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The Corrugator

OFFICIAL MAGAZINE OF FEDERATION OF CORRUGATED BOX MANUFACTURERS OF INDIA

JANUARY - MARCH 2024



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Corru Pack Print 2024



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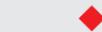
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The Editor's Page



Shlok Kedia
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This edition covers articles on business growth, steam technology, Supply chain network, reducing wastage in corrugated production and technological innovations to keep our members abreast with latest in the industry globally.

The India corrugated boxes market size reached US\$ 7.1 Billion in 2023. It is expected to reach US\$ 16.9 Billion by 2032, exhibiting a growth rate (CAGR) of 10.1% during 2024-2032. The growing usage in the food and beverage (F&B) industry for improving safety, thriving e-commerce industry, and favorable government initiatives represent some of the key factors driving the market (as per IMARC Group).

The impact of the Red Sea conflict is moderate for global trade but getting more critical as it concerns includes the Suez Canal which sees cargo worth more than 15% of global trade passing through it. India uses the Red Sea to trade with markets in Europe, east coast of the US, and bordering countries of Africa and Asia. A more recent report by the Federation of Indian Export' Organizations (FIEO) indicated an impact on our exports in the region of \$60 billion.

The UK economy slipped into recession in last quarter of 2023, the economy shrank a bit further in the consecutive quarter i.e. first quarter of 2024. Even the U.S. economy continued to decline in January 2024 however it's no longer signaling a recession in 2024, reflecting an economy outperforming expectations.

Under the able leadership, quote in Economic Times, Moody's said in its Global Macroeconomic Outlook for 2024 that the Indian economy is likely to remain the fastest growing among G-20 economies raising growth estimates from 6.1 per cent to 6.8 per cent in the year 2024. Thanks to the major boost with the Make India Movement and substantial rise in Foreign Direct Investments (FDI).

The new team under the able leadership of Dharmendra Pandya, President-FCBM is all set for 2024 serving our corrugators.

Happy Reading-Learning-Growing !

President's Desk



Dear Respected Members,

It gives me immense pleasure to greet and interact with you using the page of our house magazine The Corrugator.

Our 51st FCBM conference hosted in January 2024 by GCBMA was successfully held at Goa. February was full of knowledge-sharing activities and most of our member regional associations like RCBMA, SICBMA, UPCBMA, WICMA, KACBMA have organized remarkable technical seminars, certificate courses, webinars on various subjects. During this period, I paid my official visit to FCBM Secretariat, Mumbai.

I request members to attend seminars in big strength and try to bring new corrugators friends so that they also take an interest in joining us.

On one hand, the Indian corrugated packaging market witnessed a substantial growth of 8%-10% in FY 23-24 due to factors like the thriving e-commerce industry, the FMCG boom, increased consumer preference for lightweight packaging, and government initiatives promoting sustainable materials.

On the other hand, during these periods there has been severe multi fold price hikes on a daily basis imposed on Kraft paper due to various reasons like the commercial container traffic through Red Sea has been suspended, conflict between Russia and Ukraine, Middle East have led to a rise in imported duty, Dubai has banned on export of waste paper to other countries, increase in prices of local waste are the various reasons behind this situation going out of control.

Our country is a fibre deficit country, Indian paper mills should upgrade technologies, Indian paper mills and society should come forward with the objective to accelerate recycling in India and improve waste collection like Germany and Japan and move towards a circular economy.

During this quarter, the corrugators witnessed and benefited from many significant and notable national and international exhibitions of packaging machinery. The Corru Pack Print India Expo 2024, New Delhi organized by ICPMA on March 7-9, 2024 was a 100 % Make in India exhibition. On behalf of FCBM, I was invited as guest of honor during the inauguration function. UPCBMA has made excellent arrangements of transportation for members during the Expo.

The world's professional corrugated manufacturing show Sino Corrugated South 2024 organized by RX Greater recently held at Shenzhen, China on April 10-12, 2024. Many of our FCBM members attended the exhibition and participated in India Day celebration also.

*This year 52nd FCBM Conference to be hosted by KACBMA is scheduled on December 20-22, 2024 at Sheraton Hotel & Convention Center, Bengaluru. The conference Theme is RETHINK*REINVENT* RESURGE. I request members to register & participate in large numbers to make it successful.*

आप सभी को विक्रम संवत् 2081- हिन्दू नव वर्ष की हार्दिक शुभकामनाएं

Warm Regards,

DHARMENDRA PANDYA
PRESIDENT

Inventory of the Century-old Development of Corrugated Production Technology

As early as 156 years ago, the British discovered the corrugated structure and invented corrugated packaging. The corrugated box industry in today's world is undergoing rapid changes. The corrugated board production line is an assembly line composed of the reel base paper after corrugating, gluing, bonding and shaping, paper separation and pressing, cross-cutting into specification board, and finally stacking and outputting. From structure, speed, specification to control, corrugated cardboard production line has experienced a century-old development process from simple to modern, from low speed to high

with a width of 1.88 meters came out.

- In 1938, a single-sided corrugating machine with a width of 2.2 meters was launched.
- In the 1940s, the continuous rotary single-sided corrugating machine came out.
- In the 1950s, driven by the rapid development of the world economy and trade, a double-sided corrugated cardboard production line that connected multiple processes appeared. The width of the cardboard production line in the initial period is generally only 1000~1600mm, and the running speed is only 60~100m/min. After the advent of single-



speed and from mechanization to computer digital control mechatronics.

- In the early 1920s, the production technology of corrugated products began to replace the early manual operation with stand-alone production.
- In 1922, the electric single-sided corrugating machine with a width of 1.32 meters was born.
- In 1923, a single-sided corrugating machine with a width of 1.6 meters appeared.
- In 1925, a single-sided corrugating machine

sided corrugated cardboard, it has been developed for 64 years.

