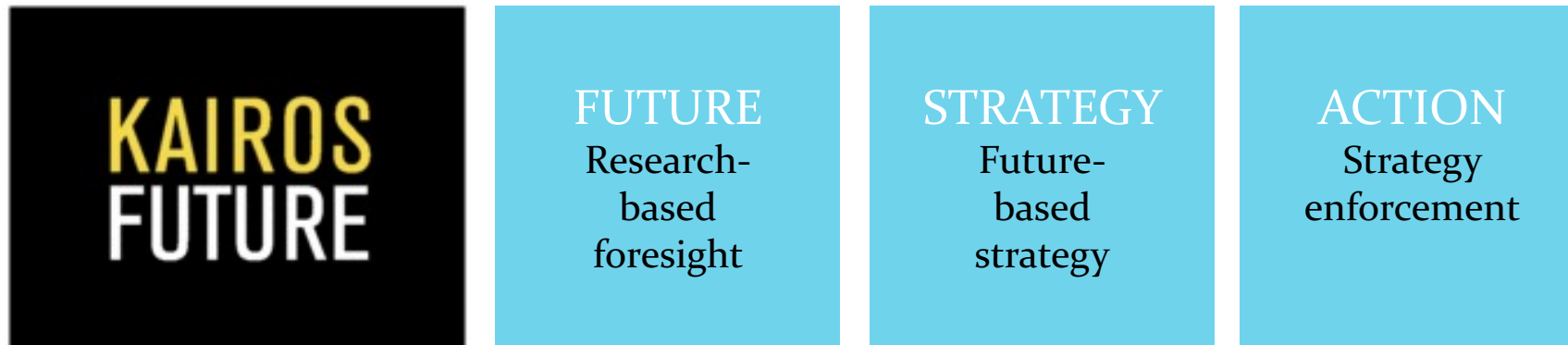
Kairos (καιρός)
är det antika grekiska begreppet för rätt tid eller tid för förändring.