

Meeting Notes: 15-min audio

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Executive Summary

This Google I/O presentation focuses on the significant advancements Google has made in integrating generative AI across its product suite. The keynote highlights the evolution of AI-powered features in Gmail (Help Me Write), Google Maps (Immersive View for Routes), and Google Photos (Magic Editor), showcasing how these improvements enhance user experience and productivity. The presentation also introduces Palm 2, the latest foundation model in production, emphasizing its capabilities in logic, reasoning, multilingual support, and code generation, along with its fine-tuned versions like MedPalm 2 for medical applications and SEC Palm for security. The merging of Google Brain and DeepMind into Google DeepMind is announced, signifying a unified effort in developing advanced AI models like Gemini, a multimodal model still under development. A strong emphasis is placed on responsible AI development, including watermarking and metadata for synthetically generated content. The presentation concludes by discussing Bard's evolution, now fully powered by Palm 2, and its expanding capabilities in programming, reasoning, and math. Overall, the presentation demonstrates Google's commitment to integrating AI responsibly across its products, improving user experiences, and advancing its AI foundation models.

Key Discussion Points

1. Generative AI is significantly improving Google products, including Gmail, Maps, and Photos.
2. Gmail's new 'Help Me Write' feature uses generative AI to draft emails based on user prompts.
3. Google Maps' 'Immersive View for Routes' provides a 3D preview of routes, incorporating real-time traffic and weather data.
4. Google Photos' 'Magic Editor' leverages generative AI to allow users to make advanced edits to their photos, such as removing objects, adjusting lighting, and repositioning elements.
5. Palm 2, the latest foundation model, is now in production and powers over 25 new products and features. It's available in various sizes (Gecko, Otter, Bison, Unicorn) optimized for different tasks and devices.
6. Palm 2 exhibits improved logic and reasoning, multilingual capabilities (over 100 languages), and strong coding abilities.
7. Fine-tuned versions of Palm 2, like MedPalm 2 and SEC Palm, demonstrate its adaptability to specialized domains.
8. MedPalm 2 achieved expert-level performance on medical licensing exam-style questions.
9. Google Brain and DeepMind have merged into Google DeepMind, focusing on building more capable and safe AI systems.
10. Gemini, Google DeepMind's next-generation multimodal foundation model, is currently in training.
11. Google is investing in AI responsibility, including watermarking and metadata for synthetically generated content.

12. Bard, Google's conversational AI experiment, is now fully running on Palm 2 and has enhanced capabilities in programming, reasoning, and math.

Action Items

- Roll out Help Me Write in Workspace updates.
- Roll out Immersive View for Routes in 15 cities by the end of the year (including London, New York, Tokyo, and San Francisco).
- Roll out Magic Editor in Google Photos later this year.
- Make Palm 2 available in preview (Thomas to share more details).

Decisions Made

- Merge Google Brain and DeepMind into Google DeepMind.
- Develop Gemini, a next-generation multimodal foundation model.

Overall Sentiment

Overall positive and enthusiastic, showcasing Google's advancements in AI. The presentation demonstrates high participant engagement through detailed explanations and engaging visuals.

Full Transcript

Good morning everyone. Welcome to Google I/O. It's great to see so many of you here at Shola and so many developers. And a huge thanks to the millions joining from around the world, from Bangladesh to Brazil to our new Bayview campus right next door. So great to have you as always. As you may have heard, AI is having a very busy year. So we've got lots to talk about. Let's get started. Seven years into our journey as an AI-first company, we are at an exciting inflection point. We have an opportunity to make AI even more helpful for people, for businesses, for communities, for everyone. We have been applying AI to make our products radically more helpful for a while. With Generative AI, we are taking the next step with a bold and responsible approach. We are reimagining all our core products including search. You will hear more later in the keynote. Let me start with a few examples of how Generative AI is helping to evolve our products starting with Gmail. In 2017 we launched Smart Reply. Short responses you could select with just one click. Next came Smart Compose which offered writing suggestions as you type. Smart Compose led to more advanced writing features. Powered by AI, they've been used in workspace over 180 billion times in the past year alone. And now with a much more powerful generative model, we are taking the next step in Gmail with Help Me Write. Let's say you got this email that your flight was canceled. The airline has sent a voucher, but what you really want is a full refund. You could reply and use Help Me Write. Just type in the prompt of what you want. An email to ask for a full refund. Hit Create and a full draft appears. As you can see, it conveniently pulled in flight details from the previous email and it looks pretty close to what you want to send. Maybe you want to refine it further. In this case, a more elaborate email might increase the chances of getting the refund. And there you go. I think it's ready to send. Help Me Write will start rolling out