- In 1950, the double-wafer composite corrugated cardboard assembly line was born.
- In 1959, a mechanically linked corrugated board production line was manufactured. Main achievements in the development of tile lines: starch paste glue started to be used in the 1960s; automatic stacking machine; single-sided machine without guide jaws; automatic slitting and creasing machine; central control concept; preheater and double-sided heat input Quick adjustment;

direct drive cross-cutting machine. In addition to the application of starch paste glue, the tile line in the 1970s has experienced many other developments.

A new generation of carbon-free cold setting corrugator production line

The invention of “corrugated” by the British was the first wave; the invention of “honeycomb” by the Americans was the second wave, and it took more than half a century; now the Chinese invented the “carbon-free cold-setting corrugated production line”, which has become a The third wave. But it must be seen: the output of corrugated boxes is on the rise, and the civilization of the enterprise is still in the primary stage of the global modern corrugated industry compared with the modern international level. Therefore, the Chinese corrugated industry needs to study advanced countries even more. It is the third generation of corrugating machines after corrugating and honeycomb.

The cold-setting stand-alone patent has won the patent gold medal at the Geneva International Patent Achievement Expo.

Microwave cardboard production line, that is to say, the production line does not need boiler, gas, oil furnace heating to avoid pollution, reduce production costs, and improve production environment. Extended service life.

The electromagnetic wave production line is transformed from the microwave production line. The performance of the cold-setting electromagnetic wave cardboard production line is better than the first two, and it can integrate printing, slotting, and creasing, and can be tracked by computer throughout the process.

The new low-temperature adhesive is also called “cold setting” adhesive. It adopts a new generation of self-developed polymer adhesive and does not need to be heated and cured at high temperature. Natural drying in the curing channel increases the toughness and realizes fast bonding at room temperature. It is composed of polymer

resin and corn starch, with high initial viscosity, less glue consumption, reliable effect, and the glued corrugated cardboard is not easy to open glue. And it also solves the bonding problem of high-sizing paper and high-density paper. Compared with the traditional starch glue, the adhesive strength is increased by more than 10%, and the product yield is significantly improved, usually reaching or exceeding the national standard. Industrialization has been realized.

Normal temperature setting technology

(1) Corrugated forming – redesign of corrugated roll shape

Common sense tells us that when the fiber has a certain moisture content, it is easier to heat and form. Electric irons, spray irons are good examples. The corrugated paper of traditional corrugated cardboard production equipment uses this thermal processing principle. Under the same moisture content at room temperature, it is also possible to change the shape of the fiber (paper) under the action of external force. There will be two problems first, one is the rebound, such as origami, the external force is not enough, the paper folded in half It will rebound and stretch out; the second is excessive force, and the fibers are damaged. In short, the forming is not ideal. If you want to fold the paper at an angle of 30°C, it will either be overstressed and folded to 5°C, or the paper will bounce to 60°C.

On the basis of several experiments, and through the production of a simulation machine, four single machines and two production lines, we have successfully determined the corrugated shape of the corrugating roller. Under the condition that the A, B and C flute requirements of national standards are maintained, the optimal radius ratio of flute tip and flute bottom is 1:1.08. In order to meet the requirements of different paper specifications and different users, we design the meshing degree of the main corrugated roll and the main auxiliary roll to be adjustable. And the paper thickness is adjustable.

(2) Differential feeding—solve the problem of paper breakage under optimal stress conditions

In the test to determine the optimal tile tip and tile bottom radius, we also encountered the problem that the tile paper often breaks. After eliminating the factor of the quality of corrugated paper, we analyze that the stress state of normal temperature setting and thermoforming corrugated paper is different in the section between the feeding mechanism and the corrugating roller, and it is not easy to break; while the normal temperature forming is at room temperature. Under the work, the tile paper has no size change in the longitudinal direction, and the corrugated paper is subjected to a large force at room temperature, so it is easy to break the paper.

After finding the reason, we immediately redesigned the transmission ratio of the single-sided corrugating unit. Ensure that the paper feeding speed of the corrugated paper is slightly faster than the receiving speed of the corrugated roller, and can be adjusted, that is, differential feeding, to ensure that the corrugated paper enters the corrugated roller in a tension-free state from the feeding roller to the corrugating

roller. . So far, we have successfully solved the technical problem that the normal temperature forming corrugated paper is easily broken.

(3) Differential compensation

Differential speed compensation method, when the face paper contacts the glued single-sided corrugated cardboard, the face paper begins to expand, and it is easy to cause uneven tension, which is easy to produce the phenomenon of off-line corrugated cardboard, uneven surface, warping and other phenomena. The speed compensation method makes the surface paper fully expand after absorbing the glue, so that the tension remains the same forever, which solves the unevenness and warpage of the cardboard. The compensation method is to use different linear speeds to achieve the purpose of compensation.

With the rising global labor cost, the difficulty of recruiting and the intensification of the global warming problem, the increasing level of automation is the trend.

Source: ICONVEY



MSMEs Must Follow New Payment Rule from 1st April 2024, Confirmed by FM

The government of India in a measure to support the financial health of micro, small, and medium enterprises (MSMEs) in India, announced the enactment of a strict rule requiring payments to MSMEs to be settled within 45 days. Tax penalties on the due amount shall be levied if companies fail to follow the said rule.

As per two senior finance ministry officials, any revision to such a rule can only happen at the time of the Union Budget in July, highlighting the government's firm stance on the case. Section 43B (h) in the Income Tax Act introduced by the Finance Act 2023, mandates timely payments to MSMEs to sustain uninterrupted cash flow and strengthen economic sustainability.

One senior finance ministry official mentioned that “Companies need to make payments to the MSME sector within 45 days, as per the Finance Act 2023, effective from April 1, 2024. Failure to adhere to this timeline will render companies ineligible to claim deductions, with the overdue amount subjected to taxation.”

