

---

# What Are Agentic Systems?



---

# The Dream of AI Assistants

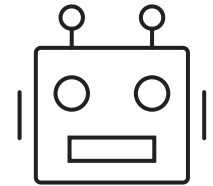
For decades, we've imagined robot servants and AI helpers making our lives easier. Is it everything we expected?

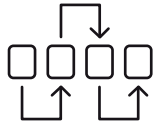


---

# Defining Agentic Systems

A software application which relies centrally on an LLM and accomplishes its tasks without direct human supervision



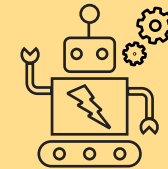


### **Workflows**

Predetermined steps, human-guided process,  
definite completion criteria

### **Autonomous agents**

Autonomous problem-solving, self-evaluation,  
AI determines approach to tasks



---

# Real-World Examples

**Workflows:** chat with documents (RAG), guided content creation

**Agents:** Cursor code generation, autonomous research assistants





---

## Use Cases of Agentic Systems



---

# The Hype vs. Reality

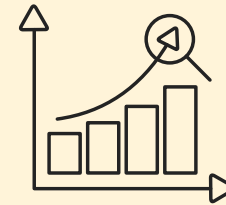
Often people want to build something sophisticated with AI when a simple well-tuned prompt will suffice



---

# The Productivity Potential

Agentic systems can dramatically speed up a variety of tasks when applied thoughtfully







---

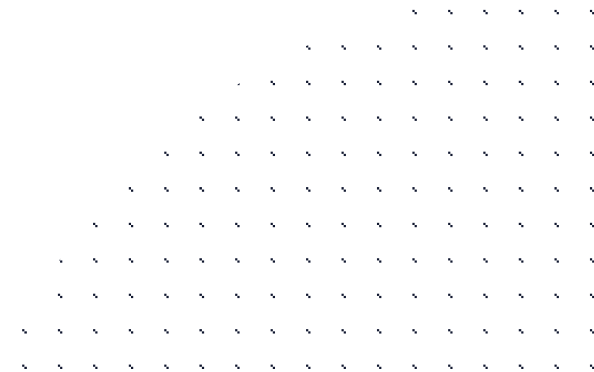
# Do You Need Agents?



Would a single, well-tuned prompt accomplish your task?



Would a newer, stronger model make your app better, or make it obsolete?



