

THE REINFORCER

KORDSA GLOBAL | BULLETIN | N.04 | 2016 | TURKEY

Determined to Create Value

KORDSA GLOBAL

GREEN CORDS | A RENAISSANCE
IN THE TIRE BUILDING

OPEN INNOVATION,
WHY SHOULD WE?

KORSA GLOBAL:
INNOVATION STRATEGY CHAMPION

CREATING COMMON BENEFITS:
OPEN INNOVATION



Green Revolution

MISSION

Deliver high value added reinforcement solutions, globally.

VISION

Agile Kordsa Global in high value businesses for sustainable growth.

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“I am proud to say that, 2015 was a remarkable year in many aspects for Kordsa Global. Improvements in safety, quality and productivity and the new continuous improvement programs in our pipeline guarantee a sustained product and service performance in the future.”





CONTINUOUS RENEWAL THROUGH INNOVATION, A DISTINCT SOURCE OF DIFFERENTIATION

CENK ALPER

CEO

2015 has been yet another challenging year where global growth slowed down especially in China and the countries of the Asia Pacific Region. Brazil and Russia continued to struggle with macroeconomic problems. Political unrest continued in the Middle East. US and Euro Zone recovered from the slowdown. FED interest rate hike expectations still pose a major challenge for all economies.

Continued low oil prices have impacted all commodity prices and net importer countries benefited from the current level of oil prices.

On the other hand, major technology trends and new business model innovations are affecting our lives individually and as corporates more than ever.

In 2015, global light vehicle and passenger car tire markets grew slightly with the help of the recovery in Europe and US. On the other hand, OTR tire manufacturers are still struggling with the decrease in shale gas and mining activities. Competition between global and emerging tire manufacturers are increasing on cost and innovation dimensions more and more.

The importance of long term strategic partnerships in the tire industry between tire manufacturers and their suppliers are becoming more critical. Tire manufacturers are partnering with suppliers that can deliver innovations and cost effective solutions simultaneously in the long run. More and more, winning tire manufacturers are valuing total cost of ownership over lower purchasing prices.

I am proud to say that, 2015 was a remarkable year in many aspects for Kordsa Global. Improvements in safety, quality and productivity and the new continuous improvement programs in our pipeline guarantee a sustained product and service performance in the future. The new wave of TPM activities will further accelerate operational excellence.

We have become the best performing R&D Center in textile Sector for the third year in a row, and more importantly, were selected the best R&D Center of Turkey across all industries. This is a big source of pride. Following these prestigious awards, we received the Innovation Strategy award by Turkish Exporters' Assembly. We ranked 6th in the number of patent applications.

I am glad to inform you that we published our first Sustainability Report and announced our commitments for economic, environmental and social sustainability. We are happy to see that our sustainability efforts have been crowned with many awards such as the Etika 2015, Energy Efficiency in the Industry, Environmentalist of the Year, TIDE Corporate Awareness, and the Most Innovative Process for Sustainability Award.

In our adjacent growth areas, construction of the Composite Technologies Center of Excellence continues in full speed, which will be a unique model for industry university collaboration in Turkey.

We are looking forward to meeting you at the Opening Ceremony in May.

In construction business, Kratos microfibers bring new opportunities in the soil reinforcements market with their superior performance.

Dear readers,

In 2015, we worked very hard in harmony with all our stakeholders and satisfied the financial expectations of our investors.

I am confident that our performance and conviction about growth will enable us to deliver our 2016 budget and reach our vision of creating an "agile Kordsa Global in high value businesses for sustainable growth".

Together we are strong and we will be stronger.

KORDSA GLOBAL

News Highlights

2nd Half of 2015

Turkey's R&D Champion Kordsa Global



Ministry of Science, Industry and Technology awarded the Best Performed R&D Center of the Year at Private Sector R&D Centers Summit and Exhibition. Kordsa Global received the Best Performed R&D Center of Turkey. Our R&D Center is also ranked Number 1 in textile category for a three consecutive years.

At the summit, Kordsa Global received two awards, first place in all R&D Centers and the first place in textile industry; became the R&D champion of Turkey.

“ **Kordsa Global CEO Cenk Alper**, said the following about the awards:

We are proud to be ranked the first R&D Center at Turkey. There is an intense competition amongst all R&D centers. Our R&D efforts are coming from a 42 years' history. Since 2007, we are systematically working under our R&D Center's roof. Kordsa Global R&D Center collaborates with universities both in Turkey and abroad to maintain its technology leadership. Technology licensing is one of our main subjects since 'open innovation' concept is the baseline of our R&D approach. Today, our opponents are willing to construct their products by using Kordsa Global technology. These days, we are working on its economic model. We will export technology not only to our own partners but also to our competitors. We believe this to be an important step for Kordsa and Turkey. Our goal is to bring new and innovative products arising from our day to day R&D activities to the whole world. ”

“ **Kordsa Global CTO İbrahim Yıldırım**, made the following remarks:

Kordsa Global R&D Center's priority is the efficiency. Ranking the first R&D Center among all R&D Centers is an indication of our consistent and stable operations. We develop processes and technologies at Kordsa Global R&D Center for tire reinforcement, new composite products and the construction reinforcement market. The majority of our R&D works aim to bring new technology and competencies to the industry. Our R&D center employs 78 brilliant minds which helps spread out our technology from Turkey to the world. The number of new products we offer to the market exceeded 12 since 2008. Our portfolio of international patent applications has reached to 236. This year we climbed four ranks in Turkish Patent League and have the honor of taking the sixth place in the first six months of 2015. Composite materials are the next frontier for us. We established our Composite Reinforcement Business Unit in April 2014. In December 2014 we broke ground for our Composite Technologies Center of Excellence in Technopark Istanbul with Sabanci University. We will develop and present composite products, which are used in aerospace, sports, automotive, marine and construction to the world. ”

Kordsa Global Ranked Number One in the Innovation Strategy Category of TIM

The winners of Improve Inovalig Awards have been announced. Awards are organized by Turkish Exporters Assembly (TIM) as part of the Turkey Innovation Week to support innovative activities. Kordsa Global has been honored by being ranked the first in the Innovation Strategy category.

Kordsa Global has been ranked as the 1st in the Innovation Strategy category at the 4th edition ceremony held on 5th of December with the participation of the President Recep Tayyip Erdoğan and Minister of Finance Mustafa Elitaş. Cenk Alper, the CEO of Kordsa Global received the prize from President Recep Tayyip Erdoğan. Mr. Erdoğan celebrated Kordsa Global's success.