Parliament had already approved the amendment showing an important transference in tax compliance norms, dictating that deductions for tax, duty, cess, or fees liable to be paid to the government can just be claimed on the actual payment, no matter when they were accrued or incurred.

Explaining the cause for the revision, a second finance ministry official stressed its role in ensuring prompt tax compliance, declaring, “The provision underscores the imperative for businesses to fulfil their tax obligations promptly, discouraging the practice of indefinitely deferring payments for tax benefits.”

Measures to postpone or change the rule prior next budget session in July are considered inappropriate since any revision should experience parliamentary scrutiny and approval. The Confederation of All India Traders (CAIT) urged a one-year postponement of the rule, quoting ambiguities and demanding attention among traders all across the country.

MSMEs have struggled with late payments from both public and private entities, resulting in challenges to their functional viability. The importance of timely payments is been stressed by Finance Minister Nirmala Sitharaman specifically during the rise of the pandemic, highlighting the commitment of the government to assist the MSMEs.

Diverse opinions for the amendment have been expressed by the Industry stakeholders. Considering its impact on business functioning, some regard it as a measure to strengthen MSMEs' financial stability. Others highlight the demand for improved access to finance for buyers to promote timely payments to MSME suppliers.

The government to handle payment delays, has executed efforts like the Trade Receivables Discounting System (TReDS), easing prompt receivables for MSMEs by enabling the discounting of their invoices. The TReDS platform acts as a critical process for MSMEs to access timely funds, assuring their constant growth and viability in the evolving market trend.

Source: Saginfotech

Corru Pack Print India 2024 Expo receives an overwhelming response

Corru Pack Print India Expo 2024, an exhibition on the Corrugated packaging Machinery Industry in India and all the verticals of corrugation and allied industries, organized by Indian Paper Corrugated & Packaging Machinery Manufacturer Association (ICPMA) and jointly organized by Futurex Trade Fair & Events, took place from 7-9 March, 2024 at IICC (Yashobhoomi), Dwarka, New Delhi. Bringing together stalwarts and innovators from across India and abroad, this event served as more than just a gathering; it was a catalyst for introductions, relationships, and



endeavours, both old and new.

Echoes of contentment filled the air as exhibitors expressed their delight, deeming the expo a focused beacon within the corrugation industry,



global commerce. Exhibitors resonated with satisfaction, labelling it as a pivotal platform for amplifying sales and fostering networking

expressing satisfaction with the quality of interactions and the genuine interest from potential buyers. Substantial machinery sales,



numerous orders, and lucrative deals sealed during the three-day extravaganza. Impressively, over 100 machines found buyers, and 100+ deals closed attesting to the expo's efficacy as a marketplace for industry transactions. "Congratulations to the organizers for orchestrating such a spectacular show," they lauded, as footfalls echoed the resonance of prosperity within the industry.

Amidst the whirlwind of activities, live demonstrations, mesmerized visitors, offering them a firsthand glimpse into the realm of machinery prowess. "A true testament to the burgeoning market trends," they marvelled, recognizing the significance of this expo in shaping the trajectory of India's corrugated paper packaging sector.

Nestled in the heart of Delhi, the venue stood as a testament to modernity and convenience, offering exhibitors and visitors alike a seamless experience amidst top-notch infrastructure and amenities. With connectivity that rivalled its grandeur, the venue beckoned industry professionals with open arms, embodying the spirit of accessibility and progress.

The event concluded on a high note welcoming 120 exhibitors and 6,800 visitors from Corrugated box Industry from India and abroad to connect face-to-face, build business relationships, network and learn from industry experts.

The Technical Seminar took place on 8th March 2024 converging corrugators from across the country, on the theme: "Latest Technologies for Corrugated Industry in India" and "Corrugation is indispensable for Supply Chain & Logistics". With the thought leaders of corrugation industry, it successfully brought together industry experts and delegates to meet, connect and share insights on the latest technologies of the corrugated packaging industry.

The next edition of Corru Pack Print India Expo is scheduled to take place in 2026. Find out more details about the event on corrupackprintindia.org. We extend our gratitude to all participants, exhibitors, sponsors, and partners for their invaluable contributions in making this event a resounding success.

Corru Pack Print India 2024 Report





India Day Celebrated at Sino Corrugated South 2024

FCBM was privileged to support the Sino Corrugated South 2024 Exhibition held at Shenzhen, China on April, 10-12, 2024. The organisers Reed Exhibitions, honoured the Indian delegates by celebrating India Day on 10th April 2024. Shri Puneet Khivansara and Shri Nirmal

Sadgir represented FCBM at the event. Shri Puneet Khivansara addressed the delegates about the significance of the Sino Corr Expo for the Indian corrugators and thanked the organisers for acknowledging delegates from India.





Packers Products won Corrustar awards in three categories, we are showcasing two of them here.

Packers Products led by Amit Choudhary carries Six decades of legacy serving the corrugated industry with their innovative solutions to Fortune 500 companies across various sectors.

Category: Transport Container

Black Apples Box

5 kg apples are sold in ordinary retail packs with handles. These are 3 layered packs in which display value is low, fresh fruit in the lowest layer gets bruised, it is difficult for retailer to sell in part quantity and the board gets moist and soggy in cold storage. We designed a modular 5kg pack with 5 packs of 1kg each which is easy to pack and carry. Moreover, there is no bruising of the fresh fruit and individual 1 kg packs can be sold easily.

Special Features

- The 1 kg pack is a linear pack for 5-6 apples which is easy to fill for the grower.
- The unboxing experience is great, and all apples are visible as soon as the lid is opened.
- These 1 kg packs are stacked one on top of the other in a slim outer. Two holes are punched on top and bottom to facilitate pulling it out from the outer box.
- Apple shaped aeration holes punched in the outer match exactly with these holes made in the inners.
- Just in case the outer is accidentally transported lying down, the flute direction of the inner box still runs erect, thereby supporting top to bottom compression strength.



