



Vidya Vikas Education Trust's

Universal College of Engineering

Accredited with B+ Grade by NAAC

(Permanently Unaided | Approved by AICTE, DTE & Affiliated to University of Mumbai)

Gujarati Linguistic Minority Institution

CURRENT WAVES

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College Profile

Everything you need to know about us.

Embraced by lush greenery and scenic beauty, Universal College of Engineering is a treasured place for aspiring engineers to leave their imprints on success.

As a college within the wider network frame, we are one of the fastest-growing institutions in India. Our institute has been accredited by the National Assessment and Accreditation Council (NAAC) with a B+ grade in the first cycle of accreditation. Times of India Survey Ranked No. 1 in India among Top Emerging Private Engineering Institutes for 6 consecutive years 2015, 2016, 2017, 2018, 2019, and 2020 and the saga of accolades still continues.

In response to the expectations of quality technical education, our college is approved by the All India Council for Technical Education (AICTE), New Delhi; Recognized by the Directorate of Technical Education (DTE), Government of Maharashtra; affiliated to Mumbai University.

Our college is also associated with professional bodies like IEEE, IETE, ISA, and CSI to update the revolutionary technological advancements.

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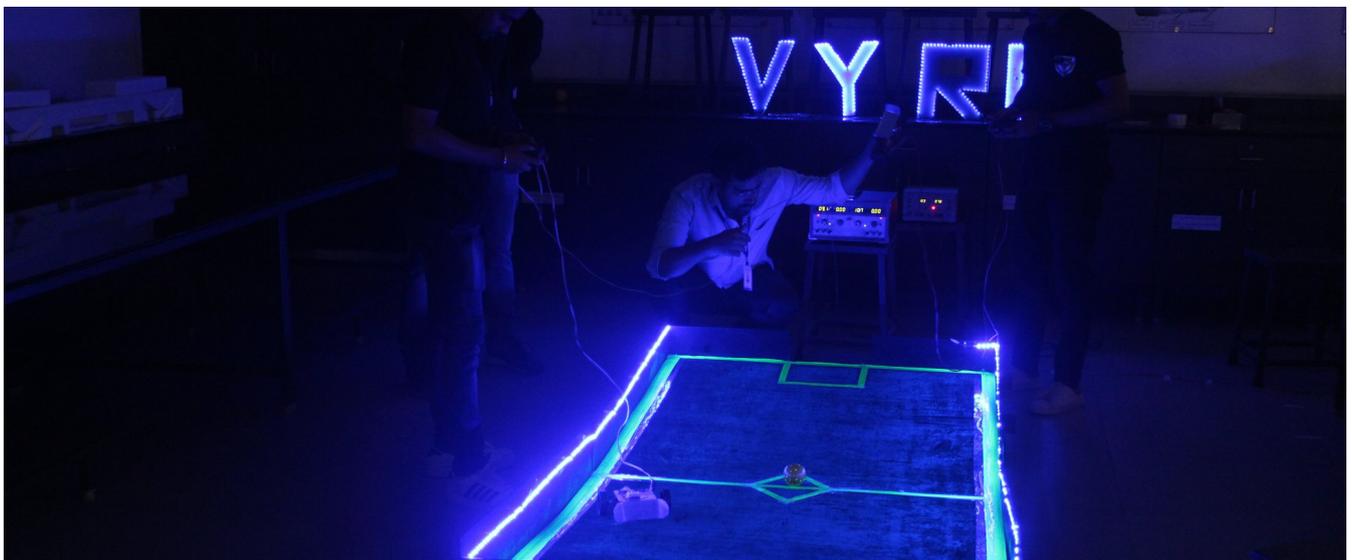
We offer 5 years of full-time Bachelor of Technology in Computer Engineering, Civil Engineering, Artificial Intelligence & Machine Learning, Information Technology Engineering, and Data Engineering.

The unique state-of-the-art facility of the institute has been carefully designed to accommodate the needs of the students. Laboratories are equipped with world-class facilities based on the latest technology of different sectors. Our smart classrooms are well ventilated, spacious, and equipped with overhead and LCD projectors along with the public address system. The College library provides a rich collection of specialist library resources and services to support student's academic work and enrich their research skills.



