



Vidya Vikas Education Trust's
Universal College of Engineering
Kaman - Bhiwandi Road, Vasai, Maharashtra
Accredited with 'B+' grade by NAAC, approved by AICTE, DTE
Recognised as Gujrati Linguistic Minority

CURRENT WAVES

The Official Newsletter of Dept. of EXTC, UCOE
OCTOBER 2020, VOLUME 3, EDITION 4



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 towards 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 National Assessment and Accreditation Council (NAAC) with **B+ grade** in the first cycle of accreditation. Times of India Survey **Ranked No. 1** in India among Top Emerging Private Engineering Institutes for 5 consecutive years 2015, 2016, 2017, 2018 and 2019 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.

ARTICLES INSIDE THIS ISSUE:

Is the world running out of copper? - 3

Thou shalt not dump the milk- 5

The \$40 Billion Semiconductor deal- 7

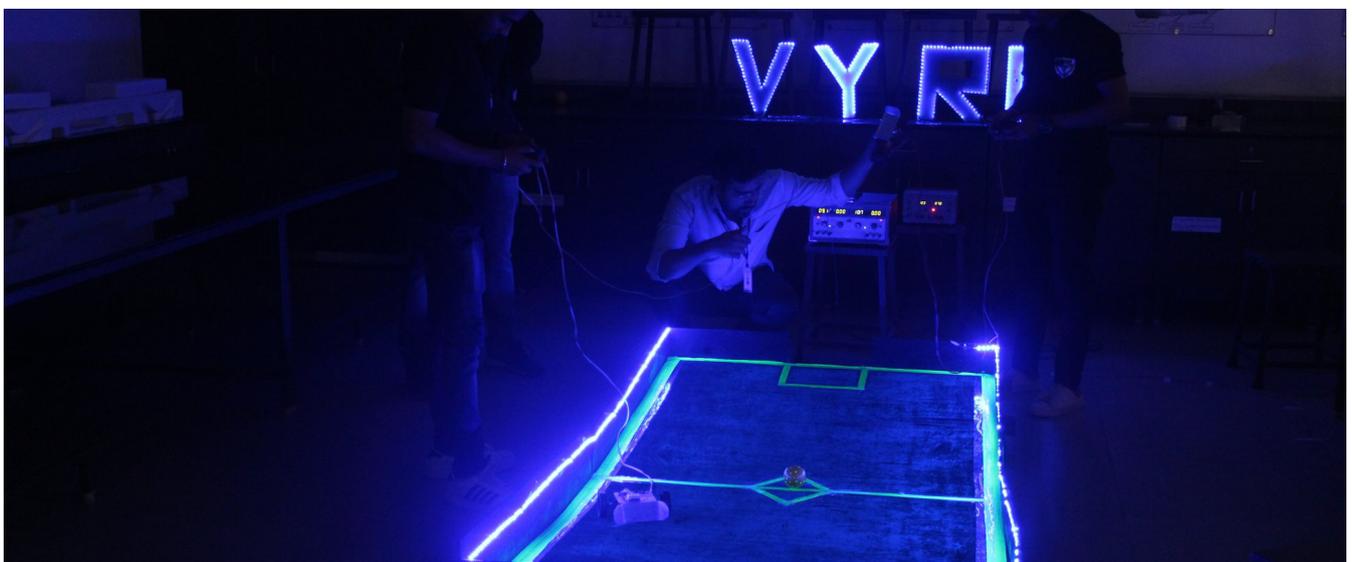
We offer 4 years full-time Bachelor of Technology in Computer Engineering, Civil Engineering, Artificial Intelligence & Machine Learning, Information Technology Engineering and Data Engineering.

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. College library provides a rich collection of specialist library resources and services to support students' 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 counselling.

Universal College of Engineering has produced a large number of successful alumni who are working in reputed organisations 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.



Is the world running out of copper?

In this newsletter, we talk about copper, innovation and pink newspapers :)



Business

The Story

It's a sobering headline and it reads—
“Evidence of a looming supply squeeze is mounting on the London Metal Exchange, where (copper) inventories are at their lowest levels in almost 15 years—only enough to last users a little more than a day. A year ago, they would have lasted five.”

And to be fair, it does sound apocalyptic. But like most stories, there is more to this than what meets the eye.