Category: Consumer Pack

Eat Better Hexagon Gift Box

The health food segment is one of the fastest growing segments in FMCG. It also has a lot of players – both old and new. This being a premium segment, brands spend extra on packaging to make sure that their product stands out in the crowd. The client wanted a unique pack to attract attention and enhance gifting appeal. We designed a hexagon box since square/rectangle are boring. The lid is separate as the contents are not consumed in a single day and the food product needs to remain covered. The threads assist handling and add appeal.

Special Features

- The base closing flap is made in such a way that the dust flaps assist in formation of the hexagon shape.
- The tongue lock makes sure that the base flap does not open during transit.
- The top edge is double pasted to enhance strength and aesthetics.
- Owing to the shape, the panels seem continuous, so the printing is designed to tell a story for the children.



Can SCO Create a Trustworthy Supply Chain Network for the Region, especially for India?

What lies ahead

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However, cliché it may sound, supply chain management is understood as activities between companies, suppliers and customers to integrate and add value to the end customers by effectively delivering products and services. This definition in different versions is mostly what we know in the commercial and academic domains. Understanding the realms of supply chains between Nations for boosting economic growth and regional stability is a different area for many readers. Shanghai Corporation Organisation (SCO) is an organisation which works with international and regional organisations with a focus on cooperation amongst countries and trading nations with many international agencies like *UN, ASEAN, CSTO, CIS, ECO, CICA and ICRC to stabilize trade, open new corridors and cooperate with other countries to promote peace and military stability in the areas. The SCO gained prominence when on 2nd December 2004, the 59th plenary session of the UN General Assembly adopted Resolution A/RES/59/48 (agenda item 151) entitled "Observer status for the Shanghai Cooperation Organisation in the General Assembly." The resolution provided the SCO with the right to participate in the sessions and work of the General Assembly as an observer.

To understand the SCO, let us know its structure of it.

As it is known, the Shanghai Corporation Organisation (SCO) was in the news when the SCO

Summit was held in Samarkand on 17th September 2022. It was first held in Shanghai in June 2002 with six founding members and eight members, who joined as full members in 2017.

The tense situation between India and China due to border conflict and Russia in war with Ukraine for more than 100 days makes it a very strategic international event for both Nations. Indian PM, while meeting participating Nation Heads in Samarkand, said that the Shanghai Cooperation Organisation (SCO) should create trusted and resilient supply chains to bolster economic recovery and overcome impediments created by the Covid-19 pandemic and the Ukraine crisis. It was also emphasized that the world's largest regional grouping should give each other transit rights to help forge better regional connectivity.

The current members of the SCO Summit 2022 are

- China
- Kazakhstan
- Kyrgyzstan
- Russia
- Tajikistan
- Uzbekistan
- India
- Pakistan

Samarkand, a central Asia city, which hosted the 22nd Summit of the Shanghai Cooperation Organization, is famous for its cultural significance and is located in the Zarafshan River valley in the Southeastern Region of Uzbekistan. Samarkand is a central point for trade due to its strategic location and connection with many bordering countries.

Due to the Covid-19 pandemic, the SCO Summit was cancelled in the last two years.

Scope and Impact of SCO in Global Supply Chain Management

The main emphasis of SCO is to create a trusted, resilient and diversified supply chain through increased cooperation and mutual trust between the SCO member states. The need for enhanced cooperation to fight terrorism across the region through its Regional Anti-Terrorist Structure (RATS) is also a primary agenda. The SCO agreed to work on a unified list of extremist, separatist and terrorist organisations banned by the member states, and all members were "apparent in recognising the threat that this challenge poses to our region".

Transit rights are vital to creating a better supply chain. Many countries suffer because transit rights are either delayed or not provided for the transportation of goods and other materials. There is a lot of focus on proper use of technology and creating a people-centric development model. All this has been discussed because there was tension on the borders between

India and China had a conflict in the eastern Ladakh areas. Both countries suffered human loss for the first time after an official war around 60 years back when India was a relatively young country that gained independence from the British only 13 years before. The diplomatic line was busy post the conflict, and both countries are engaged to de-escalate the tension. The truth is that there are still some issues of land acquisition and infrastructure development in areas under conflict.

At the heart of SCO discussions are topical, regional and international issues like peace and security, trade, culture and tourism. The expansion of SCO is based on mutually beneficial cooperation within the organisation. Since China is growing faster and has become a hub of manufacturing, neighbouring countries need to have a peaceful bilateral agreement with the countries, and India's soft power in recent years and its growing relations with developed countries cannot be ignored. A standoff between two powerful nations is in no way a boost to the

world economy and a deterrent to other Asian countries that can progress and outperform in manufacturing and services compared to other countries.

Recent events in the international domain are essential for India's current ruling party as they balance their aggressive/assertive diplomatic stand with countries like China, Russia and US. As India takes a leadership position in G20 and SCO, which are two different groups with divergent goals, it is to be seen whether India can maintain a dialogue to retain other countries' trust and clear the path for development projects which are stagnated because of the ongoing conflicts.

Global actions are always evolutionary, so India must take countries like Indonesia, Brazil and South Africa together to create a better G20 structure. On the same lines, India's leadership position has to be carried out through its bold, aggressive and clear diplomatic policy because the raging war between Ukraine and Russia, China over strong and dominant position and Europe's internal disturbances are creating an uncomfortable situation for other members countries who wish to steer clear from these conflicts yet maintain a principled stand to enhance peace and stability in this region. As a nation of 1.40 billion people, we have our challenges and inclusive development along with Pakistan and China is needed for trade; decreasing terrorism and growth is essential for geo-political stability. However, to India's dismay, China and Pakistan are seen as hand-holding each other behind the back and offering resistance to India's efforts to maintain a progressive state of affairs.

