How the humble wire harness could help kill off internal combustion cars

LONDON/BERLIN — The humble wire harness, a cheap component that bundles cables together, has become an unlikely scourge of the auto industry. Some predict it could hasten the downfall of combustion cars.

Supplies of the auto part were choked by the war in Ukraine, which is home to a significant chunk of the world's production, with wire harnesses made there fitted in hundreds of thousands of new vehicles every year.

These low-tech and low-margin parts — made from wire, plastic and rubber with lots of low-cost manual labor — may not command the kudos of microchips and motors, yet cars can't be built without them.

The supply crunch could accelerate the plans of some legacy auto firms to switch to a new generation of lighter, machine-made harnesses designed for electric vehicles (EVs), according to interviews with more than a dozen industry players and experts.

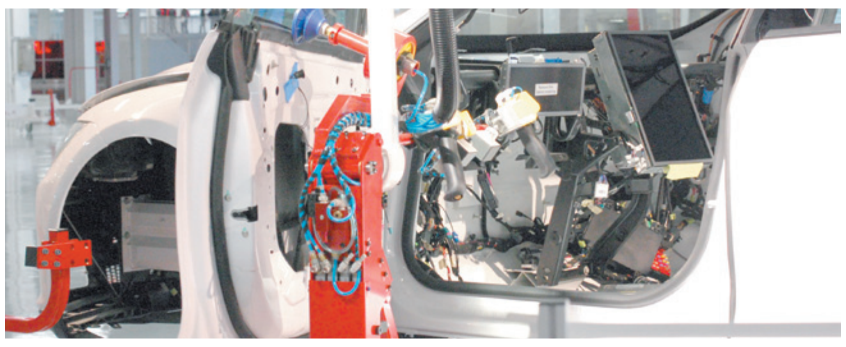
"This is just one more rationale for the industry to make the transition to electric quicker," said Sam Fiorani, head of production forecasting firm AutoForecast Solutions.

Gasoline cars still account for the bulk of new car sales globally; EVs doubled to four million last year, but still only comprised 6% of vehicle sales, according to data from JATO Dynamics.

Nissan CEO Makoto Uchida told Reuters that supply-chain disruptions such as the Ukraine crisis had prompted his company to talk to suppliers about shifting away from the cheap-labor wire harness model.

In the immediate term, though, automakers and suppliers have shifted harness production to other lower-cost countries.

Mercedes-Benz was able to fly in harnesses from Mexico to plug a brief supply gap, according to a person familiar with its operations. Some Japanese suppliers are adding capacity in Morocco, while others have sought new production lines in countries including Tunisia, Poland, Serbia and Romania.



MAURIZIO PESCE

TESLA Factory in Fremont, California

THE TESLA MODEL

Harnesses for fossil-fuel cars bundle together cables stretching up to five km (3.1 miles) in the average vehicle, connecting everything from seat heaters to windows. They are labor-intensive to make, and almost every model is unique, so shifting production is hard to do quickly.

The supply disruptions in Ukraine were a rude awakening for the auto industry. Carmakers and suppliers said that early in the war, plants remained open only thanks to the determination of workers there, who kept a reduced flow of parts moving in the face of power cuts, air-raid warnings and curfews.

Adrian Hallmark, CEO of Bentley, said the British luxury carmaker had initially feared losing 30%-40% of its car production for 2022 due to a harness shortage.

"The Ukraine crisis threatened to close our factory fully for several months, much longer than we did for COVID-19 (coronavirus disease 2019)."

Hallmark said finding alternative production sources was complicated by the fact the conventional harnesses themselves had 10 different parts from 10 different suppliers in Ukraine.

He added that the supply problems had sharpened Bentley's focus and investment on developing a simple harness for EVs that will be run by a central computer. The carmaker, a division of Volkswagen, plans a fully-electric lineup by 2030.

"The Tesla model, which is a completely different concept of wiring, we couldn't change to that overnight," Hallmark added. "It's a fundamental change in the way that we design cars."

The new generation of wire harnesses, used by electric natives like Tesla, can be made in sections on automated production lines and are lighter, a key factor because reducing an EV's weight is crucial for extending range.

Many of the executives and experts interviewed said fossil-fuel cars, which face looming bans in Europe and China, would not be around long enough to justify redesigns to allow them to use next-generation harnesses.

