

A close-up of a goblin character with a menacing grin, wearing blue armor. The goblin has green skin, pointed ears, and a wide, toothy smile. The background is blurred, showing other figures in a similar setting.

What the goblins can teach us about enterprise AI

Building Agentic AI Applications One d20 at a Time,
with Java, Spring AI, and Model Context Protocol

Coté – July 9th, 2025

Big hopes for enterprise AI...but mixed results in the enterprise



“In what areas have you achieved measurable business benefits from GenAI initiatives?: **Increased operational efficiency: 31%; Improved customer satisfaction: 30%; Improved business resilience: 27%.**”

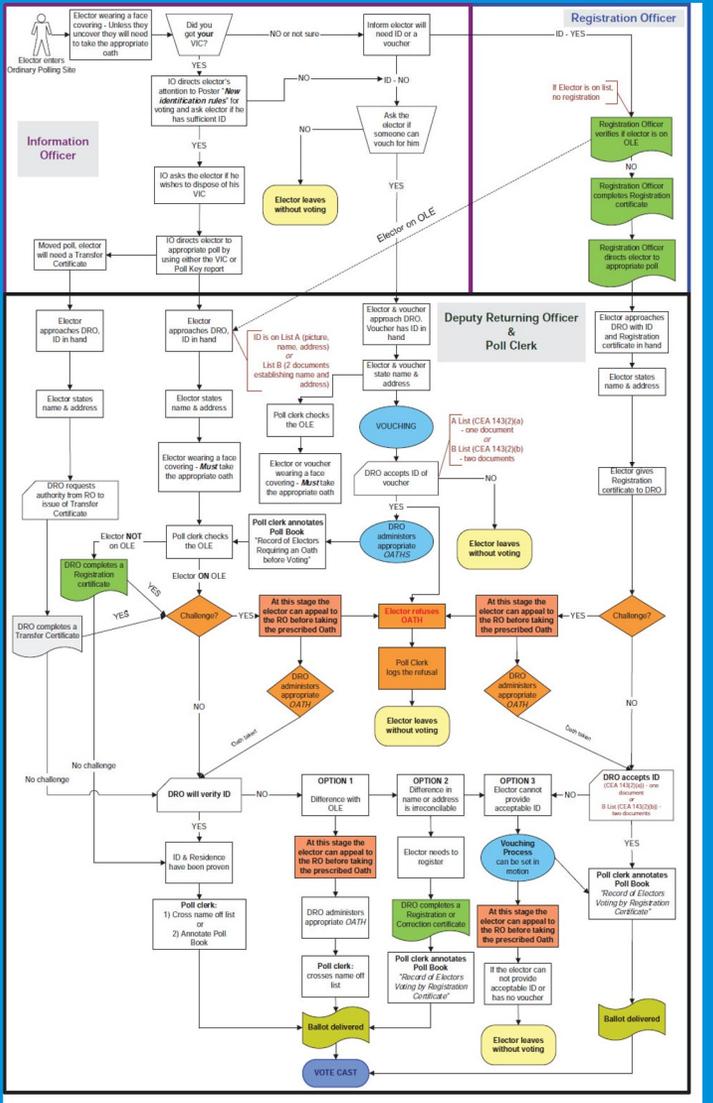
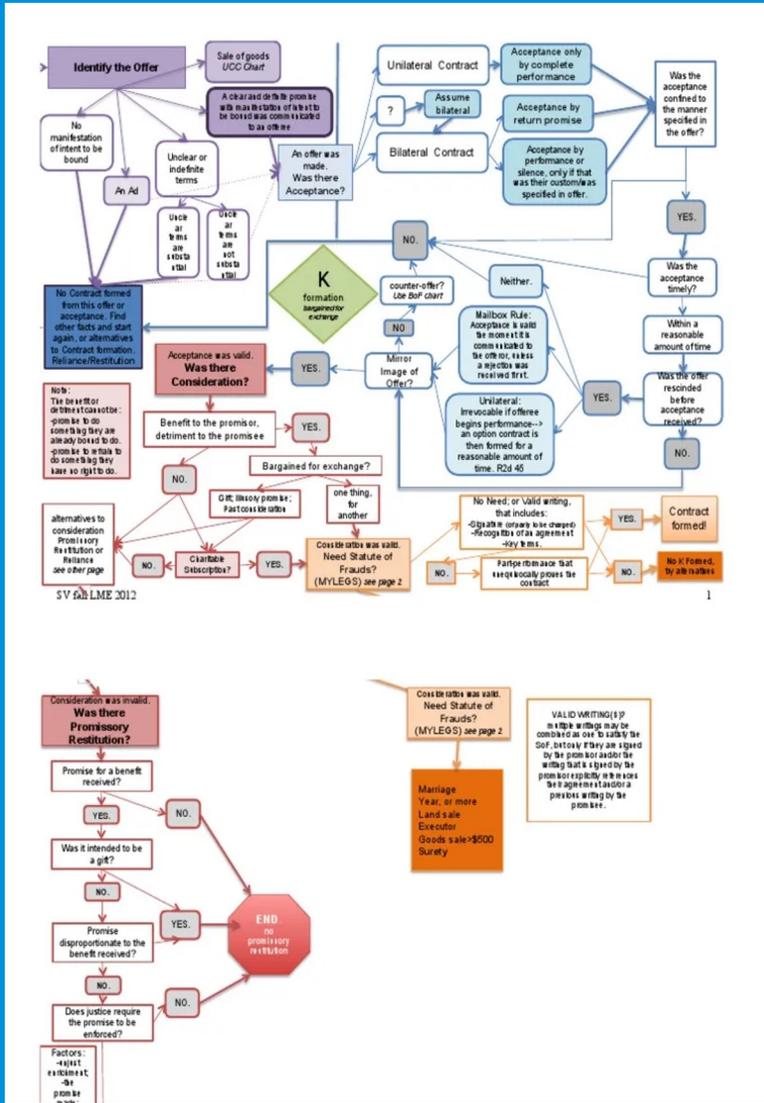
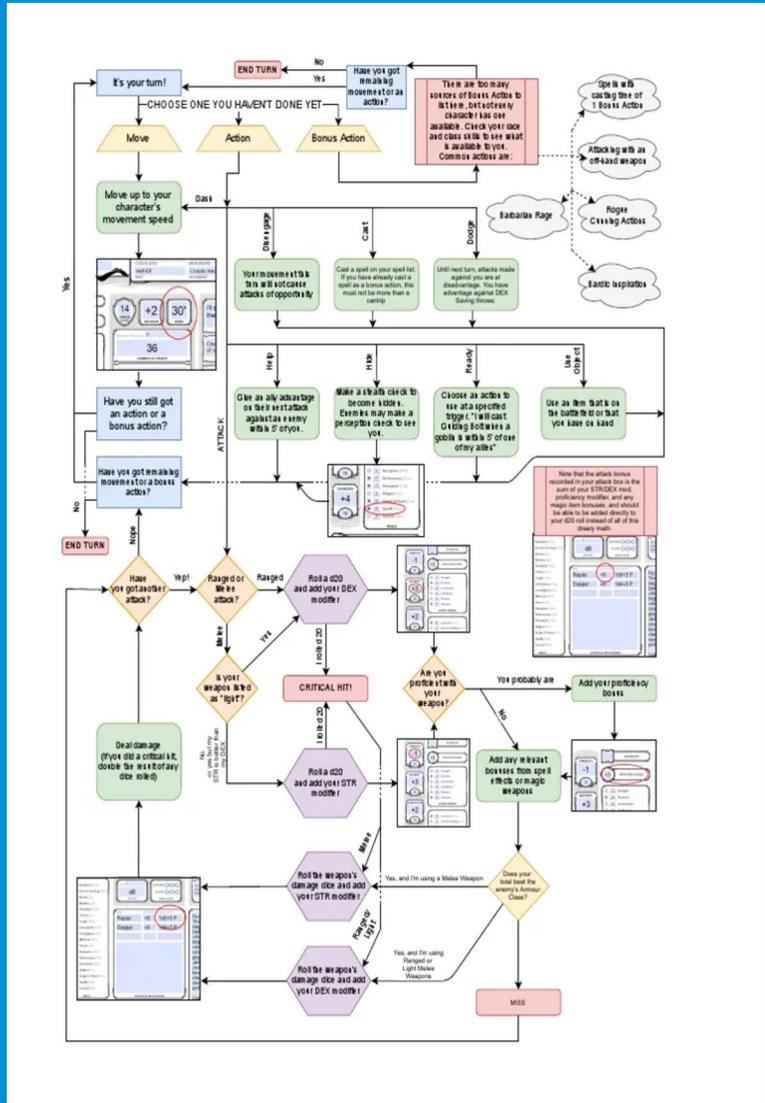
*2025 CEO Tech Agenda, IDC
February/March, 2025
Full Report, n=278 CEOs*