The need of the time is that India must first exhaust its diplomatic policy of tolerating no nonsense from its neighbouring countries when it comes to dealing with cross-border terrorism or border area conflicts or its purchase policy of buying petroleum from Russia or some other countries without getting bogged down with sides taking issue or voting for a specific problem in UN. So, a clear focus on larger goals and by seeking cooperation from countries like Brazil, Indonesia, Russia as well as China and Pakistan, India can establish a legacy of a positive atmosphere not only in G20 but also in SCO.



Effective ways for improving compression strength of the carton box

The primary aim of a carton box is to ensure the safety of the item packed inside it. The compression strength of the box is a direct indicator of how well can the material render protection. Hence, each carton box manufacturer in Chennai produces carton boxes with great compression strength to meet the quality demands of the market. This blog will list some effective ways to improve the carton box's compression strength for better protection and durability.

Compression strength as a benchmark

In recent years, many factories have changed their focus from gauging the broad quality of the carton box to zeroing in on various tests to assess the physical strength of the box. Even many MNCs have shifted from bursting test to compression strength as a benchmark for the quality of the box.

Methods to improve the compression strength

1 – Optimal dimensions

Many data analyses have pointed out the relation between the box dimensions and the compression strength of the carton box. As the circumference of the box increases, so does the compression strength.

In general, the length to wide ratio is about 1.8 to 1. Here, the impact of the dimension on the compression strength is ± 5 . So, when the aspect ratio touches 1.2 to 1.5, that's when the compression resistance is very high. In the same manner, when the ratio increases to 2:1, the strength takes a hit of up to 20%. Therefore, the optimal length to width ratio should be within 2.



2 – Stacking method and stacking duration

The compression strength reduces when the stacking duration increases. It is called the Fatigue

phenomenon. If the boxes have been stacked for more than a month, the strength decreases by 30%. When this duration crosses a year, the boxes will have only 50% of what they had initially. Therefore, the top corrugated box manufacturers in Chennai produce boxes that have a higher circulation time to prevent the loss of compression strength.



How the boxes are stacked also impacts its sturdiness. Many test results show that the force in the vertical direction is higher than the horizontal pressure. Also, the pressure on the corners was the highest of all. The bearing force on the box was low on the point furthest from the box angle.

Hence, it is best to align the corners of every box for better stacking power.

3 – Carton Openings

In some boxes, there might be holes or gaps for easy handling. It will also impact the compression strength of the box. Studies show

that the resistance is greater when the size of the hole is large. Also, the compression strength will be low if the hand hole or ventilation hole is closer to the top or bottom. So, a hand pull on both sides of the box will reduce the compression strength by 20%.

Therefore, most manufacturers reinforce the inner walls of the carton with an additional layer to reduce the pressure of the opening on the compression strength.

Source: Total Packaging Solutions

HR development in manufacturing sector

With strong sales and increased attention from the investment community, manufacturing industry requires human capital now more than ever as they plan to be the fastest growing service sector.

The HRD function in the manufacturing industries is often concerned with payroll, administrative work and mediating between the management and the workers. Mostly, the manufacturing companies lean on the HRD function in times of labor unrest and strikes. Manufacturing is the use of machines, tools and labour to produce goods for use or sale. The term may refer to a range of human activity, from handicraft to high tech, but is most commonly applied to industrial production, in which raw materials are transformed into finished goods on a large scale.

With strong sales and increased attention from the investment community, manufacturing industry requires human capital now more than ever as they plan to be the fastest growing service sector. Now, many small and large enterprises are realizing the value of effective human capital and their essential contribution towards business success. Other than the general challenges of global competition, product development and cost containment, manufacturing faces major issue in the HR department. In the times of dynamic global market developments, HR in manufacturing industry needs more focused attention than ever. As largest provider of employment, manufacturing industry unsurprisingly face some serious HR challenges:

Recruitment difficulty: The large number of job positions to be filled pose a challenge for the HR. What makes the task of filling many job positions even further more complex is the need of specific skill set required by the worker. Manufacturing industry who look for skilled workers, frequently face shortage of people with the right skill set and abilities, hence forming another hurdle for the HR.

Employee retention: An increase in turnover rate in manufacturing industry is a common phenomenon as people often leave to explore new and exciting opportunities. Other reasons for increase in turnover may be due to no growth or development

of the employee on both professional and personal front, low pay package, lack of benefits or poor work environment.

Global competition: As this increases, the task of making the company attractive to top talent and innovators in this age of cut throat competition, is a challenge important for the survival and growth of the company in the industry.

Training and development: It is the sphere where HR has to operate to its optimum. It is equally essential to provided adequate training to employees, in order to keep them update with the latest developments in the industry and prepare them better for the upcoming challenges.

Decline in workforce: Even though the sector seems to be growing, and there is a perpetual demand for workers, there is a shortage of skilled candidates as salaries in manufacturing is higher compared to the combined salary averages across all other industries, but unfortunately it is not acting as a magnetic factor in attracting new and better talent into the industry.

As far as Human Resource Management is recognized as one of the most important managerial aspects in the life of every company. HR in manufacturing is much more rules-driven and consistent in applying those rules. HR role provides leadership in designing of the organization growth. A poorly designed organization is like a colander; in there we can pour top level talent and hours of effort into it. A well-designed organization uses its talent effectively and HR works on it so hard to build talent. Many small to mid-size manufacturing companies have become increasingly aware of how an effective human resource leader can contribute to the success of the business's bottom line. With the perpetual growth in the manufacturing industry, the role of HR is bound to play an even more crucial and complex role in the future. But with diligent care, HR can overcome each and every hurdle and do what it does the best: Help the company achieve newer heights.

Source: People Matters



A revolutionary Heating System in the Corrugation Industry

Heating system plays a critical role in the efficient running of the corrugation machine. Traditional Electric tubular heaters and gas heaters have limitations in terms of speed attained and quality of 2 ply corrugated sheets. The heat requirement of the latest high speed fingerless corrugation machines could be met only by installing boilers.