"I wouldn't put a penny into internal combustion engines now," said Michigan-based auto consultant Sandy Munro, who estimates EVs will make up half of global new car sales by 2028.

"The future is coming up awful fast."

'CHANGE OF PARADIGM'

Walter Glück, head of Leoni's harness business, said the supplier was working with carmakers on new, automated solutions for wire harnesses in EVs.

Leoni is focusing on zonal or modular harnesses, which would be split into six to eight parts, short enough for automation in assembly and reducing complexity.

"It's a change of paradigm," Mr. Glück said. "If you want to reduce production time in your car factory, a modular wire harness helps."

Among automakers, BMW is also looking at using modular wire harnesses, requiring fewer semiconductors and less cable, which would save space and make them lighter, according to a person with knowledge of the matter.

The person, who declined to be named as they not authorized to speak publicly, said the new harnesses would also make it easier to upgrade vehicles wirelessly — an area Tesla now dominates.

CelLink, a Californian-based startup, has developed an entirely automated, flat and easy-to-install "flex harness," and raised $250 million earlier this year from companies including BMW and auto suppliers Lear Corp. and Robert Bosch.

CEO Kevin Coakley would not identify customers but said CelLink's harnesses had been installed in close to a million EVs.

Only Tesla has that scale, but the carmaker did not respond to a request for comment.

Mr. Coakley said CelLink's new $125-million factory under construction in Texas will have 25 automated production lines which will be able switch different designs in around 10 minutes because the components are produced from digital files.

The company is working on EVs with a number of carmakers and looking at building another plant in Europe, he said.

While the lead time for changing a conventional wire harness can be up to 26 weeks, Mr. Coakley said his company could ship redesigned products in two weeks.

That kind speed is what legacy carmakers are looking for as they go electric, said Dan Ratliff, a principal at Detroit-based venture capital firm Fontinalis Partners, which was founded by Ford Chairman Bill Ford and has invested in CelLink.

For decades, the industry has not needed to move fast to rethink a part like the wire harness, but Tesla has changed that, Mr. Ratliff added.

"On the EV side, it's just go, go, go." — ***Reuters***

European Union fails to agree on Russia oil embargo

BRUSSELS — The European Union (EU) failed on Sunday to agree on an embargo of Russian oil, but diplomats but will still try to make progress ahead of a Monday-Tuesday summit on an exemption for pipeline deliveries to landlocked Central European countries, officials said.

However, a senior EU diplomat said there was "still too much detail to sort out" to hope for an agreement before European Union leaders gather in Brussels on Monday afternoon. The proposed sanctions on oil imports is part of the European Union's sixth sanctions package on Russia over its invasion of Ukraine.

The package includes cutting Russia's biggest bank, Sberbank, off from the SWIFT messaging system, banning Russian broadcasters from the EU and adding more people to a list of individuals whose assets are frozen and who cannot enter the EU.

The whole package has been held up by Hungary, which says an oil embargo would be a body blow to its economy because it cannot easily get oil from elsewhere. Slovakia and the Czech Republic have expressed similar concerns.

Talks on the oil embargo have been going on for a month with no progress and leaders had been keen to reach an agreement for their summit to avoid looking disunited in their response to Moscow.

To break the deadlock, the European Commission proposed that the ban apply only to Russian oil brought into the EU by tankers, leaving Hungary, Slovakia and Czechia to continue to receive their Russian oil via the Russian Druzhba pipeline for some time until alternative supplies can be arranged.

Budapest supports this proposal, officials said, but talks on Sunday snagged on EU financing that Hungary wants to boost oil pipeline capacity from Croatia and to switch its refineries from using Russian Urals crude to Brent crude, officials said.

This will be discussed by EU envoys on Monday morning along with the problem of how to ensure fair competition given the higher prices that member states reliant on shipped Brent crude would face as a result of the sanctions. — ***Reuters***

RCEP,

from S1/1

"We will do our duty. Pass or fail," Senate Foreign Relations Committee Chair Senator Aquilino Martin L. Pimentel III said in a Viber message to *BusinessWorld*.

Trade Secretary Ramon M. Lopez said the delay will lead to difficulties for investors as they will have to comply with the old rules instead of the simplified alternative provided by the RCEP trade deal.

