Economics AI Frontpage 35

The Economics of Replac Call Center Workers Wi

by **michaelwaves** 25th Nov 2025

TLDR: Voice AIs aren't that much cheaper in the year 2025

My friend runs a voice agent startup in Canada for walk-in cli uses tools to book appointments in the EMR (electronic medi theory, this helps the clinic hire less front desk staff and the st In reality, the margins are brutal and they barely charge above me: surely a living, breathing, squishy human costs more per h datacenter somewhere?

An industry overview of voice AIs

Broadly speaking there are 3 types of companies in the voice A

1. Foundation model companies:
    a. These companies actually train the text to speech a
    b. Openai, Elevenlabs, Cartesia
2. Pipeline companies

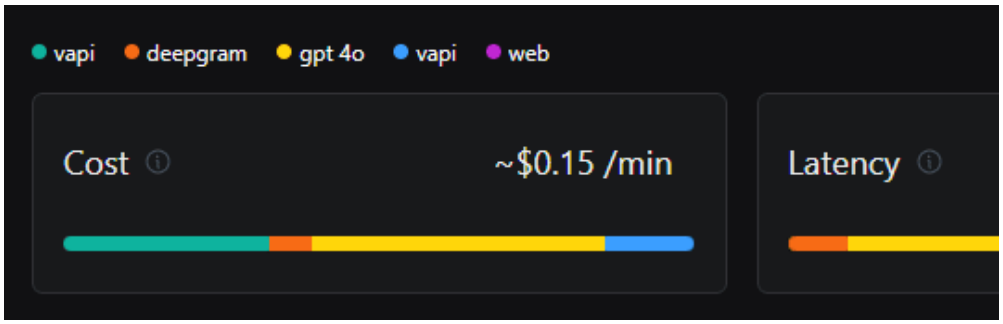
a. Infrastructure companies that aggregate multiple fc and help you experiment with multiple providers, b with SIP and WebRTC transports (think OpenRout
b. Developer focused: N8n, Bland, Vapi
c. Enterprise focused: Ada, Sierra, Fin

3. Vertical startups
   a. Startups that do "voice agents for {healthcare | logis
   b. Here's 142 of them

Of course, these categories are fuzzy and some companies mig many layers (e.g. Vapi has its own foundation model for TTS).

The line by line breakdown

Let's dive into the heart of the stack, using Vapi as an example



Vapi works like a sandwich with a few flavors

Speech to Text (STT) => LLM => Text to Speech (TT

- First, deepgram converts calls to text (100ms)
- Then, gpt 4o does text to text (600ms)
- Finally, Vapi does text to speech (250 ms)
- Add in some latency sauce from WebRTC transport (10((600 ms)

- At a minimum this costs $0.15/minute
  - $0.05 for Vapi hosting
  - $0.01 for Deepgram Speech to Text
  - $0.07 for GPT 4o
  - $0.022 for Vapi Text to Speech

Realtime API

- OpenAI handles direct audio to audio conversion but yo
  - Caveat: I actually tried making a call and was charg reason, so I used that number instead.

They have a calculator here that's fun to play with.

Comparison to Humans and Business Process (BPO)

Here are some top destinations US companies offshore to and salaries, along with the hourly rates of Vapi TTS, Vapi OpenA

Country	Avg annual (local)	Avg hourly (local)	Approx annual (USD)	Approx hourly (USD)	So
Egypt	EGP 128,478	EGP 62/hr	$2,716	$1.31	ERI Eco
Vietnam	₫83,603,022	₫40,194/hr	$3,174	$1.53	Sala Exp
Philippines	₱264,272	₱127/hr	$4,487	$2.16	Sala
India	₹429,359	₹206.42/hr	$4,809	$2.31	Sala
Mexico	MXN 148,016	MXN 71/hr	$7,670	$3.68	Sala
Colombia	COP 30,441,760	COP 14,635/hr	$8,061	$3.88	Sala
Brazil	R$44,967	R$22/hr	$8,319	$4.07	ERI Res
Bland Voice Agent	-	-	$11,232.00	$5.40	http
South Africa	R198,779	R96/hr	$11,487	$5.55	ERI Eco
Romania	RON 54,416	RON 26/hr	$12,363	$5.91	Sala
Poland	PLN 61,205	≈PLN 29.4/hr	$16,684	$8.02	TTI Jobs