These solid fuel-fired boilers often face challenges with respect to environmental compliances and government restrictions due to their significant contribution to industrial pollution. An ideal heating system should offer the following features for safe and efficient operation:

It should provide high quality fluting and excellent quality of 2 ply. This is possible with a system that offers adequate and uniform heating across the corrugation rolls.

It should occupy minimum space with minimal infrastructure like pipelines in the factory, thereby reducing transmission losses.

There should be no blister formation while running smaller sized paper.

The temperature and speed should be optimised in correlation with the size and GSM of the paper being run.

The system should consume minimum electricity and require negligible maintenance, thereby reducing the downtime and increasing the overall productivity of the plant.

The capital cost of the system should be such that it is affordable for most corrugators.

Faster corrugation speeds should be easily attainable while avoiding tedious pollution clearances, special ash disposal units, water softening plants, chimneys or licenses etc.

It should follow environmental compliances and be non-polluting eliminating the need of process shut down in regions with hazardous air quality indices.

We now have a suitably efficient alternative for small scale boilers, aligning with environmental regulations and catering to the heating demands of modern fingerless corrugation machines without compromising speed or 2-ply quality.

The Electric Thermic Oil Heating System has been

ingeniously designed by the Electro Heat Group (Electro Heat Engineers, Hot Temp Industries and Radiant Heating Systems). The Electric Thermic Oil Heating System stands as a hallmark in the heating industry recognized with a patent from the Government of India. It combines the efficiency of a boiler (for Speed) and the convenience of electric heaters (for Operation), while being environment friendly and safe at the same time.



Ashu Jhingan
MD Electro Heat Engineers

The Corrugation machine initially heats up in 45 minutes & thereafter it can run at varying loads depending upon the usage of the equipment. Eventually this system presents a clean, efficient, economical, and safe alternative to conventional boilers, transforming the industry landscape.

Since the system is placed close to the corrugation machine in the working hall, there is no need for extensive pipelines or a large separate area. Consequently, heat loss during transmission is minimal, thereby increasing efficiency.

The Heating element used is of very low watt density. It ensures that the temperature of the thermic oil remains below the flashpoint. This enhances the life of the oil manifold due to very low carbonisation.

Faster speeds up to 80 MPM can be attained with excellent quality 2 Ply output.

Minimum power consumption & negligible maintenance reduces downtime and increases productivity by as much as 50%.

Accurate multi-step temperature controls and multiple load banks ensure quality & save power.

In a short span of time, the Electric Thermic Oil Heating System has been accepted and adopted by corrugated box manufacturers in over 100 installations across India. In recognition of these facts, Hot Temp Industries has been awarded the B.K.Doshi Award for Innovation and Excellence 2023 this year by FCBM of India.

Revolutionizing Production: The Advancements in Corrugated Cardboard Manufacturing

Author: Lily Gao, Corrugated packaging machinery Experts

In the past few decades, the corrugated cardboard production line has undergone remarkable real development, achieving significant progress through the adoption of automation and intelligence technologies. This critical sector of the manufacturing industry has witnessed tremendous advancements. This article aims to unveil the true development journey of the corrugated cardboard production line, showcasing the role of technological innovation and process improvement in enhancing production efficiency and quality.

1. Leap in Efficiency through Automation

In the past, the corrugated cardboard production line heavily relied on manual labor, resulting in limited production speed, low capacity, and susceptibility to human errors. With the introduction of automation technology, the production line experienced an unprecedented leap in efficiency. Automatic feeding systems, automated cutting and folding machines, and robot-assisted stacking devices replaced most traditional manual operations, significantly boosting production speed and effectively reducing production costs.

2. Data-Driven Intelligent Optimization

With the rise of Industry 4.0, the corrugated cardboard production line gradually embraced data-driven intelligent optimization. Sensors and monitoring devices were widely employed throughout the production line, enabling real-time data collection and transmission. This data was then integrated into advanced data analytics systems, utilizing artificial intelligence and machine learning algorithms for in-depth analysis. The result was process optimization, proactive fault prediction, and warning capabilities, enhancing production line stability, reliability, and adaptability to market demand fluctuations.

3. Environmental Responsibility and Sustainable Development

In the modern society, environmental responsibility and sustainable development have become

essential obligations for businesses and the manufacturing industry. Throughout the real development process, the corrugated cardboard production line continuously optimized its processes, reducing energy consumption and resource usage. The adoption of advanced waste recycling and reuse techniques effectively minimized waste generation. Furthermore, the growing environmental awareness has led manufacturing companies to prioritize the use of eco-friendly materials, driving the application of sustainable materials in corrugated cardboard production.

4. Human-Machine Collaboration and Innovative Production Models

The real development of the corrugated cardboard production line not only entails technological innovations but also emphasizes a new model of human-machine collaboration. Instead of solely replacing manual labor with machines, modern production lines highlight the synergy between humans and machines. Employees are no longer limited to executing simple mechanical tasks but have become managers and decision-makers overseeing and operating intelligent devices. Through training and skill enhancement, employees actively participate in various stages of the production process, contributing their wisdom and experience to optimize and innovate the production line.

Conclusion:

The true development process of the corrugated cardboard production line is a result of both technological advancements and the wisdom of human talents. Automation and intelligent technologies, data-driven intelligent optimization, environmental responsibility, sustainable development, and human-machine collaboration have collectively driven the transformation of the corrugated cardboard production line from traditional to modern. We firmly believe that in the future, the corrugated cardboard production line will continue to incorporate more advanced technologies, expanding its application fields, and making even greater contributions to the development of the manufacturing industry and society.

Corrugated boxes: The ultimate expression of a circular economy

A circular economy is created when the entire life cycle of a product is optimized for minimal environmental impact, all the way from raw materials through production and use, coming full circle to be reused or regenerated.