---

# Choosing Between Workflows and Agents



# 1

## Task Complexity

For well-defined tasks with predictable steps, use workflows

For open-ended problems, use autonomous agents

# 2

## Predictability vs. Flexibility

If you need consistency, use workflows

If you need adaptability for varying scenarios, use agents

# 3

## Cost/Latency Awareness

Autonomous agents typically have higher latency and cost

The improvement in outcomes must justify this

---

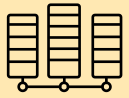
# Real-World Workflows and Agents





---

# Three Real-World Examples



Automated data analysis



In-depth research

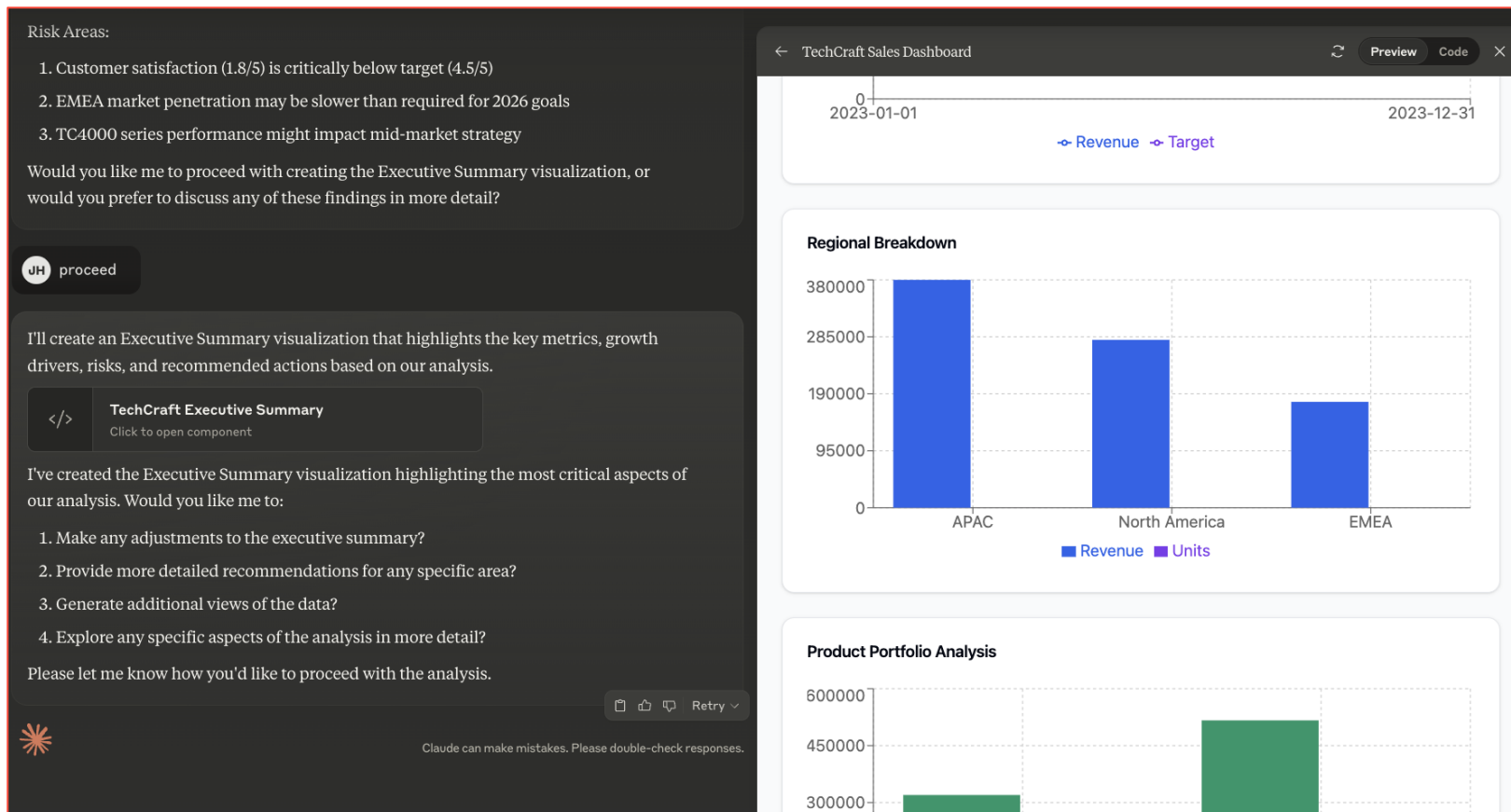


Drop-in remote engineer



# Example 1: Automated Data Analysis

A workflow that takes in data and outputs visualization and analysis



## Example 2: In-depth Research

Breaks research into sub-problems, searches and evaluates independently, and synthesizes results into a report

4.5

Share

Activity 29 Sources

- historical trends
- geopolitics
- a survey of what leading thinkers are saying \*as of 2025\*

I'll gather insights on AI takeoff dynamics in 2025, including predictions on improvement speeds, historical technological trends, geopolitical influences, and the latest perspectives from leading thinkers. I'll provide a detailed analysis based on current research, expert commentary, and geopolitical considerations.

Considering timeframes 29 sources

modalities, and the impact of open source models and specialized hardware.

Searched for expert quotes on GPT-4 progress 2023

The Carnegie Endowment's piece likely discusses AI's rapid advancement. Let's see if it surpasses benchmarks sooner than expected.

Read [carnegieendowment.org](https://carnegieendowment.org)

Holden Karnofsky notes AI's surprising strides in areas like complex math and science, questioning the notion of clear human-robot boundaries. Progress is swift, and practical applications are expanding.

Read [transformernews.ai](https://transformernews.ai)

I'm curious about the shifting AI landscape by 2025. Progress isn't just from scaling models; reasoning enhancements are key. Notably, Anthropic's Claude 3.7 excelled cost-effectively.

Read [astralcodexten.com](https://astralcodexten.com)

Robin Hanson envisions a gradual revolution over decades, while Yudkowsky predicts a rapid rise, spanning hours to years, not decades.

Reading...

Ask anything

Search Deep research

ChatGPT can make mistakes. Check important info.

# Example 3: Drop-In Remote Engineer

Plans, writes, and tests code autonomously, working like a remote engineer

The screenshot displays the Manus AI interface. At the top, the Manus logo is on the left, and a 'Log in' button is on the right. The main heading is 'Customer Form for B2B Gen AI Consulting Firms'. Below this, a text box contains the task: 'We are a tech consulting firm with in - depth research on technologies in the Gen AI field. Please create a potential customer form for us. The target companies are B2B American companies in the development stage before Series B that need AI technology empowerment. List at least 15 companies, clearly stating their contact information, company business introductions, addresses and other specific details. Make a dashboard.'

The Manus AI agent's response is shown below the task box. It states: 'I'll help you create a potential customer form and dashboard for B2B American companies in the pre-Series B development stage that need AI technology empowerment. I'll research and compile a list of at least 15 companies with their contact information, business introductions, addresses, and other specific details. Let me get started on this right away.'