“ **Güler Sabancı, the Chairman of the Sabancı Holding,** referencing Kordsa Global's achievements at innovation and R&D, thanked to Kordsa saying that:

Our company Kordsa Global has always been a pioneer in its field. Companies with R&D and innovation DNA and long-term innovation strategy will ensure the sustainable success. To demonstrate global competitiveness and to have a voice in the global economy, Turkey has to penetrate the innovation culture to its DNA and continued: “My congratulations to TIM for this successful and incentive organization and my congratulations also to all Kordsa Global employees for this award. ”

“ **Sabancı Holding Industry Group President Mehmet Pekarun,** expressed his greetings and appreciation to Kordsa Global:

Our vision as Sabancı Community is to provide permanent superiorities by creating differences. Kordsa, with its passion to expand in new fields and business models as well as its ongoing businesses, has been a leader and an example in the corporate entrepreneurship. I congratulate Kordsa Global, an innovation pioneer both in Turkey and in the world and our beloved employees with all my heart. ”

“ **CEO of Kordsa Global, Cenk Alper,** conveyed his opinions about the award:

We are proud to be chosen number one in Innovation Strategy category of TIM Improve Inovalig with our innovative inventions and R&D practices. As a Turkish company, we are exporting technology to the world. Therefore we consider Improve Inovalig Award, as a reward for this achievement. To sustain its leadership, Kordsa Global R&D Center collaborates since 2008 with leading universities in their fields both in Turkey and abroad. Now, we discuss technology licensing within the framework of “open innovation”. Our perception of excellence which started with product and process innovations, has gone beyond our company, providing an open platform enabling collaborations with other companies. Our competitors demand to use our technology. Just like in R&D, we aim to leave our mark on not only on Turkey but also on the global market in “open innovation”. We are thankful to the Turkey Exporters Assembly who deems us worthy of this valuable prize. We aim to convert the R&D generated inventions into innovative products -which we consider as a continuous business- and present it to the World. ”



Kordsa Global and Inter Kordsa received ISO 50001 certification



ISO 50001 certificate standardizes the efficiency of energy consumption, systems and processes while improving energy performance among organizations.

Energy management policies issued at Kordsa Global and at Inter Kordsa have been awarded the ISO 50001 certification. Kordsa Global became one of the few Turkish companies owning ISO 50001 certificate through passing the audits made by Bureau Veritas Quality Investigation (BVQI). The certificate will remain valid until 2018. Meanwhile, Kordsa Global's Germany plant, Inter Kordsa also passed the audits made by TÜV International Certification, and also received ISO 50001 certification.

Kordsa Global adopted energy management as a standard operation procedure implemented in all areas, thus receiving the ISO 50001 certificate. While receiving the certification, energy efficiency investments for the future were also underlined.

Kordsa Global: Among the Champions of Turkish Patent League

A subsidiary of Science, Industry and Technology Ministry, Turkish Patent Institute announced the first 10 organizations who applied for most number of domestic patents for the period January-June of 2015. Kordsa Global was listed sixth in the list with 14 pending patent applications within six months. Taking the 10th place in 2014 listing, Kordsa Global rose up four places in the League in a year.

“ Sabancı Holding Industry Group President Mehmet Pekarun, made the following remarks:

Kordsa Global stands out with its new inventions in an intensely competitive industry that has reached a certain maturity. It is a great source of pride for us to create inventions every year and rise up to a high level in Turkish Patent League. We value R&D work at Kordsa Global as a never ending effort. We transform new discoveries into new and innovative products. I believe we will reap the fruits of our success while delivering those around the globe. Congratulations to Kordsa Global Technology team, who accumulate great achievements in the sector every year. ”



“ Kordsa Global CEO Cenk Alper, said the following:

As an industrial company, we have stakes in R&D for 42 years. We systematically follow our R&D work at our R&D center since 2008. Kordsa Global R&D Center continues its technology leadership, and performs collaborations with universities in Turkey and abroad. Today, Kordsa Global transformed into a company that creates new technologies in Turkey to the world. Our main goal is not just manufacturing the product. We aim for innovation through our processes and technology. We serve the tyre industry giants with our innovative products, technology and processes. Our portfolio of international patent applications reached 236, together with our new pending applications. These efforts made possible for us to rise four places up in the Turkish Patent League in 2015, where we ranked 10th last year. With 14 applications in the first six months we are proud to be the 6th in the league. Our goal is to rise even further, and to provide new capabilities and technologies to the industry with our new inventions. ”

2014 Export Champions Award For Kordsa Global



Turkey Exporters Assembly (TIM) every year issues a report which analyzes companies' exporting performance in the former year and rewards the best performed companies. In 2015, ceremony was held on June 21 and hosted by TIM President Mehmet Büyükekşi. Top three companies in 26 different industries, which showcased the best export performance in Turkey in 2014, were awarded at the ceremony day.

We, as Kordsa Global, received a bronze prize in textile and raw materials category for our contributions to the foreign trade in Turkish economy. Vahe Hanamirian, Global Accounts and Marketing Director of Kordsa Global, received the award from Customs and Trade Minister Nurettin Canikli and TIM President Mehmet Büyükekşi.

Kordsa Global listed in İstanbul Stock Exchange 100 Index



İstanbul Stock Exchange 100 Index listing (BIST 100) is the basis for İstanbul Stock Exchange's trading market, seen as a barometer of the market. BIST 100 increases the visibility of the companies and draws attention from investors on an increasing rate. As a result of investor interest, market value and volume indices of a company located in the index is higher than unlisted companies.

20% of Sabancı Holding's Kordsa Global shares are traded in İstanbul Stock Exchange, and trading volume reached 29%, marking an increased market value for Kordsa Global. With this success Kordsa Global has entered for the first time in the BIST 100 index and will be listed in BIST 100 from July 1 to September 30. Increased investor interest in Kordsa Global's growth was one of the key factors in this success. Trading volume and continuous growth in the past six months, in addition to volume and pricing stability, Kordsa Global aims to earn a permanent listing in İstanbul Stock Exchange 100 index

By being listed in BIST 100, Kordsa Global increased brand awareness and will draw attention from investors on an increasing rate. The index constitutes a weighted share in investment funds, which will enable Kordsa Global's shares to be traded by investment funds as of July 1, 2015. Investment fund activity is also expected to contribute the performance growth of Kordsa Global indirectly.

Indo Kordsa celebrates 30th anniversary

Kordsa Global's Indonesian plant Indo Kordsa celebrates its 30th year, at the same time reaching its achievement of 2 million incident-free working hours.

Indo Kordsa started production with a manufacturing area of 57.170 square meters and after the TCF2 expansion, has increased its area to 86,391 m2 square meters of production area. Indo Kordsa has doubled its production since establishment to current date. TCF production increased from 18 kilotons to 42 kilotons, while polyester yarn production increased from 12 to 39 kilotons.

Indo Kordsa supplies to more than 30 companies in 12 countries.