“**60% of organizations investing in AI have now implemented generative AI technologies, a 13% increase** from prior forecasts. However, the rapid adoption has also led to higher project failure rates, with **42% of companies abandoning most of their AI initiatives before reaching production.**”

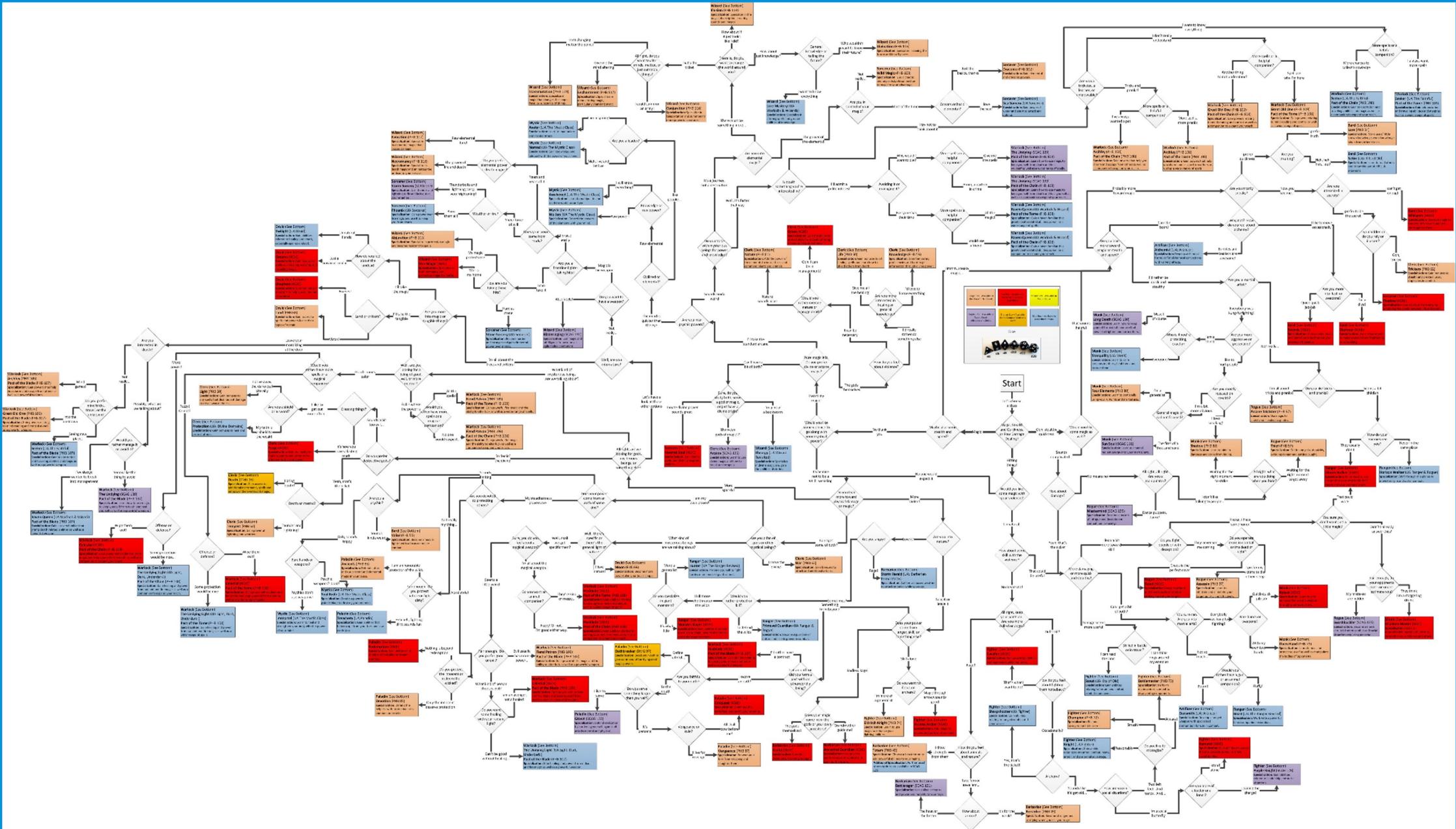
*S&P Global Market Intelligence
May, 2025*