It begins with the use of renewable raw materials (trees). Corrugated, a natural product, is made from tree fiber, a renewable, natural resource. Private landowners grow trees used to make boxes, and each year they plant more than they harvest. Their stewardship ensures long-term preservation of land and wildlife, and even cleans the air, while furnishing material for the most efficient, versatile and sustainable packaging on earth.

Corrugated is fabricated entirely from renewable natural resources, using just three ingredients: wood fiber, water, and starch. The fiber comes from trees grown in sustainably managed forests and tree farms, and from old corrugated containers (OCC) – used boxes that have been recovered for recycling.

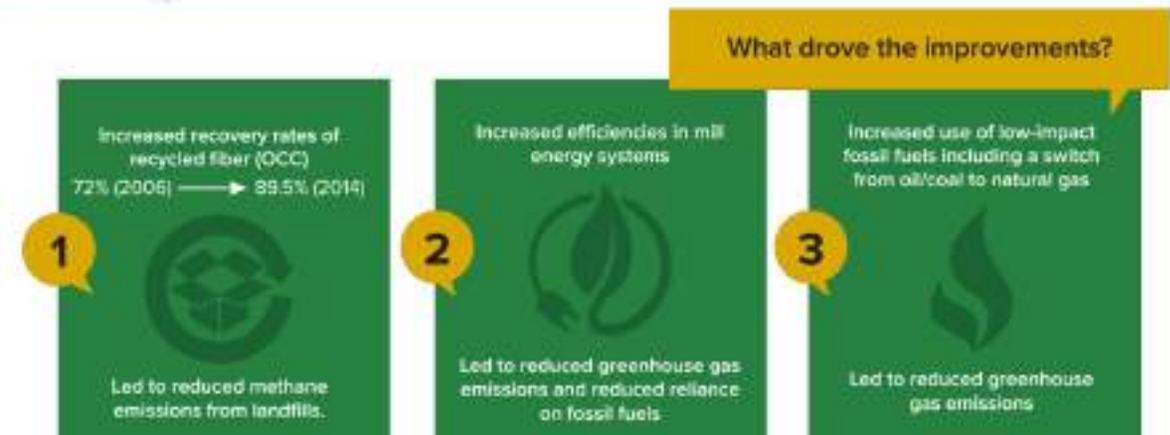
But the corrugated industry's commitment to sustainability continues throughout box

production, use and end-of-life, in truly circular fashion. Box companies work diligently to minimize environmental impact through continuous improvements in manufacturing technology. They constantly innovate to create packaging that helps CPGs and retailers achieve their own sustainability objectives, paying it forward to benefit all. Finally, the industry's phenomenal recycling success ensures the boxes come full circle to be used as primary feedstock for new boxes.

That certainly fits the U.S. Environmental Protection Agency's (U.S. EPA's) definition of a circular economy to a tee: One that “uses a systems-focused approach and involves industrial processes that are restorative or regenerative by design, enables resources and activities to maintain their highest value for as long as possible, and aims for waste elimination.” Here's how the corrugated industry does it.

Clean manufacturing

Life Cycle Assessment (LCA) is the most comprehensive way to quantify a product's environmental impact, taking everything into account from raw materials to end-of-life



Corrugated boxes: The ultimate expression of a circular economy

(disposal). A credible LCA provides a snapshot and a benchmark for improvement based on verified facts, collected and analyzed by impartial, qualified third-party researchers, and peer-reviewed to further ensure objectivity and accuracy of conclusions.

The corrugated industry submits to periodic LCA studies performed to the highest standards, evaluating the life-cycle impacts of an average corrugated box, including those generated during the growing and harvesting of trees, box manufacturing, use and end of life. Over the years, these LCA reports show that box manufacturers are steadily replacing fossil fuels with renewable energy and continually reducing greenhouse gas (GHG) emissions as well as other impacts. The complete facts are available here.

Teamwork: Creating supply chain sustainability

Corrugated packaging is everywhere and certainly, standard sizes and configurations are ubiquitous – but corrugated is used in thousands of innovative configurations to perfectly protect, ship, and sell everything from industrial parts to consumer goods and yes – definitely food, beverages, and other items sold by grocery retailers. Corrugated boxes can be custom-designed to fit any product – using just the right amount of “cardboard” to safely protect merchandise through distribution, while minimizing package weight and preventing waste. Lighter-weight boxes make it possible to fit more on a truck without hitting freight limits, which eliminates wasted space. (No one wants to pay today's prices to ship air!) Lightening the load to deliver more products with fewer shipments reduces fuel consumption and associated costs, helping alleviate supply-chain challenges (like current trucking shortages).

On top of logistics benefits, corrugated packaging

is a merchandising workhorse. Recent technology improvements enable killer graphics to be printed on corrugated for a whole new “wow” factor that helps sell a product in store or elevate the purchasing experience of home delivery. Then, the consumer gets in on the act – engaging with the product and brand before sending the box back from whence it came – recycling it.

Recycling brings it home

Corrugated is the most-recycled packaging material on earth, and always has been. For the last decade, about 90 percent of corrugated produced in the U.S. has been successfully recovered and recycled, and the average box is made with a mixture of 52% recycled and 48% new fiber. In contrast, less than 9% of plastic gets recycled, and as everyone knows by now, the remainder lasts forever in landfills or worse, in oceans and waterways, inflicting grave harm on ecosystems and wildlife.

Meanwhile, growing e-commerce means more boxes are delivered directly to consumers, who then assume responsibility for what happens to them after use. Recycling is the obvious choice. It's



easy, and 94% of Americans have access to corrugated collection points. Since the used boxes are a necessary feedstock for manufacturing new ones, this recovery loop continues again and again.

And thus, the circle is complete.

Source: Retaildive

What Makes a Great Manufacturing Leader?

Thought leaders and executives sequence the DNA of the best in the business.