Below the response, there are several status indicators: 'Knowledge recalled(1)', 'Suggested new knowledge', and 'Connected to datasource(2)'. A section titled 'Research pre-Series B AI technology companies' is expanded, showing a list of actions: 'Starting to research pre-Series B American B2B companies that need AI technology empowerment.', 'Executing command mkdir -p ai\_companies\_research && cd ai\_companies\_research && touch todo.md', 'Researching pre-Series B American B2B companies that need AI technology empowerment.', 'Creating file ai\_companies\_research/todo.md', 'Researching pre-Series B American B2B companies that need AI technology empowerment.', 'Searching pre-Series B American B2B AI companies startups', 'Researching pre-Series B American B2B AI companies from search results.', 'Browsing https://explodingtopics.com/blog/ai-startups', 'Browsing information about AI startups from Exploding Topics to identify potential pre-Series B American B2B companies.', and 'Scrolling down'.

At the bottom of the interface, a message states 'Manus session replay completed.' with a 'Watch again' button.

On the right side, there is a 'Manus's Computer' window. It shows a terminal window with the following text: 'Manus is using Terminal', 'Terminating process dashboard\_server', 'dashboard\_server', 'ubuntu@sandbox:~\$ cd /home/ubuntu && cd /home/ubuntu/ai\_companies\_research/dashboard && python3 -m http.server 8000', 'Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...', and 'Session terminated, killing shell...'. Below the terminal window, there is a progress bar and a button labeled 'Provide public access URL to user'.



---

# Agentic Techniques



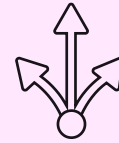
Chaining



JSON Mode



Orchestration



Evaluative Routing

---

# Designing Agentic Systems



---

# Agent Architectures

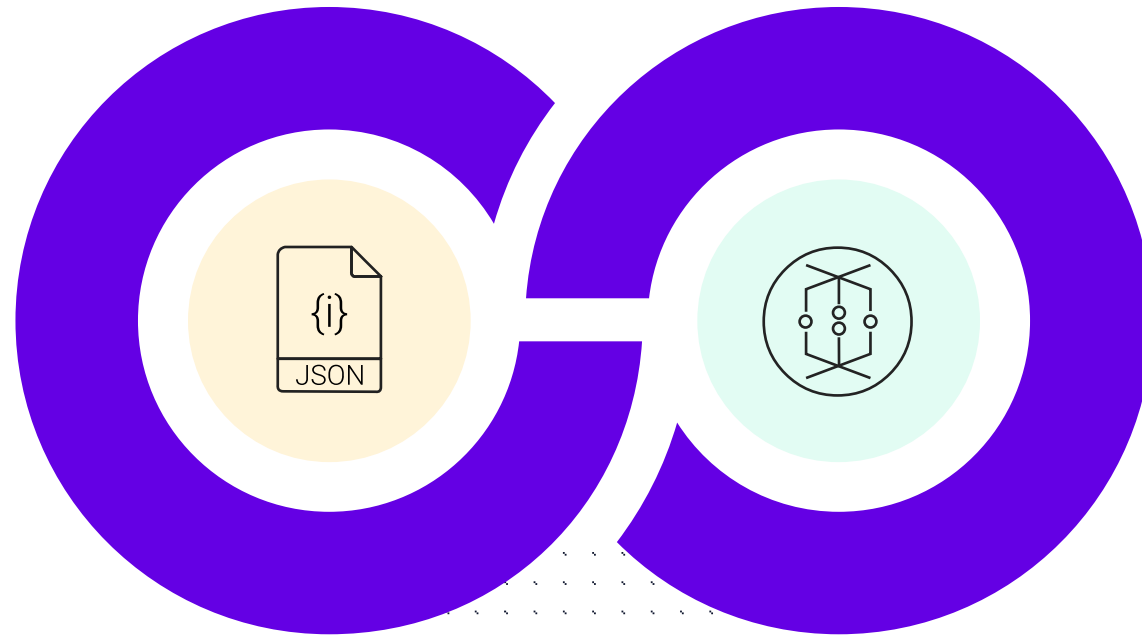
Combining multiple patterns in sound ways allows you to sensibly scale up agentic systems



---

# JSON Mode + Orchestration Chains

Structure outputs as  
JSON arrays of tasks



Process multiple  
subtasks, execute  
multiple workflows in  
parallel, then fuse  
together and repeat

---

# Orchestration + Evaluation



Agent gathers  
information for a variety  
of subtasks

For each subtask's  
answer, evaluative  
routing recursively  
improves the answer  
until done



---

# Designing Your Own Systems

Start simple and layer in complexity as needed. Begin with workflows and gradually increase autonomy where it provides the most ROI.