as part of our workspace updates. And just like with Smart Compose, you will see it get better over time. The next example is Maps. Since the early days of Street View, AI has stitched together billions of panoramic images so people can explore the world from their device. At last year's I/O we introduced Immersive View which uses AI to create a high-fidelity representation of a place so you can experience it before you visit. Now we are expanding that same technology to do what Maps does best. Help you get where you want to go. Google Maps provides 20 billion kilometers of directions every day. That's a lot of trips. Imagine if you could see your whole trip in advance with Immersive View for Routes now you can, whether you're walking, cycling or driving. Let me show you what I mean. Say I'm in New York City and I want to go on a bike ride. Maps has given me a couple of options close to where I am. I like the one on the waterfront, so let's go with that. Looks scenic and I want to get a feel for it first. Click on Immersive View for Routes and it's an entirely new way to look at my journey. I can zoom in to get an incredible bird's-eye view of the ride and as we turn we get onto a great bike path. It looks like it's going to be a beautiful ride. You can also check today's air quality. Looks like AQI is 43 pretty good. And if I want to check traffic and weather and see how they might change over the next few hours, I can do that. Looks like it's going to pour later, so maybe I want to get going now. Immersive View for Routes will begin to roll out over the summer and launch in 15 cities by the end of the year, including London, New York, Tokyo and San Francisco. Another product made better by AI is Google Photos. We introduced it at I/O in 2015. It was one of our first AI-native products. Breakthroughs in machine learning made it possible to search your photos for things like people, sunsets or waterfalls. Of course, we want you to do more than just search photos. We also want

to help you make them better. In fact, every month, 1.7 billion images are edited in Google Photos. AI advancements give us more powerful ways to do this. For example, Magic Eraser, launched first on Pixel, uses AI-powered computational photography to remove unwanted distractions. And later this year, using a combination of semantic understanding and generative AI, you can do much more with a new experience called Magic Editor. Let's have a look. Say you're on a hike and you stop to take a photo in front of a waterfall. You wish you had taken your bag off for the photo, so let's go ahead and remove that backpack. The photo feels a bit dark, so you can improve the lighting. And maybe you want to even get rid of some clouds to make it feel as sunny as you remember it. Looking even closer. You

wish you had posed so it looks like you're really catching the water in your hand. No problem. You can adjust that. There you go. Let's look at one more photo. This is a great photo, but as a parent you always want your kid at the center of it all. And it looks like the balloons got cut off in this one. So you can go ahead and reposition the birthday boy. Magic Editor automatically recreates parts of the bench and balloons that were not captured in the original shot. As a finishing touch, you can punch up the sky. It changes the lighting in the rest of the photo so the edit feels consistent. It's truly magical. We are excited to roll out Magic Editor in Google Photos later this year. From Gmail and Photos to Maps, these are just a few examples of how AI can help you in moments that matter. And there is so much more we can do to deliver the full potential of AI across the products you know and love. Today we have 50 products that each serve more than half a billion people and businesses, and six of those products serve over 2 billion users each. This gives us so many opportunities to deliver on our mission to organize the world's information and make it universally accessible and useful.