30 years of social investments

In 30 years of activity, Indo Kordsa invested heavily in corporate social responsibility projects such as constructing a community health center, monthly food donations, road and infrastructure repairs with surrounding companies, contribute in 16 house reparation as inaugurated by Bogor Mayor, kurban slaughtering and meat distribution, contributes to village offices repair, printing and distribution of notebooks to schools to support Bogor Regency Program, social health activities support like free circumcision, blood donations in cooperation with the Indonesian Red Cross, monthly scholarship of 40 orphans of surrounding area.

For the anniversary festivities, Indo Kordsa organized a sports and arts program. Around 500 employees took part in activities such as football, fishing, badminton, fun walk, fun bike, music festival, chess, ping pong, and photography.

Sustainable Development Turkey: Best Environmental Innovative Application

Best practices that contribute to sustainable development were awarded at the second Innovative Sustainability Practices Competition that is organized by Business Council for Sustainable Development Turkey (SKD). Kordsa Global received the grand prize in "Great Company - Best Environmental Innovative Application" category.

The competition was organized by Innovation Working Group of SKD for the second time this year. At the ceremony, 17 projects competed in the finals and best practices that contribute to sustainable development with innovative applications were awarded. Kordsa Global was awarded the grand prize in "Great Company - Best Environmental Innovative Application" category with the project that aims at reducing the use and consumption of energy in twisting machines. Kordsa Global proves that it adopts innovation to ensure operational excellence as well as products and services.

Kordsa Global CEO Cenk Alper, emphasized the role and responsibility of private sector through achieving a balance in requirements of human life and sustainability of natural resources with the aim of creating a common future.

“ Cenk Alper continued his words with Kordsa Global R&D Center’s efforts to fulfill this task:

Kordsa Global R&D Center collaborates with esteemed universities both in Turkey and abroad to maintain our technology leadership. Innovation ideas started with product and process innovations, but now stepped out from companies into the open space as sustainable innovation and it has become a platform available to other companies, and turned into collaborations. Today, even our competitors request to use our technology. As with R&D, we are working with the target of leaving our mark in open innovation not only in Turkey, but also in the global market. I would like to thank Business Council for Sustainable Development Turkey for the valuable award presented to Kordsa Global. ”



Creating Common Benefits: Open Innovation

Kordsa Global gathered business and academia partners to talk about open innovation at 24th Quality Convention in Istanbul and hosted “Collaborations Towards Excellence” session at the 24th Quality Convention in Istanbul. Session was moderated by national broadcaster, Şirin Payzın. Kordsa Global CEO Cenk Alper, Prof. Dr. Hasan Mandal from Sabancı University, Assoc. Prof. Dr. Ersin Acar from Boğaziçi University, and DuPont Global Marketing Director Imre Horvath were present at the session. Open innovation between DuPont Protection Technologies and Kordsa Global, as well as value added technologies used in reinforcement products were shared as a success story.

Global partnership brings the power of two giants

The adventure began with EFQM excellence model in the 1980s and evolved into the open innovation concept and mutual collaborations. Kordsa Global’s and DuPont Protection Technologies’ excellence adventures intersect with the principle of open innovation in their shared ecosystem. The in-house technologies developed by two companies are amalgamated to form new technologies.

Hybrid technologies; tire reinforcement market’s new trend, is at the heart of Kordsa and DuPont’s cooperation. DuPont Protection Technologies’ reinforcement materials met with Kordsa Global’s reinforcement materials in the best way for tire production. This helps the tire performance to improve. This hybrid reinforcement material is used in high-speed performance tires and aircraft tires.

Kordsa Global and DuPont are the two giants of the reinforcing materials market. They both become much more active players with synergistic efforts. These two giants offer value added products to market, especially Indian and American market, by their technological innovations. Truck tires and construction equipment tires in India, and aircraft tires, high-performance tires, and racing car tires in the US are examples of projects and solutions executed together.

Excellence towards academia and industry cooperation

Composite reinforcing is another value-added area where Kordsa innovates by collaborations. Kordsa Global founded the Composite Reinforcement Business Unit in 2014, and focused on growth in this area. In December 2014, the company, in collaboration with Sabancı University broke ground for Composite Technology Center of Excellence in Teknopark, Istanbul. Kordsa Global Composite Technology Center of Excellence will be the first in Turkey, where industry and academia meet under the same roof. 10 professors and 80 doctoral students will work at the center. Kordsa Global production facilities, joint R & D laboratories and Kordsa’s headquarters will also work together at the same center. The center will become active in April 2016, with an initial investment of USD 30 million.

Composite materials are 10 times lighter and 3 times stronger than metals. They can be used in aviation, sports, automotive, marine and construction industries.



Assoc. Prof. Dr. Ersin Acar
Boğaziçi University,
Professor

Prof. Dr. Hasan Mandal
Sabancı University,
Professor
Council of Higher Education,
Member of Executive Boards

Şirin Payzın
Broadcaster

Cenk Alper
CEO, Kordsa Global

Imre Horvath
Global Marketing Director,
Dupont Global



Dr. Aad M.M. Vijverberg (1958)
works as consultant and lecturer for companies and business schools in the areas of Strategy, Innovation and Entrepreneurship in the Netherlands and abroad. Open innovation and its differences in manifestation per sector is one of his interests.

Piet Rademaker was Commercial President at VMI Holland till his retirement in 2007. He now is in an advisory role as independent consultant.

OPEN INNOVATION, WHY SHOULD WE?

DR. AAD M.M. VIJVERBERG

PIET RADEMAKER

A decade after Chesbrough published his book “Open Innovation: The new Imperative for Creating and Profiting from Technology” the topic of Open Innovation has once again become a hot topic. When you Google open innovation, more than 80 million hits appear. The EU Commission promotes Open Innovation at its website. Many a symposia are dedicated to the subject, a great deal of academics publish on the subject with even a bigger number of consultants ready to reveal the secrets and advantages of Open Innovation. Is it a coincidence that this hot topic of management literature seems to pass by the Tire industry without leaving any ripples in the pond? A matter of common sense, or a serious oversight?

Open Innovation is, not so surprisingly, the opposite of Closed Innovation, and preaches input from more than one party in any development process. It requires the same for output. The result shall be owned by the participants of the Open Innovation trajectory. Because many people studied the concept and published their findings, a myriad of ways to practice Open innovation have been described, each claiming to be the right one.

But it is translated into practice as cooperation to attain innovation in development projects in a number of set-ups such as companies cooperating with universities or other know-how centers; companies in the same level of the supply chain joining forces to tackle a technical challenge; or a company joining efforts with one or more of its sub-suppliers. Reading this you may realize you have practiced Open Innovation long before the gurus turned it into a hype.

The difference between “old-fashioned” cooperation and Open innovation lies in execution. “Open” means that many can join the party, and many can leave the party, with a result to their liking. A way of dealing with Intellectual Property Rights that works fine in Palo Alto and its vicinity, where internet applications and software are developed... Wikipedia is a prime example of Open Innovation. The other major difference is the fact that in Open Innovation results can be used by the partners, but if results are not useful for any party involved, parties can turn such results into commercial commodities by selling their know-how. Chesbrough saw this option as an important one because he noticed that many patents were not turned into commercial products. Little did he know about the many different reasons patents were filed: to block competitors from doing what they wanted to; to confuse competitors; as a pre-emptive action to be able to launch new technologies without the risk of infringement, and so on.