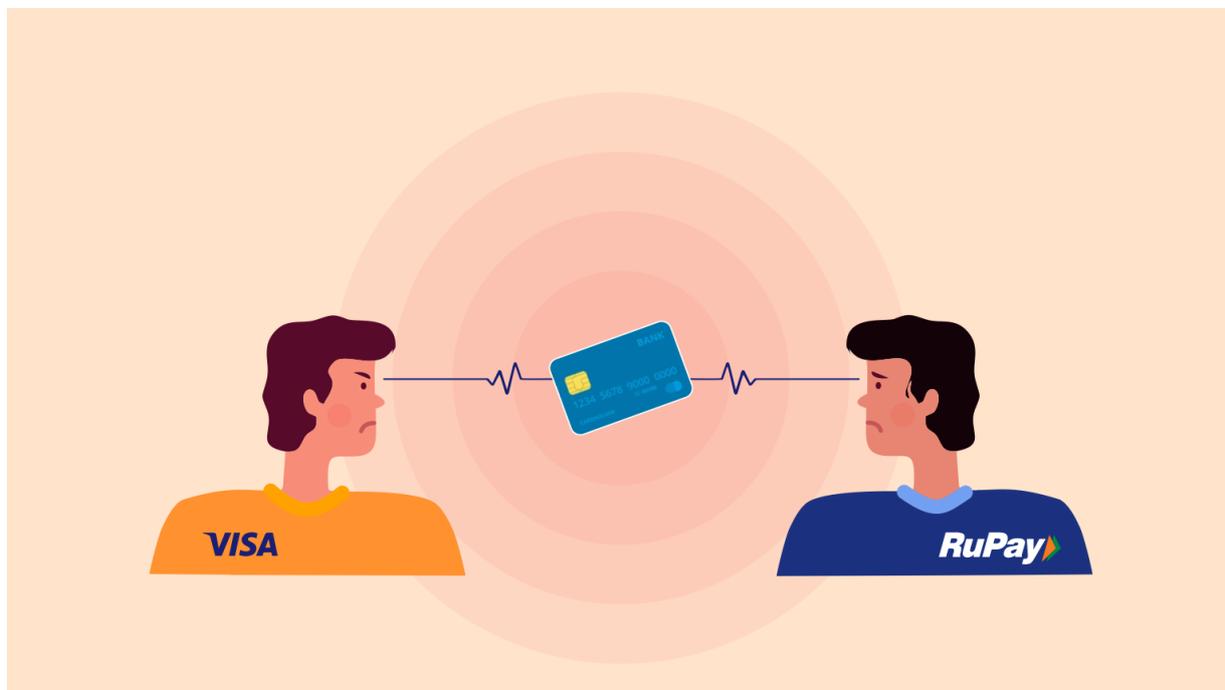
We are obliged to equip our students to get placed in highly reputed companies by mentoring their necessary skill set for cutting-edge technologies. The core highlighted areas are helping students with their technical competency, communication skills along with career guidance and counseling.

Universal College of Engineering has produced a large number of successful alumni who are working in reputed organizations in India and abroad and have contributed immensely to the cause of nation-building and society. We welcome all engineering aspirants to create an incredible legacy in the field of engineering.



The Payment Network Wars

In the month of November, Reuters reported that Visa had filed a complaint with the U.S. government accusing India of giving undue preference to its homegrown payment network RuPay. And in today's Finshots we explain why Visa has ants in its pants.



Business

The story

Before we begin, a short note on how card transactions work.

Let's say you go to a store and buy a packet of biscuits. You don't have cash on you. So you decide to whip out your debit/credit card to pay for it. You swipe the card on a PoS machine and all of a sudden a magical dance begins. Your bank starts talking to the store owner's bank in an attempt to move money. The store owner's bank charges a small fee for being a willing participant and calls it the merchant discount rate. But it can't keep everything to itself. It has to share a part of these spoils with another intermediary, that helps process this payment. That intermediary happens to be Visa or Mastercard. And since the store owner has benefited from a sale,

they now have to pay the bank the merchant discount rate — usually tallying up to about 1–3% of the transaction. And this, in turn, helps payment networks like Visa and Mastercard thrive in a very uncertain world.

They get to keep a part of the spoils too remember?

But this duopoly now faces a real existential threat as countries continue to build their own payment network alternatives.

