I am sharing a short 2 page summary of my view on an emerging technology that we all need to start tracking closely: the rise of agentic AI software development.

Software development is one of the best use cases for Generative AI, and the new generation of tools can help experienced developers complete software engineering tasks which previously took weeks/months in hours.

This is a dramatic change that we need to begin taking into account now.

Charles

=====

**AI-enabled coding assistants are poised to dramatically decrease the cost of custom software development. VA must take immediate action to prepare for this shift.**

March 2025

A new generation of AI-enabled software development tools are enabling very small teams of developers to create and modify custom software in a matter of days. Previous assumptions about how much money, time, and management overhead are required to translate user needs into written software are no longer valid. The cost of developing custom software is poised to dramatically decrease in the next 2-5 years.

To take advantage of this shift, VA must urgently update our software development strategy.

**Implications**

1. The cost of custom software development contracts should begin decreasing immediately, and VA should view any trend to the contrary with extreme skepticism.
2. The importance of internal VA FTE technical talent will rise: ROI on empowered, highly skilled technical FTE is already high at VA, and will grow higher. It is fully feasible that small teams of empowered VA FTE could build software systems at a fraction of the cost the government currently pays vendors for custom code or expensive low-code platforms.
3. The wisdom of customizing “low code” platforms such as Salesforce and Pega that promise to enable faster feature development with “low code” solutions needs to be dramatically re-thought. AI-assisted custom software is a much more powerful “low code” solution than any proprietary platform product.
4. AI-enabled startups will quickly put pricing pressure on SaaS incumbents. VA should be ready to ditch big-tech incumbent vendors in favor of more agile, small businesses who are able to offer lower prices.
5. While the cost “per feature” of software may decrease dramatically, we should expect the demand for software to rise at least as much, as problems that were previously too niche to warrant custom software solutions may suddenly become viable (see: [Jevon’s Paradox](https://en.wikipedia.org/wiki/Jevons_paradox)). This will lead to an explosion of small applications, and the need for a sustainable way to host and manage them.

**90 Day Action Plan**

1. Provide every VA developer access to and training on an AI-enabled coding assistant via GitHub Copilot
   1. Status: VA has onboarded >1,700 GitHub.com developers & started trainings.
   2. Next steps:
      1. Evaluate impact through surveys and usage metrics.
      2. Determine how to provide github.va users access. Github.va is VA’s on-prem GitHub server where users may upload sensitive data & has a higher level of risk.
2. Pursue staffing a small VA team (potentially in partnership with USDS) to replace a planned $8.2M outsourced custom software project with a team of 10 or fewer FTE (cost < $2.3M), as a proof of concept of the ROI on AI-enabled FTE vs. government contractors.
3. Start pilot of 2-3 agentic AI coding products. Options include:
   1. Codeium Windsurf: Recently FedRAMP certified
   2. GitHub Copilot: Agentic Launch in May
   3. Cursor: Not FedRAMP certified but popular
4. Hold CTO level meetings with CTO peers at VA’s largest custom software contractor partners, for VA to understand their strategy to adopt AI-assisted programming and to ensure they understand the market dynamics that should reduce their costs.

**Actions for the next 12 months:**

1. **Standardize AI-Assisted Development:** Establish AI-assisted coding as standard practice across all projects.
2. **Align on which AI-enabled tools VA will offer** based on results of pilots with agentic AI coding products.
3. **Optimize Resources:**
   1. Reduce VA software development contract sizes and costs by leveraging increased developer productivity from AI tools.
   2. Look for opportunities to upskill existing software engineering staff with AI.
4. **Pursue additional software development insourcing efforts**. This will empower smaller in-house teams of FTE with expertise in both VA systems and software development to develop and manage a much wider range of systems than ever before.

Other:

Other tools: Sahil opened[a 6k line PR diff](https://github.com/department-of-veterans-affairs/oit-ai-ops-openai/pull/218) to switch vagptbeta's css system from nested css to tailwind! possible only due to agentic coding

Try Cursor for free <https://cursor.com/team/free-trial?code=a1aa799499a485cdcfd0a564adc94e2f>

Have a contract that uses AI enabled coding assistance for a custom VEAR/TRM applications? over SaaS? In other words should we be comparing the cost of a SaaS product versus the cost of a custom AI assisted development contract for our EA tools?