Vapi TTS	-	-	$18,720.00	$9.00	http
Canada	CAD 35500	16.83	$25,186.01	$11.95	my
US	-	-	$38,854.40	$18.68	Ind
Vapi OpenAI Realtime audio	-	-	$67,392.00	$32.40	http

We can see that Bland's $0.09/minute ($5.4 USD/hour) rate is
Africa, but it's still cheaper to hire humans in most developing

If one were to start a voice agent startup in Canada built on V
in just API costs, while replacing a minimum wage worker tha
the costs of onboarding, overhead, and salaries and you would

Assumptions

The human is working at 100% utilization every hour they are
cynically maybe not?).

The onboarding and training costs of humans and setting up v
and workflows is the same (likely voice agents are much cheap

Minimum wage front desk receptionists make around the sam
do the same kinds of tasks. This might not be totally true, e.g.
with people in person/show them around.

Limitations

Enterprise voice API contracts might offer bulk discounts for
in. I have no data on how this works because most enterprise
and private.

I mostly tested Vapi because Bland had a bunch of bugs and d
enterprise platforms like Sierra or Ada because I'm not an ent

I didn't consider what the cheapest possible bespoke solution
directly with foundation models/self hosted open source + Tw
interesting area for future research.

I didn't consider the opportunity costs of having AIs take calls
service/receptionist people be replaced altogether, or be able t
administrative back office tasks? (assuming those aren't also re

Someone should do a study on price elasticity of demand in ca
we reduce the hourly rate by $1, how many more units of cust
companies buy?

Presumably a large proportion of voice agents will be used for
future, increasing revenue instead of reducing cost centers lik

I didn't consider new voice model architectures like Cartesia c

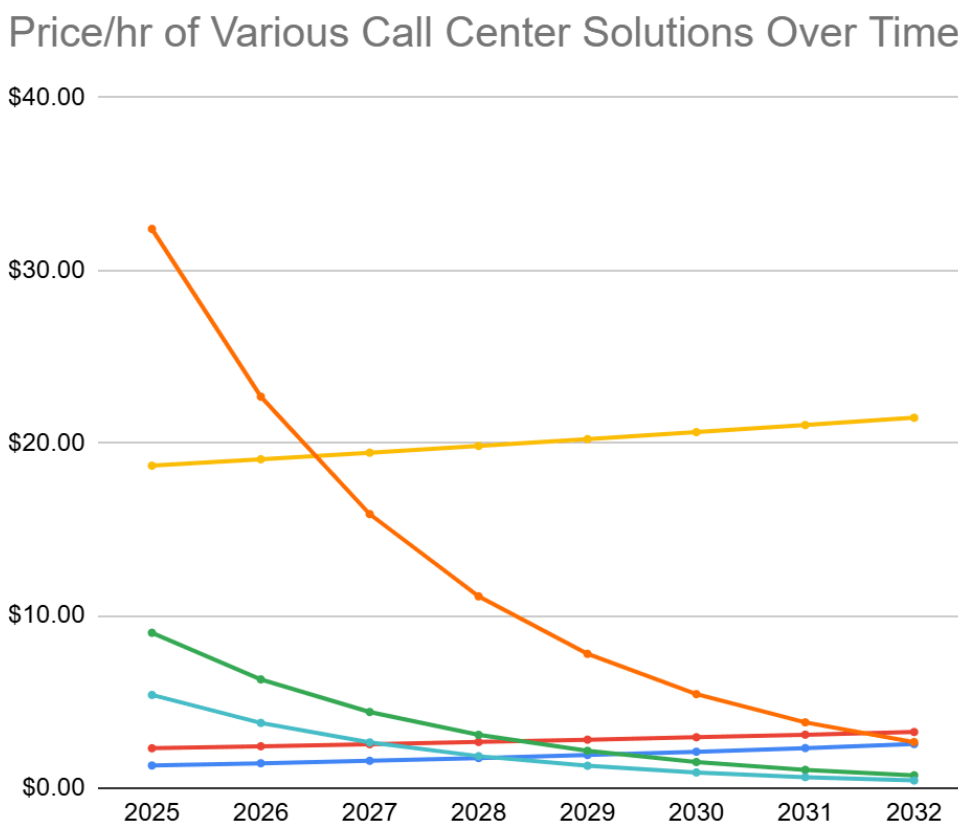
The Future

Shrewd capitalists would realize GPU/inference costs are mas
and perhaps do a discounted cash flow model of saved costs fo
models beat every human on earth in cost/hour.