Does a certain skepticism towards Open Innovation imply that our industry can ignore the concept altogether? No, it does not. The big challenges we face require that input from more than one source is required to solve problems. Input in the form of know-how in a field, in which there are no experts in a company, can help tackle a given problem far more efficiently. It is not only knowing the facts and relations that counts, more importantly, it is knowing how to interpret research, how to develop, and what pitfalls to avoid. Globalization of the industry coupled with increasing competition, i.e. the urge to be the first on the market, ask for focused R&D executed with great efficiency.

But before the quest for the right partner(s) begins, we need to first understand what we want to accomplish, and how the various departments in the organization can contribute to our project. Innovation requires input from Sales. But also from Purchasing and Production Departments. They can propose guidelines and targets, which may be easily overlooked by R&D. And they can also pinpoint the right partners.

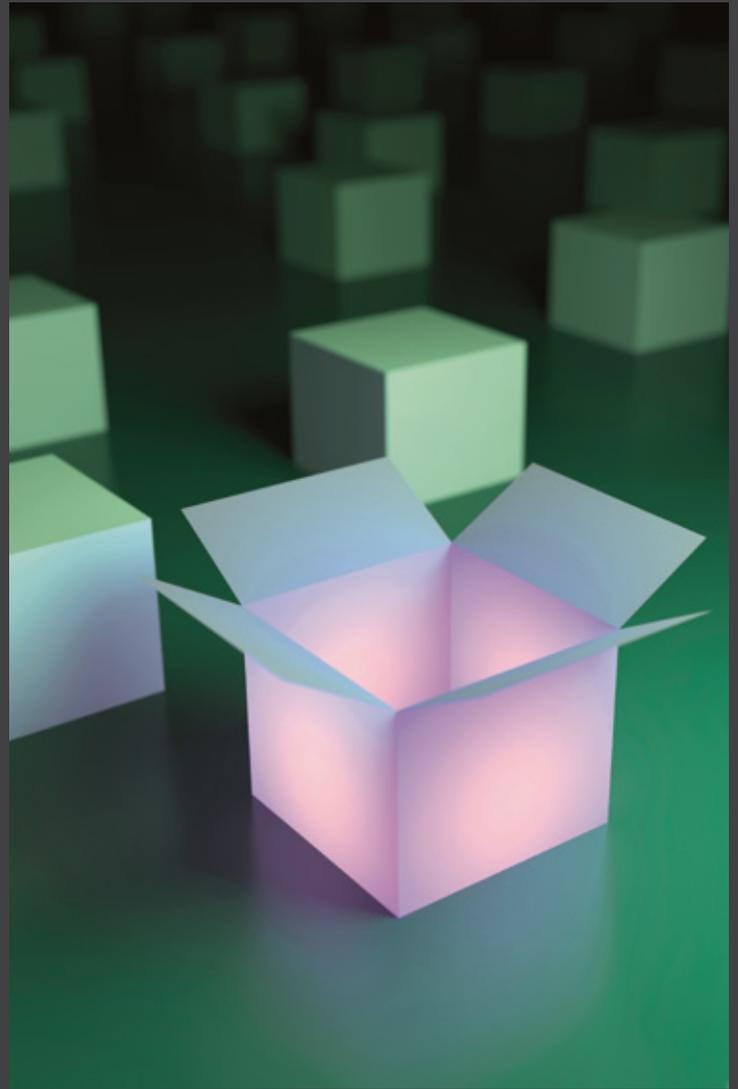
Involving a University can be the most straightforward way to scout expertise from outside. This usually requires the task at hand to present certain scientific challenges, enough to attract the curiosity of higher education institutes. It also requires steering and controlling up to a certain degree, in order to ensure that work remains focused on the goals defined at the outset.

In cooperation projects with a company and its supplier(s) as stakeholders, problems may arise from the seemingly divergent interest of the two parties. Whereas one party may demand exclusivity on the result; others may rather have the whole market open for them. Let's take the hypothetical example of a cooperation project between a tire company and a car manufacturer. From a technical point of view, this would most likely bring good results. But what if the tire manufacturer objects to any monopolistic position, which may arise and be exploited by its supplier? The tire manufacturer could not get exclusivity for the supply, nor could he ask for sales to be put to market.

With the new demands placed on tires, such as labelling and other regulatory requirements, cooperation between suppliers of raw materials and machinery has become increasingly important if companies want to place new options on the market. It is ironic to note that the EU, in its desire to promote better environmental properties for tires, chooses to introduce a labelling system to make this happen. But labelling is a major instrument in the sales of tires. Therefore labelling did, indeed, turn the market into a place where one can distinguish oneself from others. So the effect is heavy competition across tire manufacturers using labels as an instrument. Consequently, developments in this area are very much lead by individual companies, and there is hardly any exchange of information on the matter across the industry. This is all due to the fact that EU, which promotes Open Innovation, has decided to let individual advantages rule the game.

Machinery suppliers should be able to handle whatever the material suppliers develop in order to enable their customers to respond to new demands. This sometimes requires the concerted effort of the entire supply chain. And machinery suppliers do cooperate in various ways with material suppliers to offer to the market a joint solution. Here again, the major stumbling block could be the rights each party gets to enjoy in exchange of the risks taken, and the effort and money invested.

Could there be cases when real Open innovation might actually be the best option? Yes there could be. That is, if new regulations require a coordinated effort by all suppliers of the automotive industry, and if the nature of the final results allows them to be shared by all parties without losing out on competitive advantage. Or if a new standard is to be developed... A standard which would be widely adopted by the market when most suppliers can offer it. Joint efforts are the most logical solution, and barriers have to be overcome.