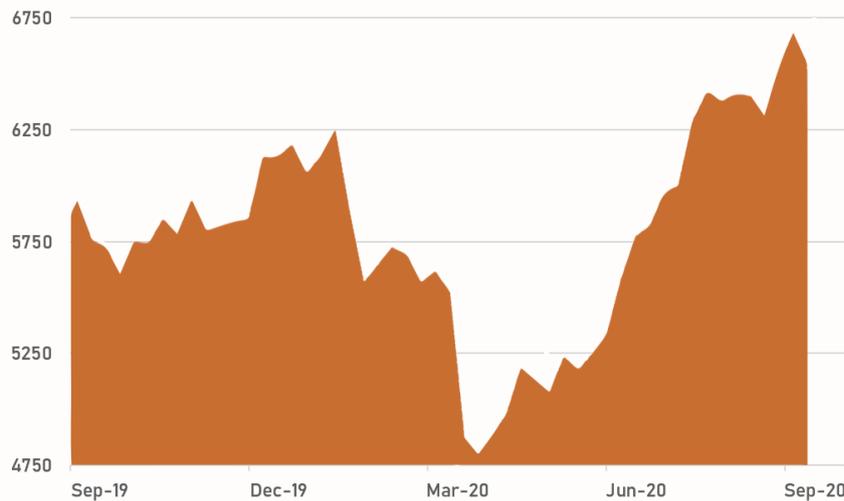
So let's break this down, starting with the London Metal Exchange (LME).

As the name suggests LME facilitates the exchange of metals. But not all metals—only the non-ferrous kind. Meaning you can't trade steel and iron, instead you'll have to dabble with aluminium, copper, gold, silver, etc.

On most occasions, end consumers looking to source copper might already have tied themselves to long term contracts with suppliers they already know. But if you don't have the right connections, you can always buy and sell copper on the London Metal Exchange. You could do future contracts—where you agree to buy or sell copper at a later date. Or you could do spot contracts—buy and sell this stuff on the spot.

Copper prices are on the rise

Spot prices of copper in USD per Ton



Source: Business Insider

And the problem with copper right now seems to be isolated to the spot market i.e. if you wanted to buy copper this very moment, you'd probably have to shell out a lot of money.

So how did it get here?

Well, you could blame China.

No, really.

Blame China.

The Red Dragon has been pumping out cars, smartphones and electric cables ever since emerging out of the lockdown and key manufacturing hubs are buzzing with activity. So the story goes that supplies were being driven to China because the demand has been rather overwhelming these past few months. Also do note the recovery in China preceded recovery in other parts of the world. So they had a veritable advantage in sourcing key supplies.

Even private traders elsewhere seem to be hoarding copper fearing a fresh wave of coronavirus reinfections.

After all, if future lockdowns cripple supply chains once again prices could reach stratospheric levels. It's not a very enticing proposition. So best hoard reserves now, right?

Well, yes. But that creates a problem everywhere else—like at LME. In any case, as prices keep increasing, some of these hoarders will eventually relent. They'll start offloading some of their inventory and the supply crunch should ease rather quickly.

So is the world running out of copper?

Not quite. But if you're trying to source copper on the spot right now, you might have to pay a premium.

Also, point of interest: Most buying and selling at the LME involves financial traders. Meaning these folks are betting on the price of copper. They don't actually need the physical stuff, okay?

Thou shalt not dump the milk

In this newsletter, we talk about the problem of plenty.



Business

The story

It's not rocket science. When you're trying to navigate a lockdown, you have to contend with a demand slump. For instance, when restaurants and ice cream parlours closed down, milk producers were in a fix. Their biggest customers were shutting shop and they could do very little about it. Also with the supply chain in tatters, milk-producing states had difficulty transporting their produce across state lines. And this was a problem.

Because Milk is a perishable product. It doesn't have a long shelf life. Unless specially treated and packaged in impeccable condition it won't last more than a couple of weeks.

Which means you have two alternatives. You can either dump all the excess milk or you could process it into something that can last longer.

Dumping milk might sound like an outrageous solution. But when you don't have anyone buying from you, there isn't a lot of options you can consider. Your cow won't stop producing milk. When the udders are full, they must be emptied. It's the law of nature. You can't get around it. So when demand craters, there is a very real risk that milk producers might be forced to throw away their produce. Thankfully that did not happen.