Take India for instance. In 2016, it built the Unified Payments Interface (UPI) to facilitate instant payments. Anyone could scan a Quick Response (QR) code and move money from one bank account to another instantaneously. And what's even more impressive? It was free.

Merchants loved it because they didn't have to pay the extra charge. And in a high-growth market like India, Visa and Mastercard began losing a lot of money. Some estimates peg this at about Rs 6,000 crores.

And immediately the duo made their displeasure known. They made appeals to the government asking them to protect their interests. But officials didn't seem to care too much.

"We are not in the process of protecting the revenue of private players," said a senior Niti Aayog official. "The government will continue to provide alternate and cheaper options to end-users to enable them to board our digital payment drive."

And the likes of Visa and Mastercard couldn't do much because UPI isn't another card. It's a whole new thing. However, they do have a direct rival in India's homegrown RuPay and that's whom they are targeting right now.

As of 2017, RuPay accounted for 15% of all credit and debit cards in the country. As of November 2020, however, 63% of India's 952 million debit and credit cards had the RuPay stamp.

How did RuPay become so dominant, you ask?

Well, every time somebody opens a bank account under India's financial inclusion scheme — the Pradhan Mantri Jan-Dhan Yojana (PMJDY), they get a RuPay card. In fact, nearly 50% of RuPay cards are linked to this program alone. And the other 50% are driven by a few subtle and not-so-subtle government nudges. For instance, when Prime Minister Narendra Modi plays the "nationalism" card — urging his fellow countrymen to adopt local cards and contribute to nation-building. Or when Finance Minister Nirmala Sitharaman directs banks to issue RuPay cards alone.

And Visa believes this is a perfect example of the government promoting one brand over the other. It's not a level playing field anymore and they've made their displeasure known by filing an official complaint with the US. Even Mastercard filed a similar complaint in the U.S. back in 2018.

However, India is not alone in promoting its homegrown payment networks. Russia has Mir — set up in 2015 and it's completely dominating Visa and Mastercard. Even the European Union is building out the European Payments Initiative (EPI) to ween off some of these dependencies.

So at this point, Visa's tantrums should seem baseless, even juvenile, perhaps. After all, countries will want to promote homegrown alternatives when such alternatives are available. It's only natural for Indian policymakers to nudge people to consider RuPay debit cards, no?

But Visa does have an ace up its sleeve. It knows that complaining isn't entirely an exercise in futility.

India carries a trade surplus with the US. That means we ship more goods and services to the US than they ship back home. Now, by all accounts, this is a good thing for Indian businesses and entrepreneurs. They get ready access to a very important market in the US and they make a lot of money out of it. However, American politicians have routinely accused India of not reciprocating in kind. They've argued that we limit access to our market by imposing duties and tariffs — making it more difficult for American companies to do business in India. And if this complaint hits the right chords with US politicians, they could retaliate rather harshly, forcing India to reconsider its position.

So while the complaint may have very little merit to it, Visa knows that it can actually get the US to intervene on its behalf. And so, we will have to wait and see if the US does respond.

The day Amazon's robots didn't wake up

In today's newsletter, we explain the worldwide impact of Amazon Web Services' outage.



Business

The story

Imagine this—You wake up every morning and soon enough a digital butler attends to you. You want the house vacuumed? Just say the word and it'll be done. You want to preheat the oven? Don't worry, the smart oven already knows your preference and it's chugging along as we speak. The refrigerator meanwhile knows you're running low on milk and it's already ordering an extra carton so you can stock up for tomorrow. It's like you're living in the future.

However, the reality is that some of us are actually living in this fantasy world right now. Smart ovens, sophisticated refrigerators, automated vacuum cleaners, and personal digital assistants are making life easier and it's

not too far-fetched to think that we are already dependent on a whole host of smart devices to help us get on with our lives.

Don't believe us?

Here's another thought experiment—Imagine these smart devices decide to take a break. Imagine you go—"Hey Alexa", and you receive no reply.

Well, that reality did manifest quite recently and there was chaos all around. On 7th December, Amazon Web Services (AWS) suffered an outage across many parts of the world and all those smart devices powered by AWS went quiet

alongside it. Truth be told, it wasn't just a smart device problem. Many businesses suffered in tandem. These companies use Amazon cloud solutions to store data, run their applications, and do all sorts of other things and all of them had to bide their time until somebody could figure out what was happening. Thankfully Amazon did fix the issue soon enough, but not before it became apparent to everyone how dependent we are on the internet giant.