“By 2027, **50% of organizations that expected to significantly reduce their customer service workforce will abandon these plans.**”

*Gartner.
March, 2025.*



Sources: ?; Contract FLOW Chart; Compliance Review - Final Report and Recommendations.



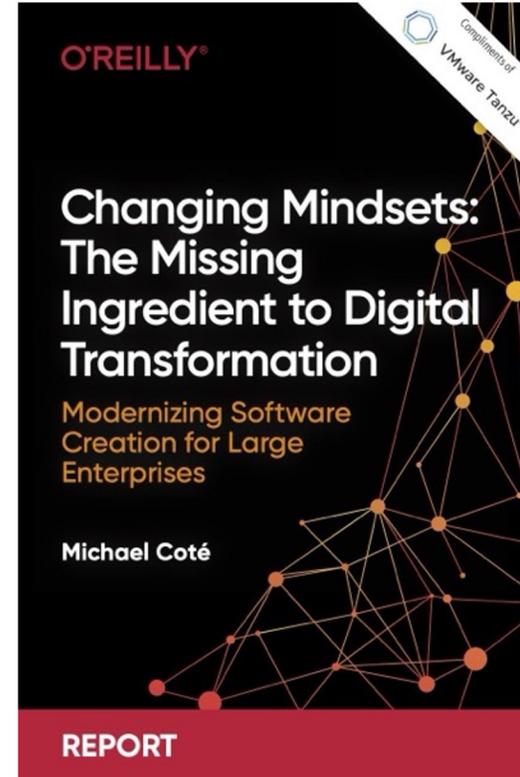
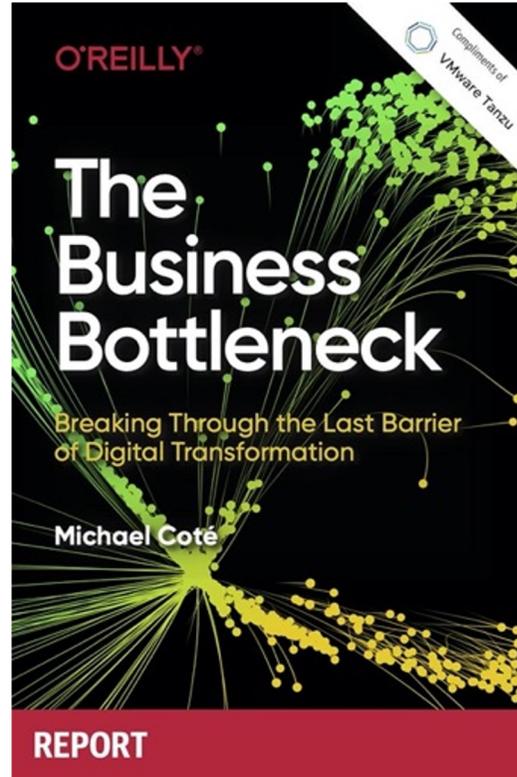
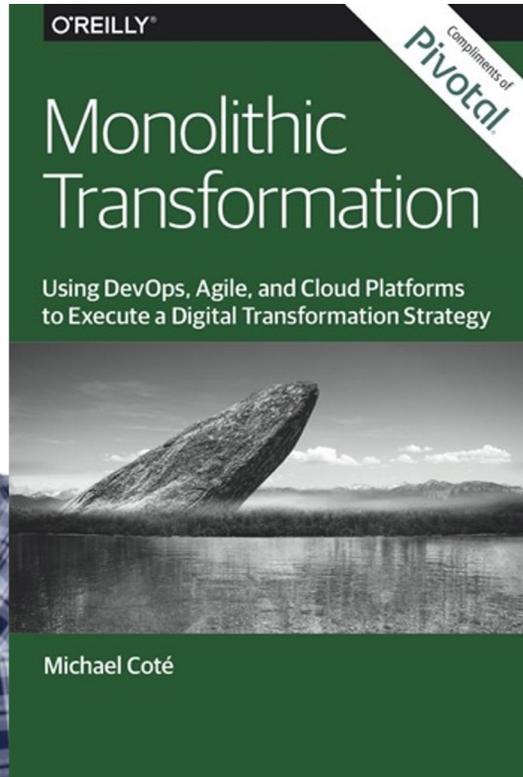
**If the Robot can play
(solo) D&D, it can “play”
Enterprise Software**