Conclusions are:

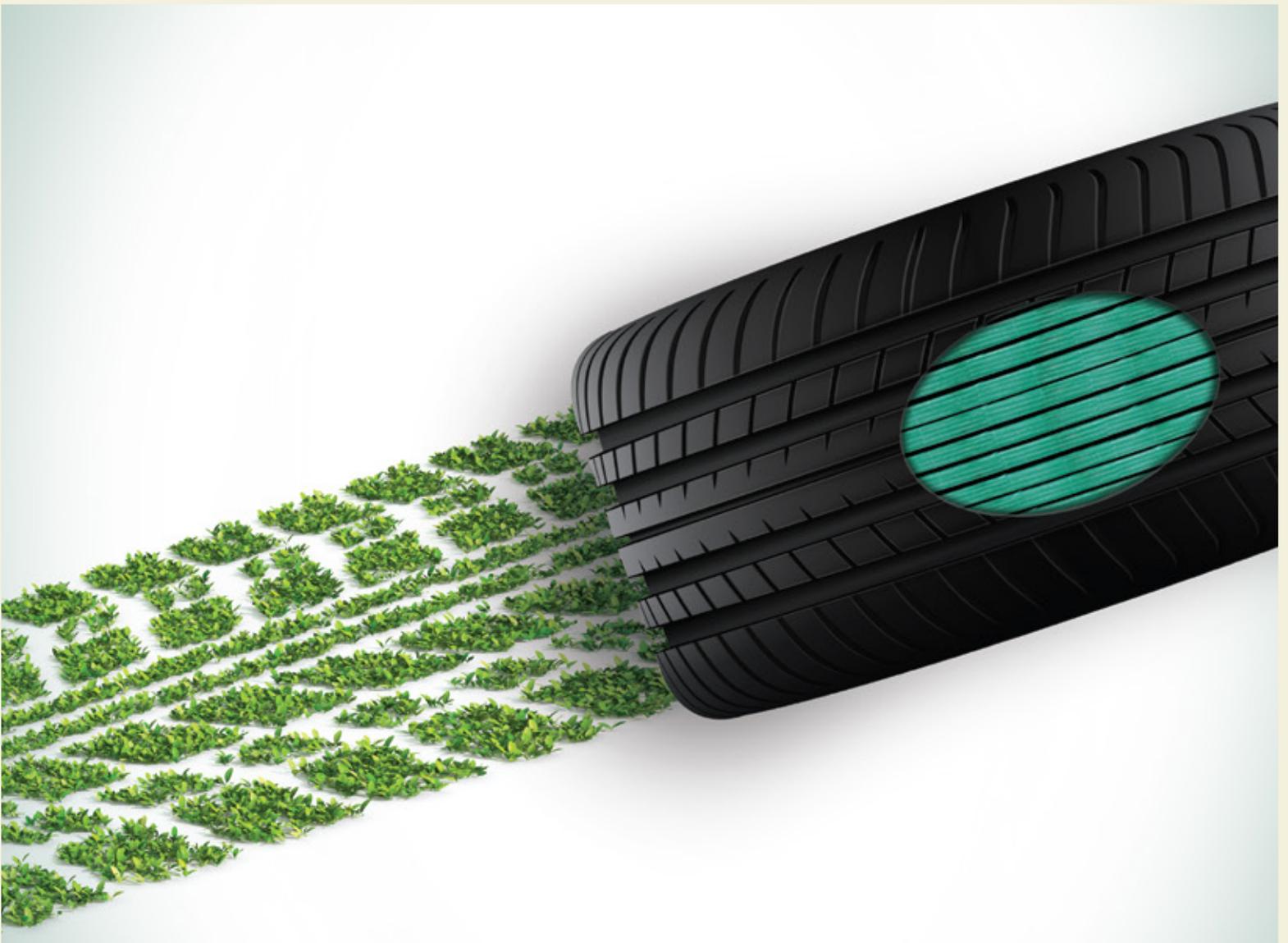
Be aware of those who borrow your watch in order to tell you the time, and watch out when someone tells you that you have a problem, a problem which only the messenger can solve. Increased cooperation across the suppliers of the tire industry could help offer new options to their common clientele.

Tire manufacturers should not hesitate to cooperate with suppliers in order to innovate in a more efficient way.

But in Open Innovation the protection of Intellectual Property Rights is something not to be overlooked. We find ourselves in a world where there is a growing tendency to "borrow" know-how from competitors. This does not only constitute theft, but also may have a negative impact on the reputation of the original products as there would be copies of the originals on the market. Let the lion lie down with the lamb - as long as the latter keeps a watchful eye all through the night.

In Open innovation, there is need to get creative and find ways to reward all parties involved. A reward that reflects the significance of the input. Without such an incentive for all parties involved, there is little chance of final success.

“As Reinforcer, Kordsa is now ready to reinforce the tire industry with its sophisticated green dip formulation; not only to create value for its customers but also to create value to the community it belongs to..”





GREEN CORDS: A RENAISSANCE IN THE TIRE BUILDING

BURAK AKÇAEL

Category Manager, Special Tires

Bonding of textile fibers to elastomeric matrices has always been important to get satisfactory performance of many heavy-duty Mechanical Rubber Goods especially like Tires.

Adhesive formulations with high fatigue resistance and compatibility with different kinds of rubber compounds are the most critical factors expected from an adhesive system.

Treatment of the cords with Resorcinol-Formaldehyde-Latex (RFL) solutions to reach satisfactory adhesion to rubber is the general practice in the industry.

Among the ingredients, Formaldehyde is the simplest but highly reactive and toxic organic compound.

Despite increasing environmental and safety concerns, no other adhesive system had so far been developed as an alternative to Resorcinol-Formaldehyde-based adhesives, which have been widely applied since 1935.

However, in the coming years and with the upcoming regulations, Formaldehyde-free adhesives or adhesives with reduced Formaldehyde emissions are expected to strengthen their position in the market.

Similarly, acceptable levels of Formaldehyde emissions from products such as wood panels have been continuously reduced.

To meet future regulatory requirements, Kordsa Global developed a new RF-free adhesive dip solution system under the "Green Products" program.

Instead of toxic Resorcinol and Formaldehyde, the new formula uses greener chemicals, which are in conformity with REACH regulations.

Latest performance tests show us the mechanical properties of RF-free dipped cords are either superior or comparable to those conventional RFL-dipped cords.

Tire Test Results:

Green Cords Tire Test Report – FEB / 2016

(REF: P 195 65 R/15 H speed rated tire tested by one of our customer in US)

Overview:

Goal: Compare adhesion and failure mode of RFL and Non-RFL cord dip

Evaluate dips on single-end-cord cap strip via DOT type testing on radials

- i. DOT H Rating test to failure
- ii. DOT H Rating test, one step prior to failure

Conclusions:

(Voice of the Tire Manufacturer)

The scope of these tests was to compare adhesion between RFL dipped cap strip cords and RF Free dipped cap strip cords. Lab tested adhesion values were equal between RFL and RF Free. The tire used for the study is an H Rated radial which must pass 130 mph. All of the tires tested passed H rating and passed up to and including 160 mph. The RFL tire failed in the 166 mph step. Failure was between the belts. No tire showed adhesion failure at the cap strip. In our opinion, both the RFL and RF Free dips provide sufficient adhesion for use in production tires.

Green Tire:

Beyond this progress, transforming this green cord approach to Green Tire is now being discussed. Thanks to growing public awareness on the topic, adhesion for use in production tires.

In the near future, we can expect an additional parameter on the labels to contain specific information regarding «Green Performance», which consists of Green Raw Material Selection during production processes.

Furthermore, we should not be surprised when we encounter Green Tires on the roads to emphasize environmental friendliness.