A Dependable System

Ever wonder why milk prices don't swing around wildly like onions?

Well, the thing is... Milk producers don't sell their produce in Mandis (or state-designated market places). Instead, more often than not, they subscribe to a membership in a co-operative society. These members then elect their representatives and the representatives manage the district milk unions. It's the union's job to take care of all the milk and the processing. The farmers simply drop their milk at the co-operatives and the union processes it into packaged milk and value-added products. The products then reach end consumers via a slew of distributors and retailers.

Prominent among them include state milk federations—who, as distributors facilitate the selling of branded products that you're all familiar with. For instance, Karnataka Cooperative Milk Producers' Federation Ltd. (KMF), supplies products under the brand name Nandini. Gujarat Cooperative Milk Marketing Federation (GCMMF) sells its products under the celebrated Amul brand. And, for the most part, these federations do a pretty decent job.

So in effect, a co-operative system has no room for middlemen. There is a more equitable distribution of wealth and milk producers are better off than other farmers in India. And the efficacy of the co-operative model was in full display during the pandemic.

When D.C. Sateesh, managing director of Karnataka Milk Federation was asked about all the excess milk coming in, he had this to say—"After the lockdown, private players

completely stopped procuring milk from farmers. One lakh to two lakh farmers, who are also members of societies recognized by their respective milk unions, started supplying to us.

We cannot say no to them as they are also members of our societies. This is the primary reason for the increased procurement."

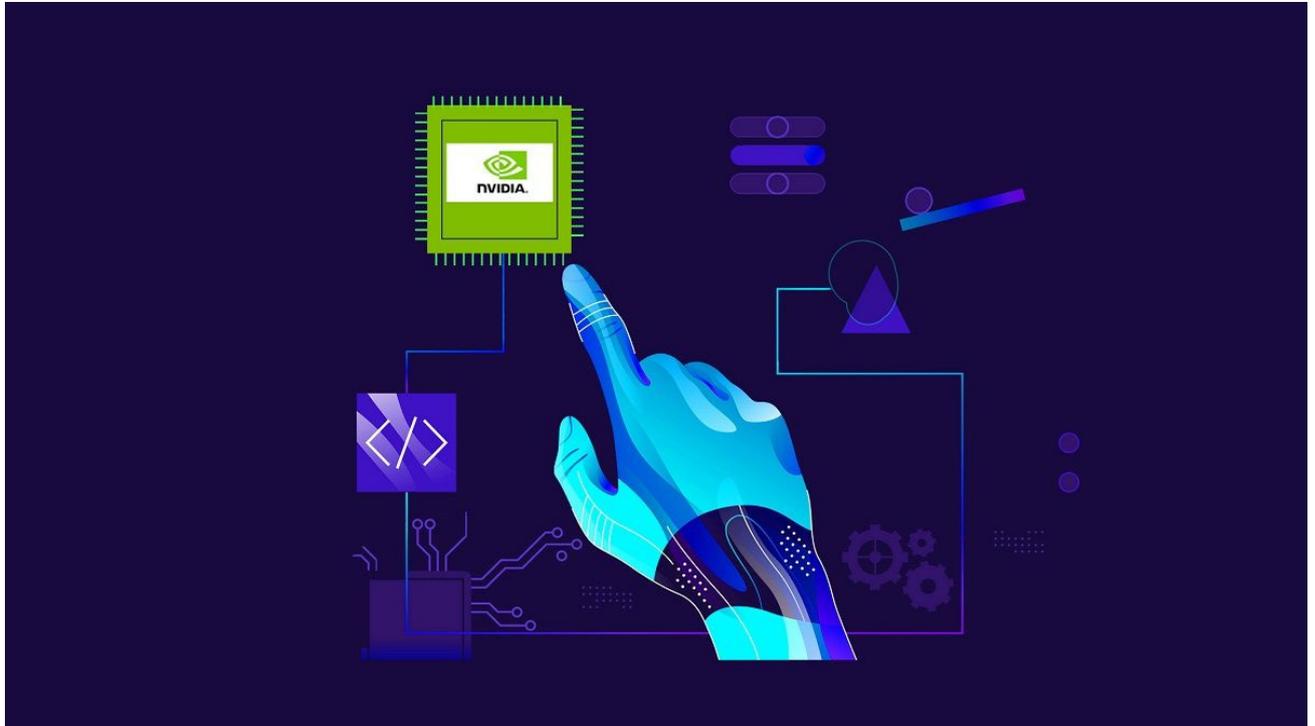
At one point they were taking in close to 8–10 lakh litres of excess milk each day. And since they couldn't store all this milk in depots, they started processing it into milk powder. Meanwhile, in Gujarat, Amul and Mother Dairy were also doing something very similar. As an article in Bloomberg Quint notes—Amul, India's No-1 dairy brand, and state-owned Mother Dairy are now churning excess milk into more butter, cheese and mawa. To exhaust the supply of these dairy products, they are also making cookies, bread, and rusks, gulab jamun, rasgulla and more