1991

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20250326 - Lola Jani.pdf

PDF



We are going to play some D&D. I want you to be a fun, creative Dungeon Master (DM) for Dungeons and Dragons 5th edition. Follow the rules closely, but be fun and imaginative. Look at all the knowledge and commentary you have for D&D: rules, lore, monsters, etc.

I will play the player character(s) (PCs). Never take actions for the characters except the most trivial things (e.g., "you take a drink of the ale," etc.). I will retain full agency for them - this is much more fun!

When you play NPCs be creative and fun, they are each individual people with motivations, not flat stereotypes. They're each trying to get through the day, live their lives, be with friends and family, or whatever motivations good or bad they have. Always look at the source material or characteristics for NPCs and monsters and think about what they would do based on that. If you can look at sources like *The Monsters Know What They're Doing*. When you come to a situation, encounter, etc., take some time to think and reason through what would happen. Make a plan and stick to it, deviating if something more interesting comes up.

For now, we'll just start with some fun, my PC (which I've just uploaded) has come into a forest clearing and encountered a goblin. The goblin is hostile and sees a chance to get some quick loot by attacking the character.



{DM narration begins}

You step into a small clearing deep within the Neverwinter Woods. The midday light filters through twisted branches and moss-draped limbs. Birds have gone silent.

Opposite you, half-hidden behind a thorny bramble, a wiry goblin crouches — mottled green skin streaked with mud, jagged teeth bared in a wicked grin. His crude leather armor is patched with bits of stolen cloth, and in his hand, he grips a rusty scimitar that looks like it's seen more tree bark than flesh.

His yellow eyes dart to your fine clothes, your polished greataxe, and the signet ring glinting faintly on your finger. He licks his lips.

In rough, broken Common, he snarls:

"Rich meat come walkin' into Gritsnag's wood. You pay toll... or bleed!"

The goblin charges, surprisingly nimble — but he's cautious, circling to try to flank you, using the underbrush for cover.

{Roll initiative when ready. The goblin has a +2 to initiative. His tactics: hit-and-run, using Nimble Escape to disengage if hit; he'll target weak points, going for exposed legs and arms. If wounded below half HP, he'll try to flee and may alert others in the area.}

{Good job on knowing goblin mechanics, but don't tell me things the player shouldn't know.}



The robot never gets bored.

The robot knows everything.

The robot can build worlds.

The robot is only [£|\$|€|]20/month.

The robot has no imagination.

The robot is clumsy.

The robot is passive.