As Reinforcer, Kordsa is now ready to reinforce the tire industry with its sophisticated green dip formulation; not only to create value for its customers but also to create value to the community it belongs to...

To discover more about Green Cord developments and sampling, please kindly contact with us; burak.akcael@kordsaglobal.com



LONG TERM SUCCESS THROUGH SUSTAINABILITY

YUSUF AKKOR

Global and Izmit SHE and Sustainability Manager

We proudly presented to our stakeholders our first sustainability report that reflected our economic, environmental and social performance at Kordsa Global for the period between 2013 and 2014. The aim of the report was to offer our key stakeholders the opportunity to assess the steps we took to measure, monitor and improve the way we managed the impact of our activities.

We prepared our report in line with the GRI (Global Reporting Initiative) Guidelines and in compliance with the GRI G4 Core level.

In the process of identifying our aspects for strategic sustainability, we took into consideration the GRI principles of materiality, stakeholder inclusiveness, sustainability context and completeness, as well as the principles set out in the UN Global Compact we signed during the reporting period, and the International Finance Corporation's (IFC) Performance Standards on Environmental and Social Sustainability that were established to pinpoint, assess and manage social and environmental risks in project finance.

Additionally, we proved our commitment to global responsibility principles in 2013 by signing the UN Global Compact that covers human rights, labor, environment and anti-corruption in Ten Principles. Our first sustainability report also reflects and satisfies all needs of UN Global Compact Principles.

Our goal is to turn our sustainability reports into a major communication tool to examine the priorities of our stakeholders with regard to sustainability and to share our best practices in finding solutions to issues today and in the future.

We ramped up our activities to further improve our sustainability strategy. In addition to the Kordsa Global Sustainability Task Force, all our stakeholders supported our efforts to design and implement the following initiatives:

Economic Initiatives

In 2014, while we increased our profitability in tire reinforcement materials, our main line of business, we also made an ambitious entry into new markets in order to ensure sustainable growth, and had a financially successful year.

One of the most significant developments of 2014 was the inauguration of our second plant in Indonesia as an extension of our investments in Asia; we further reinforced our position with regard to proximity to market, and supply capabilities to customers.

Another ambitious, novel and unique business model, embodied as a project to penetrate the composites market, became official with the investment we made in the Composite Technologies Center of Excellence, the groundbreaking ceremony of which took place at the Istanbul Teknopark. This is a pioneering step toward Industry-University Collaboration in Turkey, which not only serves to conduct research and development, but also offers education and production under the same roof.

Social Initiatives

We are content that there has not been a single fatal accident since our establishment thanks to risk assessments, preventive measures, and a culture of occupational health and safety promoted in all our facilities in the scope of OHS, and we continue to manufacture with a goal of zero accidents.

We constantly support our employees through training platforms that have become brands in their own right such as KEEP.

Ensuring equal opportunities for women, and diversity are among our labor priorities. We are a signatory to the United Nations Women's Empowerment Principles as well as the Equality at Work Declaration introduced to the business world under the leadership of the Ministry of Family and Social Policies and the co-chairmanship of Ms. Güler Sabancı, the Chairman of the Board of Sabancı Holding, and we are determined to continue supporting similar platforms.

Environmental Initiatives

Environmental management in production comes first among our operational priorities. In the same vein, our strategy discussions focus on energy, waste and emissions management among our top priorities.

We have been using waste plastic recycling pelletizing machines in our production, which emerged as an innovative idea for an R&D project. At Kordsa Global Turkey, we recycle the waste produced at the Nylon 6.6 yarn plants into Nylon 6.6 pellets, thus making them available to the engineering plastics industry.

Another project that was considered a revolutionary innovation in our sector was our resorcinol- and formaldehyde-free 'green' dip solution. By developing an auxiliary agent that poses no human or environmental health risks, we achieved compliance with REACH regulations and gained the appreciation of our customers at the same time.

We plan to publish our next report, where we aim to share our sustainability performance of 2015, in the second half of 2016.

“Our goal is to turn our sustainability reports into a major communication tool to examine the priorities of our stakeholders with regard to sustainability and to share our best practices in finding solutions to issues today and in the future.”



THE “GREEN” REVOLUTION. REINFORCED BY KORDSA GLOBAL.

GREEN TIRE CORD FABRIC

MAXIMUM SENSITIVITY
FOR THE ENVIRONMENT
WITH NEW RF-FREE
ADHESIVE DIP SOLUTION



ALL SECTORS
BEST R&D CENTER *
2014

TEXTILE SECTOR
BEST R&D CENTER *
2012 - 2013 - 2014

TURKISH EXPORTERS ASSEMBLY / InovaLeague
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2015

*According to the Turkish Science, Industry and Technology Ministry
2014 R&D Centers Performance Index

THE REINFORCER

REINFORCING OUR HABITAT: GLOBAL CSR PROJECTS

As The Reinforcers of the world, we have an aim: that of reinforcing our habitat. One of our main goals is to be able to strengthen the social environment we operate in.

Since its establishment in 1973, Kordsa Global has continuously improved its strength and motivation based on our principles and values. Kordsa Global encourages all its employees to take the lead in social affairs in a responsible and sensitive manner for the benefit of the society, wherever it operates. In other words, reinforcing our society, our environment is a key responsibility for Kordsa Global employees.

From the top management down, each and every Kordsa Global employee aims to understand the needs of the society we operate in. With this in mind, our agile teams embarked on a number of projects across different regions. Here, we would like to share some social projects we carried out in the 2nd half of 2015:



Red Day – Heart Awareness Campaign

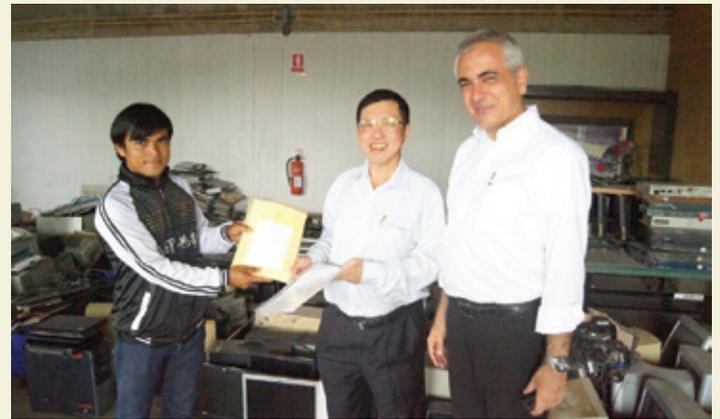
Kordsa, Inc - Laurel Hill, USA

Kordsa Laurel Hill joined the American Heart Association's fight against heart disease by participating in the National WEAR RED DAY. Mothers, daughters, sisters, aunts, friends – everyday women are dying at a rate of almost one per minute. 1 in 3 women dies of heart disease and stroke. Employees were asked to show their support for the fight against heart disease in women by wearing "RED". It's an easy, powerful way to raise awareness of cardiovascular disease and stroke in both men and women.