In one egregious case, the smart doorbell service Ring stopped working altogether. Users began seeing issues with their home monitoring service as they couldn't disable alarms, monitor children, or watch out for intruders during this time. Elsewhere, the investing platform Public also went down as AWS began to sputter. People couldn't transact on the platform and it could have actually eroded a lot of investor wealth in the process. But wait, we are just getting started.

Media houses like the Washington Post couldn't publish their stories on time. Netflix's streaming services wouldn't open in some regions. Visitors couldn't enter Disney theme parks. And Tinder stopped working for a while. Imagine that? Tinder!!!

More importantly, we were worried that we couldn't send our daily Finshots the next day. And it's becoming all the more obvious that this dependence has only increased since the pandemic. Companies are spending billions to boost their digital presence and AWS is their first choice. In fact, the company now controls over 40% of the \$64 billion industry tending to cloud infrastructure services.

Crazy!

You would think that this kind of market dominance has been predicated on a stellar performance. Which it is, to a certain degree. However, these big bang outages are a matter of grave concern. AWS alone suffered major outages in 2011, 2015, 2017, and 2020. In 2017, companies on the US S&P500 Index lost \$150 million due to a 4-hour AWS outage. And the losses are only going to mount from here on in.

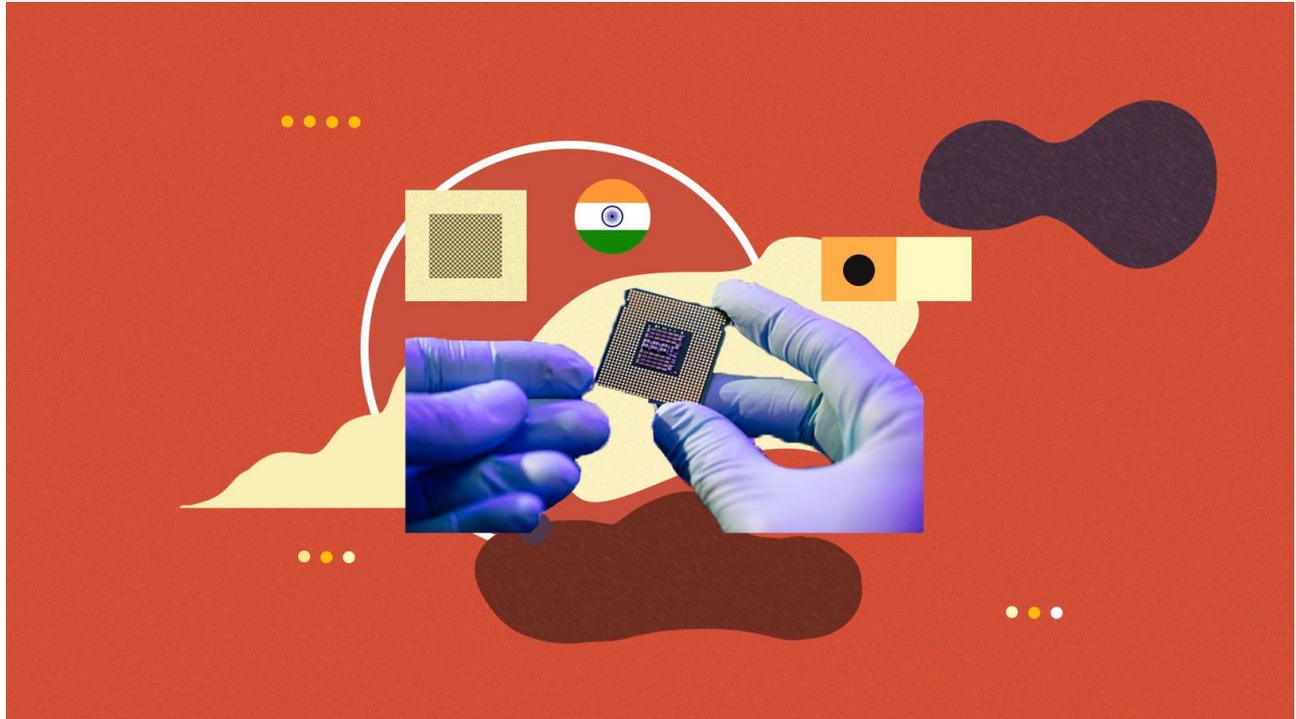
So what can companies do to avoid such an eventuality?