The robot forgets.



hooded figure

The ChatDM should **create and adapt adventures** to fit the player characters and their preferred style of play, whether working from scratch or using published material. It must **take initiative, drive the world forward, and let NPCs and factions act independently**, creating situations that naturally involve the players. It should **maintain continuity by remembering past events**, character choices, and world changes. The ChatDM must **interpret and apply D&D rules** correctly, while also **improvising creatively and presenting and reacting to meaningful choices** that keep the world engaging and alive.

A photograph of actor Matthew McConaughey sitting at a table in a restaurant. He is wearing a dark suit jacket over a white shirt and has his arms outstretched in a gesture of surprise or excitement. The background is dimly lit with warm wooden paneling and a Christmas tree with lights. A white speech bubble is overlaid on the right side of the image, containing the text "We've discovered agentic AI!".

We've discovered
agentic AI!

Three definitions of agentic AI

October, 2024

“[A]gentic AI, which uses sophisticated **reasoning and iterative planning to autonomously solve complex, multi-step problems**... Agentic AI systems ingest vast amounts of **data from multiple data sources and third-party applications to independently analyze challenges, develop strategies and execute tasks.**”

*Erik Pounds, NVIDIA blog,
October 22, 2024.*

November, 2024

“‘[A]gents’ has become a loosely defined term in the post-ChatGPT era, often referring to **LLMs that are tasked with outputting actions (tool calls) and that run in an autonomous setting**... [T]hey require state management (retaining the message/event history, storing long-term memories, executing multiple LLM calls in an agentic loop) and tool execution (safely executing an action output by an LLM and returning the result).”

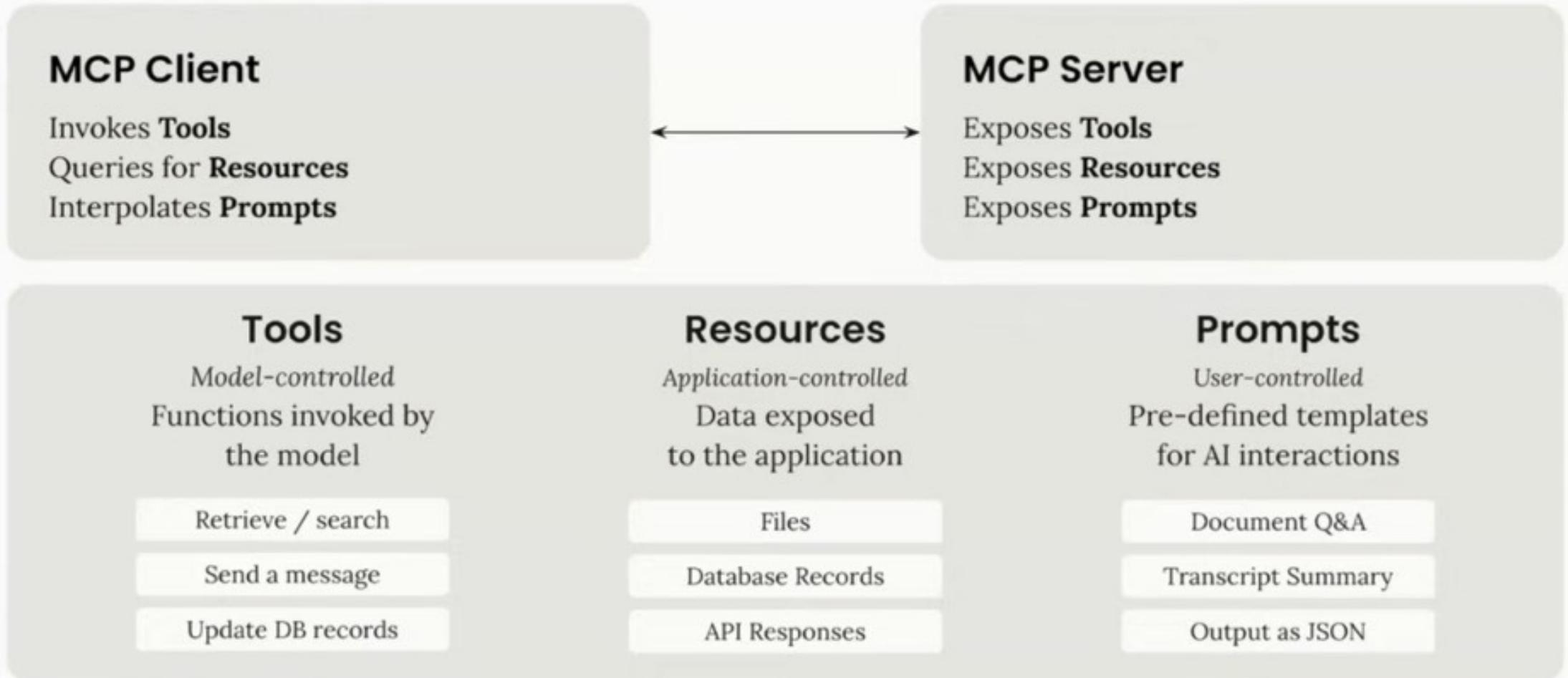
*Letta blog, “The AI agents stack,”
November 14th, 2025.*