I. It's a timeless mission that feels more relevant with each passing year and looking ahead. Making AI helpful for everyone is the most profound way we will advance our mission, and we are doing this in four important ways. First, by improving your knowledge and learning and deepening your understanding of the world. Second, by boosting creativity and productivity so you can express yourself and get things done. Third, by enabling developers and businesses to build their own transformative products and services. And finally, by building and deploying AI responsibly so that everyone can benefit equally. We are so excited by the opportunities ahead. Our ability to make AI helpful for everyone relies on continuously advancing our foundation models, so I want to take a moment to share how we are approaching them. Last year you heard us talk about Palm, which led to many improvements across our products. Today we are ready to announce our latest Palm model in production. Palm2. Palm2 builds on our fundamental research in our latest infrastructure. It's highly capable at a wide range of tasks and easy to deploy. We are announcing over 25 products and features powered by Palm 2 today. Palm 2 models deliver excellent foundational capabilities across a wide range of sizes. We have affectionately named them Gecko, Otter, Bison and Unicorn. Gecko is so lightweight that it can work on mobile devices fast enough for great interactive applications on device, even when offline. Palm 2 models are stronger in logic and reasoning thanks to broad training on scientific and mathematical topics. It's also trained on multilingual text spanning over 100 languages so it understands and generates nuanced results. Combined with powerful coding capabilities, Palm 2 can also help developers collaborating around the world. Let's look at this example. Let's say you're working with a colleague in Seoul and you're debugging code. You can ask it to fix a bug and help out your teammate by adding comments

in Korean to the code. It first recognizes the code is recursive, suggests a fix, and even explains the reasoning behind the fix. And as you can see, it added comments in Korean just like you asked. While Palm 2 is highly capable, it really shines when fine-tuned on domain-specific knowledge. We recently released SEC Palm, a version of Palm to fine-tune for security use cases. It uses AI to better detect malicious scripts and can help security experts understand and resolve threats. Another example is MedPalm2. In this case, it's fine-tuned on medical knowledge. This fine-tuning achieved a 9x reduction in inaccurate reasoning when compared to the model approaching the performance of clinician experts who answered the same set of questions. In fact, MedPalm 2 was the first language model to perform at expert level on medical licensing exam-style questions and is currently the state of the art. We are also working to add capabilities to MED Palm 2 so that it can synthesize information from medical imaging like plain films and mammograms. You can imagine an AI collaborator that helps radiologists interpret images and communicate the results. These are some examples of Palm 2 being used in specialized domains. We can't wait to see it used in more. That's why I'm pleased to announce that it is now available in preview and I'll let Thomas share more. Palm2 is the latest step in our decade-long journey to bring AI in responsible ways to billions of people. It builds on progress made by two world-class teams, the Brain Team and DeepMind. Looking back at the defining AI breakthroughs over the last decade, these teams have contributed to a significant number of them. AlphaGo, transformers, sequence-to-sequence models and so on. All this helps set the stage for the inflection point we are at

today. We recently brought these two teams together into a single unit, Google DeepMind. Using the computational resources of Google, they are focused on building more capable systems safely

and responsibly. This includes our next generation foundation model Gemini which is still in training. Gemini was created from the ground up to be multimodal, highly efficient at tool and API integrations and built to enable future innovations like memory and planning. While still early, we are already seeing impressive multimodal capabilities not seen in prior models. Once fine tuned and rigorously tested for safety. Gemini will be available at various sizes and capabilities, just like Palm 2. As we invest in more advanced models, we are also deeply investing in AI responsibility. This includes having the tools to identify synthetically generated content whenever you encounter it. Two important approaches are watermarking and metadata. Watermarking embeds information directly into content in ways that are maintained even through modest image editing. Moving forward, we are building our models to include watermarking and other techniques from the start. If you look at the synthetic image, its impressive how real it looks, so you can imagine how important this is going to be in the future. Metadata allows content creators to associate additional context with original files, giving you more information whenever you encounter an image. We'll ensure every one of our AI generated images has that metadata. James will talk about our responsible approach to AI later. As models get better and more capable, one of the most exciting opportunities is making them available for people to engage with directly. That's the opportunity we have at Bard, our experiment for conversational AI. We are rapidly evolving Bard. It now supports a wide range of programming capabilities, and its gotten much smarter at reasoning and math problems. And as of today, it is now fully running on Palm 2.