Protocols:

What is RAG: <https://aws.amazon.com/what-is/retrieval-augmented-generation/>

A2A - <https://github.com/google/A2A>

CoPilot Announcement:

To: [@department-of-veterans-affairs/all-va](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fgithub.com%2Forgs%2Fdepartment-of-veterans-affairs%2Fteams%2Fall-va&data=05%7C02%7C%7Cf270b1eefe384470d70008dd7e90f795%7Ce95f1b23abaf45ee821db7ab251ab3bf%7C0%7C0%7C638805883286031544%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=w8AJPjU6RfilOZ4W0AaC%2Fx%2Fd4XAbz6y4bQkXLTB0ZmA%3D&reserved=0)

GitHub Copilot is your AI-powered coding companion, designed to assist by suggesting entire lines or blocks of code as you type. This can help you code faster, reduce errors, and learn new coding techniques along the way.

Imagine having an intelligent assistant that accelerates your coding process and improves your productivity—sounds amazing, right?

If you're interested in leveraging this cutting-edge tool for your projects, you can request access using this [link](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fgithub.com%2Fdepartment-of-veterans-affairs%2Fcopilot-onboarding%2Fissues&data=05%7C02%7C%7Cf270b1eefe384470d70008dd7e90f795%7Ce95f1b23abaf45ee821db7ab251ab3bf%7C0%7C0%7C638805883286053453%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=3w9CIg%2F6DXATTJbi2ux8mUG7MRUPq2FWnosFy29UmyQ%3D&reserved=0). When requesting access, be sure to be signed in to GitHub and part of the Department of Veterans Affairs GitHub Organization.

Please note that accounts are automatically removed after 30 days of inactivity to optimize license usage. More information on how activity is determined can be found [here](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdocs.github.com%2Fen%2Fenterprise-cloud%40latest%2Fcopilot%2Fmanaging-copilot%2Fmanaging-github-copilot-in-your-organization%2Freviewing-activity-related-to-github-copilot-in-your-organization%2Freviewing-user-activity-data-for-copilot-in-your-organization%23understanding-the-last_activity_at-calculation&data=05%7C02%7C%7Cf270b1eefe384470d70008dd7e90f795%7Ce95f1b23abaf45ee821db7ab251ab3bf%7C0%7C0%7C638805883286066191%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=iJAeJahevwdd%2FygpjqLGsV9cK7tX2xCE80oDtcw9ygA%3D&reserved=0).

Check out the [CAIO GitHub Copilot SharePoint Page](https://dvagov.sharepoint.com/:u:/r/sites/oitchiefaiofficerteam/SitePages/github_copilot.aspx?csf=1&web=1&e=WSdB8V&xsdata=MDV8MDJ8fGYyNzBiMWVlZmUzODQ0NzBkNzAwMDhkZDdlOTBmNzk1fGU5NWYxYjIzYWJhZjQ1ZWU4MjFkYjdhYjI1MWFiM2JmfDB8MHw2Mzg4MDU4ODMyODYwNzg5NTd8VW5rbm93bnxUV0ZwYkdac2IzZDhleUpGYlhCMGVVMWhjR2tpT25SeWRXVXNJbFlpT2lJd0xqQXVNREF3TUNJc0lsQWlPaUpYYVc0ek1pSXNJa0ZPSWpvaVRXRnBiQ0lzSWxkVUlqb3lmUT09fDB8fHw%3d&sdata=RmRUUkR3em1Ka1NBOVF1NDJHTzlEbzRZa2VQNkZRWmVMQTh1dWMxTGR3dz0%3d) for more information and helpful resources, including recorded training webinars on fundamental and intermediate use of GitHub Copilot. If you have any questions or need further assistance, please reach out via the [GitHub Copilot Teams Channel](https://teams.microsoft.com/l/channel/19%3A8VpVI7PrJX-zgpfBqWCL5GeAFJpgq6KvhnPh2WR3GD81%40thread.tacv2/General?groupId=be80977b-836f-4073-81b9-7d25433720d8&tenantId=e95f1b23-abaf-45ee-821d-b7ab251ab3bf) or email [OITaicodedev@va.gov](mailto:OITaicodedev@va.gov).

Posted on behalf of the OCAIO Team.