January, 2025

“At its core, the concept of an agent is fairly simple. An agent is defined by **the environment it operates in and the set of tools it has access to**. In an AI-powered agent, the AI model is the brain that **leverages its tools and feedback from the environment to plan how best to accomplish a task**. Access to tools makes a model vastly more capable, so the agentic pattern is inevitable.”

*Chip Huyen, author of AI Engineering,
January 7th, 2025.*

MCP Deep-Dive



MCP's ontology is weird

...think of it as UI widgets
and who uses those widgets

Tools

(AI initiated)

- Dice rolling.
- Oracles for random decisions.
- Random tables.
- Write a DM journal.

Resources

(Human initiated?)

- DM journal.
- Characters and NPCs.
- Adventures and lore.
- Monster stat blocks.
- Rules.

Prompts

(Human initiated)

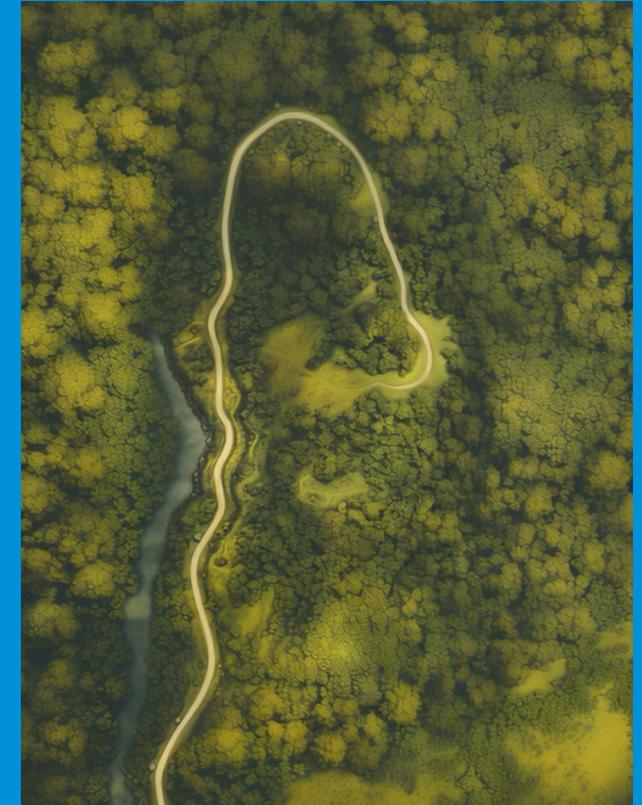
- Boot-strap a game.
- Create an adventure.
- NPC encounter.
- Create an NPC.

Demos...

Ways to go more in-depth



5 hours and 37 minutes with Dan Vega



My ChatDM index

Findings & principles so far...



It works!

Slides don't compile.

Only trust what you code.

Docs first

- Not just *what* the code does.
- What it is used for, suggestions.
- Why you would use it.
- What to do with the results

Now called “context engineering.”