Neighborhood Renovation Project

Indo Kordsa, Indonesia

According to the official website of Bogor City, where Indo Kordsa is located, the number of people living under the poverty threshold is on a rise despite the overall economic growth in the region. In order to reinforce the neighborhood, Indo Kordsa carried out a neighborhood renovation project in 2015. Initially, the main road to the region was renewed, followed by the renovation by Indo Kordsa of 15 households in the neighborhood.



Computer Donation

Thai Indo Kordsa, Thailand

Our team at Thailand was looking for an opportunity to make use of the unused computers in our plant. They decided to donate these computers to the Suan Kaew Foundation, a foundation that is in pursuit of public benefit through several projects on topics including, but not limited to, unemployment, poverty, environment and agriculture.

Thai Indo Kordsa Co., Ltd. donated a total of approximately 100 computers, printers and copy machines to the Suan Kaew Foundation.



Orphanage Visit

Thai Indo Kordsa, Thailand

Giving back to society is a common practice for each and every member of Kordsa Global, and Thai Indo Kordsa organized a visit to an orphanage in the Bodwarradit Temple, in Ang Thong province.

51 employees out of 78 participated in the event, and spent the day with children living in the orphanage. During their visit, Kordsa employees served lunch to children. As they did not consider this to be a one-time affair, they wanted to leave a trace of themselves: in addition to foodstuff, they brought items of clothing and toys for children to keep.

Would You Go Out With Me?

Kordsa Global, Turkey

Would You Go Out With Me was a project carried out in August together with Turkey Spinal Cord Paralytics Association. The Association reports more than 150,000 people living with spinal cord paralysis in Turkey. 90% of them are dependent on wheelchairs and the help of others. Worse still, most of them are confined to their homes due to lack of social and environmental support (such as transportation).

Would You Go Out With Me focused on children with spinal cord paralysis. The idea was to spend a weekend with little ones, who cannot engage with the outside world the way we can. Throughout August, Kordsa Global employees picked up 11 children were from their homes with their companions, and spent the day together, doing whatever the children wished. Dilara Uzatici, a Sourcing Specialist and one of the Kordsa Global's volunteers, expressed her feelings: 'I have never had a day like the one I spent with the little girl with the almond eyes. I call her "the girl with the almond eyes" because of her beautiful brown eyes. We went to the cinema with her and 2 of her companions. It was devastating to see the difficulties a person in a wheelchair experiences day in and day out. Ever since then, whenever I go out, I remember that day and I realize the many obstacles around.' After spending the day with "the girl with the almond eyes," Dilara Uzatici became her special tutor, and still visits the family to prepare her for the university entrance exams.



Pink Together Month

Kordsa, Inc - Laurel Hill, USA

October is globally recognized as the Breast Cancer Awareness Month, in which thousands of organizations highlight the importance of breast cancer awareness, education and research. According to U.S. Breast Cancer Statistics, 1 in 8 women (about 12%) will develop breast cancer in their lifetime.

Kordsa Laurel Hill Team joined the fight against Breast Cancer by participating in the Pink Together Month. They showed their support to fight against breast cancer by wearing Pink in October.

One Tube Blood – One Life Campaign

Kordsa Global, Turkey

The campaign was carried out in association with the Turkish Red Crescent to raise awareness about stem cell/blood donation in October. According to the Turkish Red Crescent, while the rate of blood donation in developed countries on average is 5%, the rate of voluntary blood donation in Turkey remains at 3.6%. Consequently, various means and methods have to be employed to find blood in cases of emergency.

Initially all white and blue-collar workers were educated about the process of donating blood to build awareness about blood/stem cell donation. The idea was to encourage people in good health, who have never given blood, to begin doing so. This was followed, during October, by the Turkish Red Crescent teams' once a week visit to the İzmit plant. According to the data from our Health Unit, 131 employees donated blood, and 116 employees registered to the National Bone Marrow Bank.

Susan G Komen Race For The Cure

Kordsa, Inc - Chattanooga, USA

Each year, Chattanooga employees work together to raise money for the Susan G. Komen Race for the Cure Foundation. According to the official website of the Foundation, their mission is "to save lives and end breast cancer forever by empowering others, ensuring quality care for all and investing in science to find the cures."

Chattanooga employees had several fundraisers for this cause: a bake sale, a Pie in the Face contest and employee participation in the Race for the Cure. For the bake sale, employees donated home baked goodies to sell in order to raise money. Employees really enjoyed the competition between members of management, in which they gave money for the person they wanted to watch get a pie in the face. Mark Myers ended up winning with Billy Popas and Earl Kretzschmar tying for second place. The fundraiser ended with employees participating in the annual Susan G Komen Race for the Cure 5K run. In total, \$2,100 was raised to donate to the Foundation.



Village School Renovation Project

Each year, Kordsa Global leadership teams from all over the world get together at the Global Leadership Summit (GLS). Based on our values and aims stated above, we wanted to create a difference for children during this year's summit by reinforcing their everyday environment.

On the 2nd day of GLS, all attendees of the summit, including our CEO, Cenk Alper travelled to Kocaeli to renovate a village school. Renovation had been planned carefully. We were to be divided into 10 groups with each group having a dedicated task as explained by team leaders: creating a sleeping room for the kindergarten children, painting the school façade, building up a library and a computer laboratory, and cleaning the playground. What had not been planned was all the fun we had. Throughout the day, children visited Kordsa Global employees during their breaks, and reacted in the most natural way to the changes they observed.

With music, lunchtime turned into a small festival. We were in the garden, some dancing, some playing volleyball, while our top managers, having formed an excellent production line in the kitchen, were busy serving lunch to children!

The children were happy to meet dozens of new people from around the world, and we had a chance to remember how it was like to be a child: free, independent and full of self-esteem.

“The long driving hours were never boring, we usually had a separate driver and having long conversations with Petar on the way. We had cultural differences of course and in those days information was not that easy to reach as it is today.”





ARE THERE PEOPLE IN TURKEY LIVING UNDER THE GROUND

VAHE HANAMIRIAN

Global Accounts and Marketing Director

In the eighties, one of the important export markets for Kordsa Turkey was the former Yugoslavia. In that big and successful country, we had nearly ten customers operating in the fields of tires, mechanical rubber goods and conveyor belts. We were organizing combined visits, driving from one city to another, visiting two customers a day. Those visits were vital in understanding the differences between the customs and traditions around the world.

When we visited Yugoslavia, we were picked up from the Belgrade Airport by our representative and good friend Petar, and never had to worry about the logistics of the trip. Those trips were fun. Scenery in the countryside was beautiful and all the people we met were extremely friendly. Food was another story. Everything we ate was delicious, but what with joining customers twice a day for meals (one for lunch and one for dinner), we had to get on a diet after each trip. During these visits, our representatives had a vital role to play: acting as a bridge between the customers and us.