Assuming a drop in inference costs of 30% per year and the wa
with each country's inflation rate, we see most voice agents ar
cheapest human labor around 2030.

Country	Inflation	2025	2026	2027	2028
Egypt	1.10	$1.31	$1.44	$1.59	$1.74
Vietnam	1.03	$1.53	$1.58	$1.62	$1.67
Philippines	1.02	$2.16	$2.20	$2.25	$2.29

India	1.05	$2.31	$2.43	$2.55	$2.67
Mexico	1.04	$3.68	$3.83	$3.98	$4.14
Colombia	1.05	$3.88	$4.07	$4.28	$4.49
Brazil	1.09	$4.07	$4.44	$4.84	$5.27
Bland Voice Agent	0.70	$5.40	$3.78	$2.65	$1.85
South Africa	1.04	$5.55	$5.77	$6.00	$6.24
Romania	1.10	$5.91	$6.50	$7.15	$7.87
Poland	1.02	$8.02	$8.18	$8.34	$8.51
Vapi TTS	0.70	$9.00	$6.30	$4.41	$3.09
Canada	1.02	$11.95	$12.19	$12.43	$12.68
US	1.02	$18.68	$19.05	$19.43	$19.82
Vapi OpenAI Realtime Audio	0.70	$32.40	$22.68	$15.88	$11.11



Conclusion

Should you start a voice agent company in 2025? Probably, if y
and raise enough VC money to stay alive for 5 years. Should w
customer service inquiries, sensitive personal information, an
Electronic Medical Record systems? That's a question for anot

Rendering 5/6 comments, sorted by top scoring (show more)

[–] **AnthonyC** 1d ▼ 7 ▲ ✕ 2 ✓

Thanks for the analysis, but I think this is only looking at about half the equat

Does the AI stay on-script in ways that shorten call duration? Or otherwise i
efficiently denying refunds/returns/warranty claims/etc.; or successfully genera
plans, or whatever; or successfully solving customer problems on the first cal

✓ 1

[–] **michaelwaves** 21h ▼ 5 ▲ ✕ 0 ✓

That is a great point. I don't think I have too much data on this or know wh
voice AI people would be appreciated!). I spoke to an early engineer at a vo
medical providers call big insurers to claim insurance. A big problem they ha
too friendly and random ("how was your weekend"==tokens set on fire) bu
impolite. Funnily enough, on the insurer's side they also use AI to detect an
helps them efficiently deny claims?).

[–] **Kaj_Sotala** 17h ▼ 4 ▲ ✕ 0 ✓

Or is the opposite likely to happen - does the AI frequently fail to solve the
customer demands to speak to a human, and then you have to pay for the A
And what's the chance that it gives wrong advice that the company is then h

Even one case of that might be quite costly if the AI promised the customer
companies are likely to be nervous about such risks. Or in the case of elect
chance of the voice-to-text hallucinating words and potentially getting a per
sure that human workers mishear things too, but I also expect that a jury w
deployed an experimental system with a known tendency for hallucinations
receptionist misheard".)

[–] **Thomas Kwa** 1d ▼ 2 ▲ ✕ 0 ✓

What is Vapi doing that they're so expensive? I feel like someone who uses ar
speech in house would pay WAY less than $4.32/hour per call, that would pay

[–] **michaelwaves** 20h ▼ 3 ▲ ✕ 2 ✓

Probably just marking up gpt 4o API costs? gpt 4o costs $2.50/M input and $
in and 10k out per hour that's 0.125/hour. Maybe double or triple that for t
should be 0.07/minute. I guess they also charge for infrastructure like server
everything and connect to phones.

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