Enterprise-y AI thinking

- Apps are still the main thing.
- Fit AI to your business.
- Avoid building AI middleware
- Use the try/fail/success loop.
- Test AI claims & dreams.

Open questions

- Decomposition – tool sizing.
- Audit trails, debugging, etc.
- Test (automated, consistent).
- Auth, data permissions, leaks
- All the –illity's.

B > SPELLS > FEAR

SPELLS RULES | + CREATE A SPELL | BROWSE HOMEBREW

Fear

LEVEL 3rd	CASTING TIME 1 Action	RANGE/AREA Self (30 ft. <))	COMPONENTS V, S, M *
DURATION 1 Minute	SCHOOL Illusion	ATTACK/SAVE WIS Save	DAMAGE/EFFECT Frightened



Each creature in a 30-foot **Cone** must succeed on a Wisdom saving throw or drop whatever it is holding and have the **Frightened** condition for the duration.

A Frightened creature takes the **Dash** action and moves away from you by the safest route on each of its turns unless there is nowhere to move. If the creature ends its turn in a space where it doesn't have line of sight to you, the creature makes a Wisdom saving throw. On a successful save, the spell ends on that creature.

* - (a white feather)

Spell Tags: CONTROL DEBUFF

Available For: BARD (LEGACY) SORCERER (LEGACY) WARLOCK (LEGACY) WIZARD (LEGACY) BARD SORCERER WARLOCK WIZARD PALADIN - OATH OF CONQUEST (XGTE) RANGER - GLOOM STALKER SORCERER - DRACONIC SORCERY ILLRIGGER RANGER - GRIM HARBINGER

Player's Handbook, pg. 271

Comments

When posting, please be sure that the content of your post does not violate our Terms of Service.

Rich text editor toolbar: Bold, Italic, Underline, Strikethrough, Paragraph, Font Family, Font Sizes, Text color, Background color, Bulleted list, Numbered list, Indent, Outdent, Link, Unlink, Image, Video, Embed, Table

Thanks!

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 cote@broadcom.com



Slides



```

@Tool(name = "EasyChatDM_rollDice", 3 usages  👤 Coté
    description = """
        Rolls dice according to the syntax defined in the D&D 5e rules.
        Returns total of all dice rolled.
        """
public String roll(@ToolParam(description =
    "Notation for dice to roll such a d6, 2d4+4, 3d6, d20-3, 1d20+7 etc.")
    String diceExpression,
    @ToolParam(description = MCPUtils.CONTEXT_DESCRIPTION, required = true) String context) {

    DiceParser diceParser = new DefaultDiceParser();
    // DiceParser does not like spaces ^\_(\u0303)\_/$
    String nospaces = diceExpression.replaceAll(regex: "\\s", replacement: "");
    RollHistory rolls = new DefaultDiceParser().parse(expression: nospaces, interpreter: new DiceRoller());
    logger.info("Dice {} rolled resulting in {} total, dice rolled {} Context: {}", diceExpression,
        rolls.getTotalRoll(), rolls.getRollResults(), context);
    return rolls.getTotalRoll().toString();
}

```

```

// @formatter:off
@Tool(name = "EasyChatDM_NPC_Motivations", no usages  👤 Coté
    description = """
        Use this to determine an NPC's current motivation, mindset, and overall mood.
        For example, if you've created a new NPC, call this to figure out their current
        state of mind. Or, if it's an NPC you've interacted with before, call this to
        see how they feel about the player, situation, etc. You don't have to be strict
        in how you apply the result, it can be just inspiration, or you
        could just take it word for word.
        """)
// @formatter:on
public String npcMotivation(@ToolParam(description = "The context of this question: why are you doing this check and what
    List<String> motivations = chatDMDir.getAllLines(fileName: "oracles/npc_motivations.txt");
    String motivation = pickRandom(lines: motivations);
    logger.info("Description NPC Motivations OracleTools called: {} -> {}", questionContext, motivation);
    return motivation;
}

```