"In weighing the cost and benefits of our participation in this agreement we should look at it from a holistic point of view. Will this be beneficial to the whole economy? It includes trade facilitation rules, liberal rules of origin, e-commerce, competition, and IP (intellectual property) protection commitments, support for SME development, as well as opening up of trade services," Mr. Lopez said.

"These other elements are as important as tariff liberalization because they provide stability in the business environment. Our participation in this mega trade deal will further support the country's economic development."

Many multinational companies are waiting for the Philippines to join RCEP before deciding to invest, he added.

"If we delay joining here, our opportunities to export and bring our products to other RCEP countries which would have lower entry-level by lowering the tariff level of our products, we won't be able to experience," he said, noting fears that the country's market may be diverted to other RCEP countries due to preferential arrangements.

RCEP has simplified and unified rules that allow exporters and stakeholders to comply with only one procedure instead of several rules listed in various free trade agreements with other economies.

RCEP took effect on Jan. 1, and is already in force in Australia, Brunei, Cambodia, China, Japan, Korea, Laos, New Zealand, Singapore, Thailand, and Vietnam.

President Rodrigo R. Duterte signed the trade deal on Sept. 2, but RCEP requires concurrence by the Senate.

DTI Assistant Secretary Allan B. Gepty said the country will miss out on the enhanced market access under the RCEP, which includes agricultural products such as durian, papaya, preserved pineapple, coconut juice, coffee, canned tuna, and dried tilapia.

"More than this, our competitors in ASEAN (Association of Southeast Asian Nations) will have the advantage in market access and resultantly they will be more competitive. Our neighbors in ASEAN, will enjoy the benefit of convenience in doing business and trade in the RCEP region while our stakeholders will have to contend with the different ASEAN plus one FTAs," he added.

Mr. Gepty said the decision to ratify RCEP is only a choice between maintaining tariff protection in the 33 products, which is only equivalent to 0.8% of the country's total imports and 1.9% of total agriculture tariff lines, and receiving the benefits and opportunities on services, investments, exports, trade facilitation, ease of doing business and conducive business environment brought about by the United Nations-backed FTA.

Economic managers said joining RCEP will preserve the current preferential rates for 98.1% of tariff lines, which corresponds to 228 commodities or $16.9 billion of imports.

"If we join the RCEP region with the safety nets and all the flexibilities that we have gained, it's so easy to navigate, adjust and in parallel, make some adjustments. But if we will approach it sequentially, I think it will be too late for us to join since other RCEP parties will gain the advantage," Mr. Gepty said.

Socioeconomic Planning Secretary Karl Kendrick T. Chua said the Philippines will lose a "golden opportunity" to take advantage of the opportunities from the fast-growing Asia-Pacific region if it fails to join RCEP.

"We want to learn and the best way is not to be protectionist or inward-looking. It is to get into the global arena, compete and learn what the other countries are doing, and improve ourselves further," he said.

Last week, President-elect Ferdinand R. Marcos, Jr. said he wants to review the RCEP to determine whether the agriculture sector is adequately protected.

ADB,

from S1/1

The ADB said the additional supply of long-term finance will help the country address an infrastructure financing gap estimated at around P2 trillion a year up to 2030.

"As the Philippines steers its economy towards sustainable and resilient growth after the devastating COVID-19 pandemic, it will require various sources of long-term financing to support the recovery of its industries and micro-, small-, and medium-sized enterprises; provide social protection; and fund its infrastructure development priorities," ADB Principal Financial Sector Specialist for Southeast Asia Stephen Schuster was quoted as saying.

Mr. Schuster said a more diversified investor base will ease fiscal constraints in the country.

The further development and growth of the insurance and pension sectors can fuel economic growth and reduce poverty, the ADB said.

The policy loan will help build an enabling environment for more investment products aimed at long-term investors.

Compared to its peers in the region, the Philippines' pension funds and the insurance sector accounts for a combined 12% of the country's gross domestic product, versus Thailand's 30% and Malaysia's 80%.

"There is huge potential in tapping this sector for long-term funds since they have long investment horizons and low leverage. These investors can offer better debt pricing and longer maturities in local currency and are less likely to sell or retreat during short-term market corrections," ADB said.

The ADB is one of the Philippines' biggest sources of official development assistance, with average annual lending of $1.9 billion in the last five years.

In 2021, the ADB lent around $2.2 billion to the Philippines, the bulk or 92% of which went to pandemic response programs. — **TJT**