So despite the crippling lockdown, the excess supply was diverted elsewhere. They were very few shortages. Farmer members continued to receive a fair price. And co-operative societies adapted rather quickly. If that isn't a success story, I don't know what is.

Fun fact: India is also the largest producer of milk in the world.

The \$40 Billion Semiconductor deal

On Sunday, NVIDIA announced that it was buying Arm Holdings—the British Microprocessor giant for \$40 Billion and we need to talk about it.



Business

The story

Arm has a peculiar business model. It doesn't manufacture anything. Instead, it licenses its technology to other companies who use Arm's Intellectual Property (IPs) to customize their own offering of chips and microprocessors. If you were being critical, you'd argue Arm is conceding ground here. After all, if you have the know-how needed to design and fabricate chips, why wouldn't you build a manufacturing plant and extract more value from your consumers. It's only logical to go downstream, no?

Well... Yes. But there are downsides too.

For instance, Intel spent close to \$8.5 billion in building a fabricator that could produce its flagship E5 chips. Add to it the cost of research and development and you're easily talking about an initial outlay of \$11.5 billion. But wait!!! If you make a mistake somewhere along the line, you'd have to add millions of dollars in additional expenses. And we haven't yet talked about time commitments. It easily takes 4 or 5 years to get the chips rolling off the assembly line. And so, it makes sense to let the other companies do all the heavy lifting while you enjoy a steady stream of licensing revenue.

Also, big tech companies, that use Arm-based processors value flexibility. They want to build on top of Arm's architecture.

It's one of the reasons why Samsung Exynos, Qualcomm Snapdragon and Apple A8 chips are all powered by Arm's technology. In effect, these big tech companies have a few peripheral ideas. Arm has the core ideas. Put them together and you have a winning combination.

Still not convinced? Just look at the numbers—As of February 2020, over 160 billion chips with Arm IP have been shipped worldwide. That's the kind of scale and influence we are talking about here.

So it makes sense to buy Arm, no matter who you are.

But it's NVIDIA that's buying the company and that means there's more to this story than what meets the eye.

NVIDIA is a pioneer in the graphics processing industry. They make state-of-the-art graphic cards—Those nifty devices that augment your computer's processing power with some extra zing so that you can play games that look and feel smooth. But NVIDIA isn't betting the future on gaming computers taking off in a big way. Instead, it's betting on cloud computing—specifically on developers looking to train their AI and Deep Learning models.

Let me explain.

For the past few years, a data revolution of epic proportions has changed the way businesses think and function.

Netflix wants to build a recommendation strategy for its millions of users. Uber wants to foresee demand using rider patterns. Google wants to create the most powerful chess engine that has ever existed. And as a consequence, you're constantly looking at developers building complicated models to glean insights from large data sets. Big companies training computers to solve problems using learning methods that mimic the human experience. And institutions flush with cash, actively seeking solutions that could help them expedite this process.

It just so happens that NVIDIA's GPUs are tailor-made for some of these applications. They can process multiple computations simultaneously and data centres running on these chips offer you the chance to own some of this computation power for a small fee. It's a win-win for all parties involved. In fact, revenues from the data centre business outperformed sales in the gaming division for the first time ever last quarter—between April and June.



VidyaVikas Education Trust's
Universal College of Engineering
Kaman Bhiwandi Road, Survey
No. 146 (Part), Village Kaman, Taluka Vasai,
District Palghar-401208,
Ph-+91 8007000755

website- www.ucoe.edu.in/www.universalcollegeofengineering.edu.in