Well, they could invest some more and implement redundancies with other cloud service providers. But since this is an expensive affair, most people simply let it slide unless it's mission-critical. If it's an Amazon product like Ring or Alexa, well then, it's likely that an AWS outage will take down those services no matter what. And for the company, this should be a matter of concern. Right now as it stands, the company makes around 12% of its revenue from AWS. However, the unit contributes over 50% of its profits. It's a cash cow.

So hopefully Amazon will act on this and make sure that a big chunk of the internet doesn't go offline all of a sudden once again.

India's mega semiconductor push

In today's newsletter, we see how the Indian government intends to make the country a global semiconductor manufacturing hub



Business

The story

The government has a tough job at hand. They have to create more jobs, invest in this country's future and grow the economy while at it. And when you're in the middle of a pandemic, this becomes exponentially harder. And it seems that there is a collective recognition now that they can't do it alone. They need the private sector to join hands. However, for corporates looking to turn a profit, this could be easier said than done.

They are strapped for cash and investing billions at this juncture may still be a tall order. So the government needs to do something to get them excited. They need to incentivize them to set up shop and drop big money to aid the growth agenda.

What do these incentives look like? Well, they could be tax rebates, exemptions on import and export duties, easier land-acquisition terms, or subsidies. In return the government expects them to produce in India or as we like to call it here "Make in India." In fact, most incentive structures are tied to production targets. They are called Production Linked Incentive Schemes (PLIs).

So far, the Indian government has introduced PLI schemes for a whole host of industries such as the auto sector, white goods industries, electronics, and phone manufacturing. In total, thirteen PLI schemes have already been put in place, and they are expected to cumulatively add up to investments of around \$30 billion by

2025. The PLI schemes for mobile phones, in particular, have been a crucial factor in consolidating India's place as the world's second-largest mobile phone manufacturer, and boosting India's mobile phone exports by 250%.

However, despite all the progress, we still don't make the big money parts—the semiconductor chips. It's been a sore point of sorts and the government has been trying to fix it.

And to this end, they recently cleared a \$10 billion PLI scheme to attract global chipmakers to set up semiconductor plants in the country. That's right! India wants to be a semiconductor manufacturing hub and they hope to create some 35,000 specialized high-end jobs, 100,000 indirect employment opportunities, and attract investments worth \$23 Billion in the process.

And unlike previous PLI schemes where the government offered incentives on incremental sales, this one is expected to offset the high costs of setting up a semiconductor factory. The government is expected to bear as much as 50% of the costs associated with setting up a fabricator and it could go a long way in alleviating some of the uncertainty involved in investing in such projects.

Now there is still some confusion on whether this will be a straight cash infusion or include some other kinds of incentives we spoke of earlier. However, both industry incumbents and outsiders have hailed this announcement as a gamechanger.

Having said that, however, incentives alone won't help us become a manufacturing hub. If you've been reading our newsletter, you'll know that manufacturing semiconductors are no walk in the park. Apart from the obvious high costs,

companies have to take into account the infrastructure challenges.

For instance, do you get an uninterrupted power supply? If not, then you can't set up the plant. Next, you'll need access to lots of water. Not just any water, but millions of liters of ultra-pure water. In fact, even a basic fabrication unit is known to consume more than 20 million liters of water per day. And sourcing this water has turned out to be China's Achilles heel in scaling production. Even Taiwan has had trouble with this thing for a while now. Finally, you also have to make sure that you set up the plant at a pristine location. If you can't get yourself a clean workspace, then the plant is a no-go once again. In fact back in 2017, when India last tried to woo global semiconductor companies, it failed on these accounts. Last time around we offered to waive off customs duties on the import of machinery required for chip manufacturing. But clearly, that wasn't enough, and there weren't many takers. However, a lot has changed since then. The world is reeling through a crippling semiconductor shortage and it desperately needs alternatives. And if India can position itself right, by offering the right kind of incentives alongside the other bits, maybe this time will be different.



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