Petar was a solid thinker and a wise person. The long rides were never boring: we were usually driven around by another driver and enjoyed long conversations with Petar on the way. We had cultural differences, of course, and in those days, information was not that easy to come by. That made such conversations on the road the most valuable tools to understand the habits and customs of countries we visited.



On one of those trips Bulent and I had the following conversation with Petar:

Bulent: Petar, how are houses cleaned and maintained under the Yugoslavian socialist system? Do you have doormen or janitors?

Vahe: Germans call them Hausmeisters. I think it is also a common practice in big French cities.

Petar: I don't know what you mean by that.

Bulent: In Turkey most of us have doormen in our houses. They clean and maintain our apartments. They also buy us fresh bread and newspapers everyday.

Vahe: They usually have flats in underground floors of our houses (and he means "basements").

Petar: ?????

Bulent: Vahe, probably they don't have that service. Seems Petar did not understand what we mean.

Petar: No, I really don't understand. We don't have people in Yugoslavia, who buy us bread and newspapers. But Bulent, why don't you buy your own bread and newspaper?

Bulent: (getting a bit edgy and defensive): Petar, sometimes I don't have the time.

Petar: If I don't have the time, my wife buys me bread, not someone we don't know. Besides I don't see why those people live under the ground. No, Bulent, we don't have people in Yugoslavia, who live underground, and buy bread and papers for others.

He continued, "Bulent, when you don't have the time maybe you can ask a neighbor or a relative for help, you know. Just an idea..."

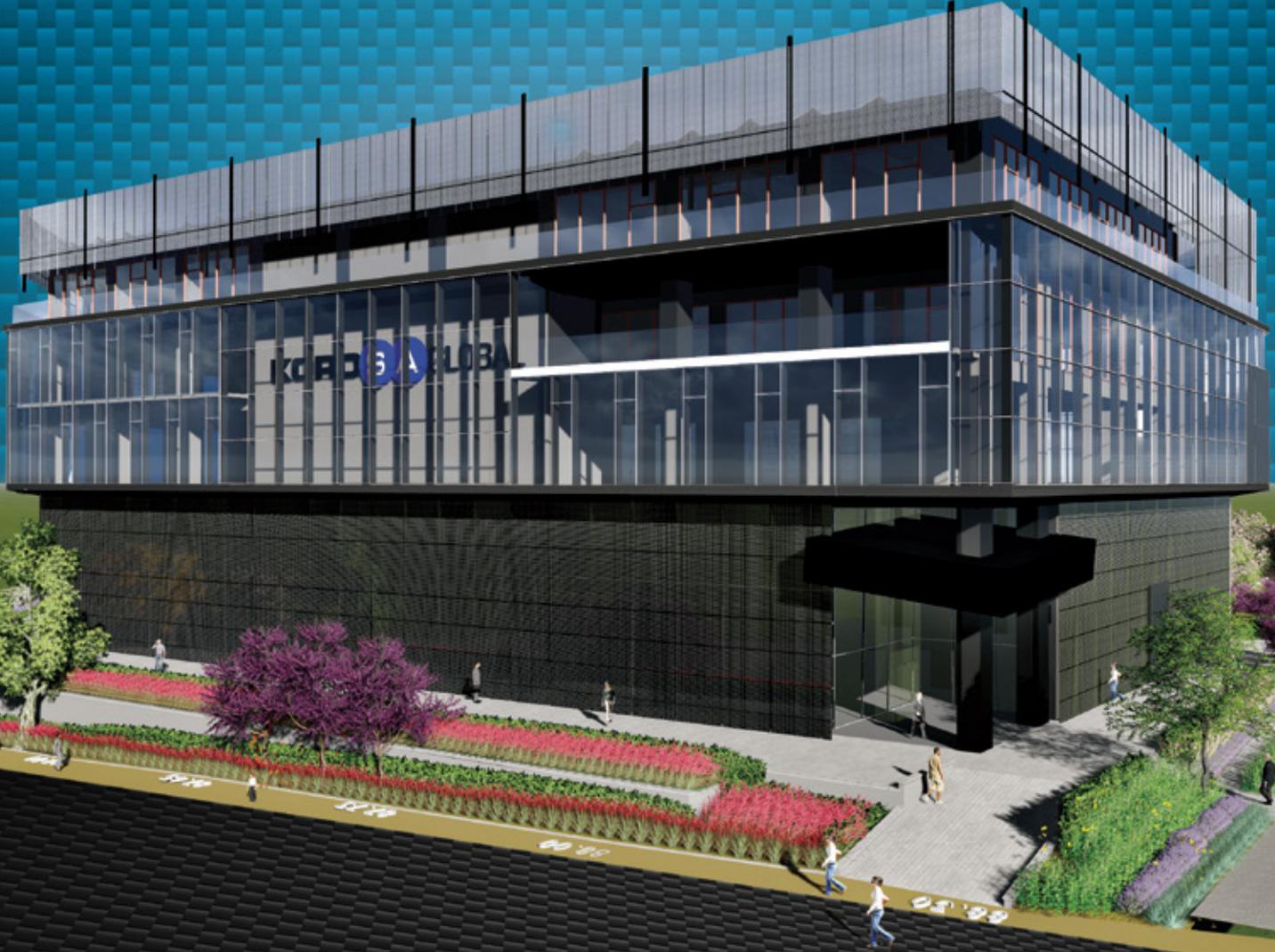
In those days, those conversations on the road were invaluable to express yourself and to get a feel of the atmosphere as a salesperson. In contrast to today's communication opportunities, it was not easy to access basic information as in the above example. As we did not have advanced communication and information technologies, our representatives took it upon themselves to introduce the customs and traditions of their country.

So such small talk on the road and during dinners was a significant tool not only to talk about your company and your expertise in the field, but also to understand your customers. Even though there was a huge difference in terms of communication channels, the logic behind these talks was same as today: to know your customer better. The more you knew your customers, the more you would understand the pains, needs, and expectations, which had to be addressed before the next visit.

COMPOSITE TECHNOLOGIES CENTER OF EXCELLENCE

KORDSA GLOBAL

Sabancı
Universitesi



TURKEY'S FIRST COMPOSITE TECHNOLOGIES CENTER REINFORCED BY KORDSA

As one of the most important development centers globally in this field, the "Composite Technologies Center of Excellence" combines industry and university under the same roof. The center, which will host both Kordsa Global and Sabancı University, will be home to basic research, applied research, technology development, product development, entrepreneurship, and production processes. Researchers, designers, engineers, managers and staff of the production process, PhD students, postdoctoral fellows, faculty members and entrepreneurs from incubators, i.e. all relevant players will co-exist in this ecosystem.

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