

Making Your APIs AI-Ready

The New Challenge

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← eBooks | Preparing your APIs for AI Agents

API Strategy

Preparing your APIs for AI Agents

A strategic guide for architects, developers, platform owners, and digital transformation leaders preparing for a machine-driven API future.

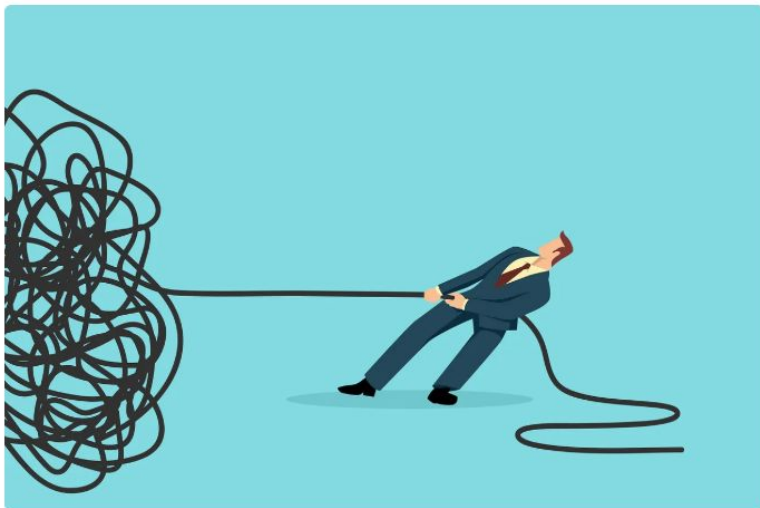


Mike Amundsen, Internationally recognized API expert and author

[About author >](#)



<https://treble.com/ebooks/preparing-your-apis-for-ai-agents>



Correctness Isn't Competence

AI-generated code risks becoming a liability in production unless we demand efficiency and quality.

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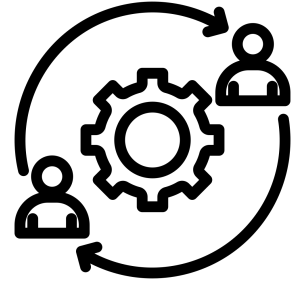
The Growing Medium for API Ecosystems

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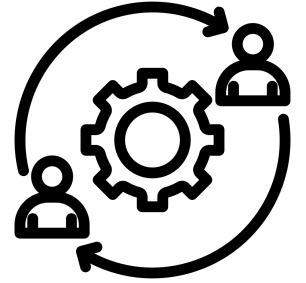
Preparing for the future?

- LLMs are everywhere
- GenAI is the future
- Will my APIs still work?
- Do I need to start all over again?



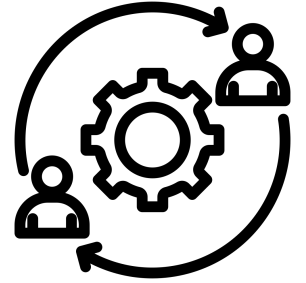
What you can do now

- GenAi is not “coming for you...”
- But you do need to prepare
- There are five shifts to face



The Five Shifts

- From Interfaces to Intentions
- Make Context Machine-Readable
- Standardize Interactions
- Enable Discovery Through Signals
- Observe, Adapt, Iterate



Shift 1 – From Interfaces to Intentions

“We must design for the way users behave, not for how we would wish them to behave.”



Donald Norman

Board member NN/g

Shift 1 – Why This Matters

- Machines don't “explore” like humans
 - they don't poke around in the UI
- Endpoints currently reveal *how* to act but not *why*
- Meaningful labels and affordances can make intent explicit
- Semantic clarity helps agents choose the right actions



Donald Norman

Board member NN/g

Shift 1 – What You Can Do Now

- Rename endpoints to reflect *intent* (not implementation)
 - `/user [PUT] → /updateUser [PUT]`
- Add state-transition descriptions (draft → submitted)
 - include ` .. `
- Use affordance models (ALPS, TypeSpec, Smithy)
 - machine-readable documentation!



Donald Norman
Board member NN/g

***Machine consumers don't need UI
they need meaning.***



Donald Norman

Board member NN/g

Shift 2 – Make Context Machine-Readable

“The better we get at getting better, the faster we will get better.”



Douglas Engelbart

Human-Computer Interaction Pioneer

Shift 2 – Why This Matters

- Context is critical for autonomous decisions
 - humans carry quite a bit of context
- Machines must know ownership, constraints, policies
 - machines carry zero context; it must be supplied
- Even well-structured APIs are opaque without metadata
 - endpoints are not enough
- More context = better reasoning and safer automation



Douglas Engelbart
Human-Computer Interaction Pioneer

Shift 2 – What You Can Do Now

- Add metadata endpoints (ownership, versioning, terms of use)
- Provide capability statements in machine-readable form
 - “Use this API to approve the contract”
- Declare domain affiliations (banking, commerce, healthcare)
 - BIAN, ACORD, FIHR, ec.



Douglas Engelbart
Human-Computer Interaction Pioneer

Metadata is the new interface.



Douglas Engelbart
Human-Computer Interaction Pioneer

Shift 3 – Standardize Interactions

“A good architecture is not created in a vacuum.”



Roy Fielding

Co-Author of HTTP & Creator of REST

Shift 3 – Why This Matters

- Agents rely on predictability to function autonomously
 - have they seen this pattern before?
- Every inconsistency adds cognitive load and risk of failure
 - **id, Id, ID**
- Consistent interaction patterns reduce brittle workarounds
 - Don't get to fancy
- Predictability enables reuse of automation strategies



Roy Fielding

Co-Author of HTTP & Creator of REST

Shift 3 – What You Can Do Now

- Use uniform error schemas (RFC 7807 Problem Details)
- Define timeouts, retries, and fallback patterns clearly
- Apply consistent conventions for pagination and state transitions
- Prefer idempotent operations (e.g., PUT over POST)



Roy Fielding

Co-Author of HTTP & Creator of REST

Predictability is the foundation of autonomy



Roy Fielding

Co-Author of HTTP & Creator of REST

Shift 4 – Enable Discovery Through Ecosystem Signals

“Everything is deeply intertwined.”



Ted Nelson

Inventor of Hypertext

Shift 4 – Why This Matters

- Machines can't browse portals or read changelogs
- API docs alone may not be parsed correctly by LLMs
- APIs must self-describe and signal capabilities
- Registries and hypermedia links enable reliable navigation



Ted Nelson

Inventor of Hypertext

Shift 4 – What You Can Do Now

- Register APIs in searchable catalogs
 - Postman, SwaggerHub, MCP Registries, etc
- Use consistent semantic tags and domain descriptions
- Add hypermedia links (home, collection, item, update)
- Support progressive disclosure through linked resources



Ted Nelson
Inventor of Hypertext

If they can't find it, they can't use it.



Ted Nelson
Inventor of Hypertext

Shift 5 – Observe, Adapt, and Iterate

“Each pattern is a solution to a problem in a context.”



Christopher Alexander

Architect & Author of 'A Pattern Language

Shift 5 – Why This Matters

- Machine usage evolves over time
- Many bots use greedy algorithms (optimize for local context)
- Failures and retries reveal friction points and gaps
- Observability provides direct feedback from machine behavior



Christopher Alexander

Architect & Author of 'A Pattern Language'

Shift 5 – What You Can Do Now

- Set up telemetry focused on agent usage
- Monitor errors, retries, and incomplete workflows
- Identify repeated friction points as improvement signals
- Continuously evolve APIs in response to observed patterns



Christopher Alexander

Architect & Author of 'A Pattern Language'

Machine usage is not static; it evolves.



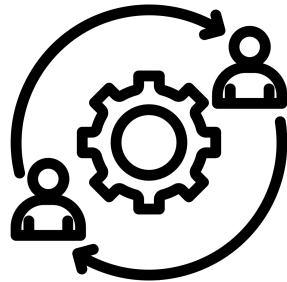
Christopher Alexander

Architect & Author of 'A Pattern Language'

And So ...

Beyond Interfaces, Toward Intelligence

- Think like a systems architect, not just a UI designer
- Machines need semantic labels, affordances, and patterns
- APIs must grow with feedback and adaptation
- Future ecosystems will be machine-to-machine as much as human-to-machine



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