In early 20th century manufacturing, leadership happened from the top down. It was not only dirty, dark and dangerous, it was paternalistic. Good paychecks and solid pensions meant the boss gave orders and everyone else took them. Henry Ford kept tabs on his employees on their off hours and bought out his investors when he didn't like their advice. Forrest Mars, founder of Mars candy company, docked the pay of everyone, including executives, who arrived a minute late for work, and "was legendary for his extreme temper, and his fanatical behavior," according to his New York Times obituary.

Sue Bingham, an organizational development consultant who's coached manufacturing executives for 25 years, still comes across "the hero type, who comes in with arms crossed" now and again in her line of work. "We've worked with one company owner who signs every check, because he doesn't trust his people to use good judgement." She's encountered company presidents "who are so in the weeds—down to 'How many shipments did we make today?'"

These leaders are dinosaurs. Today, autocracy might limp, or walk, or crawl, but it doesn't fly. Manufacturers must vie for workers against tech companies who not only don't dock their executives for late arrival; some don't require them to come into the office at all. Barking out orders might get your products out the door on time this week, but not next, when everyone quits or the lack of new ideas finally catches up—and your customers defect for a company that can deliver a better product.

"Times have changed," says Stephen Gold, president and CEO of MAPI, the nonprofit Manufacturers Alliance for Productivity and Innovation. "Strong leaders for the coming decades see human growth as essential to business growth."

They also must navigate an increasingly sophisticated and fast-paced supply chain, keep the ship aright through the battering of tariffs and trade agreements, craft a savvy digital strategy that maximizes ROI, and anticipate technological transformation and develop products around it.



Oh, and figure out millennials.

And if they lead a public company, great manufacturing leaders also face the uphill task of making short-term-obsessed, capital-intensive-averse Wall Street happy.

It's not 1933, when a college education was out of reach and production demanded millions of workers perform repetitive tasks. It's 2019, when shop-floor employees at Cambridge Engineering in Missouri make and share videos of their continuous improvement ideas, when high-skilled tool and die work is now done in China, when a U.S. president tweets out his disdain for specific companies to 57.9 million followers, when having the right data expert on staff (like Mike Eilers at GE Aviation) to develop a digital thread tool can increase supply chain visibility and save \$4.4 million in a year.

In this fast-changing environment, we here at IndustryWeek have decided to try to pin down the previously unpinnable—what's required of a great manufacturing leader now. We asked manufacturing executives and intelligent observers of the industry for their take on who's got the magic dust—and who's collecting dust.

What Makes a Great Manufacturing Leader?

Here's what they said.

A great manufacturing leader:



1. Builds trust

Manufacturing leaders must put in some real roll-up-their-sleeves effort to regain the trust of their workforce, says Steven Blue, CEO of rail parts manufacturer Miller Ingenuity and a best-selling business author. Trust disappeared 30 years ago when companies eliminated the defined benefit pension plans that took care of loyal workers when they became too old to work (or had put in their time and just wanted to hit the road in an RV with their grandkids).

Trust does not come from declaring a company's values and putting them up on professionally printed signs around the plant. It requires the real work of building a culture around teamwork, creativity and enthusiasm.

"United Airlines claims that customers are their No. 1 important thing, and they treat their customers badly," says Blue. "Most companies have cultures by default, not design. A lot of CEOs, especially older ones, don't believe in this culture stuff. It's just too smoochy, human resource-y for them."

Gold calls out two manufacturers for their trust-building virtuosity. EnPro, a California engineered components manufacturer, invests heavily in professional development for its workforce from the shop floor to the executive level. It also has each employee—including leaders—map their personal growth. These growth maps are shared with colleagues, who are encouraged to give constructive feedback and ask questions of leaders and team members in meetings, to keep them on track with their plan. And Kaman, an aerospace and industrial components supplier

with 5,300 employees, has built in ongoing learning through tuition reimbursement, skills training and a leadership development program. In addition, employees set goals with managers and have regular dialogue with them on their progress.



2. Has high expectations for their people (and gives them the tools to meet those expectations)

Bingham left a traditional HR job at a large pharmaceutical company 25 years ago to build a consulting/HR firm around an unconventional idea: Create new plants without hourly workers. "Everybody had a key to the front door, everybody was on a salaried basis, everyone was a manager—except they were eligible for overtime if they were non-exempt." They sought to fill plant manager positions with people "who recognized that everyone working there was an adult and should be treated with respect."

Empowered to share ideas and have a role in decision-making, employees began to make real contributions. They also appreciated that they weren't shackled to a time clock, that not just company leaders could leave early to catch their kid's ballgame. A shop floor worker's team could figure out on their own how to cover for the baseball parent.

Aerospace manufacturer Rohr was an early adopter of the approach. "The new plants started outperforming the older, traditional plants within the first six months," Bingham says.

With a culture of empowerment and mutual respect, says Blue, employees will do great things. A couple of years ago, Blue invested a half million

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dollars in a “Creation Station” for his employees. With a pool table and lounge chairs surrounding a giant whiteboard, and multiple LCD screens, “it’s a smart room totally wired for and decorated and set off to stimulate thought.” To enter, employees have to walk through the shop floor. Blue says he deliberately didn’t put the room in the office area because he didn’t want it to be perceived as white-collar.

“Most places assign creativity to the engineers, but they should require and encourage creativity from every single employee in the place,” he says.

Loads of ideas, big and small, come out of that room. One of the biggest is a high-tech safety product called Zone Guard that alerts railroad work crews on their personal devices to the presence of incoming vehicles on the track. “Most manufacturing CEOs wouldn’t bat an eyelash spending a half million dollars to buy a CNC machine,” says Blue. “I do that, too, but the difference is a CNC machine depreciates and has to be replaced. My Creation Station and the culture of creativity never depreciates and



arguably is an income-producing asset.”

3. Inspires passion

The ability of a leader to spark passion—in employees, in customers—was the most-mentioned desired quality in interviews for this story. Perhaps that’s because manufacturing has such a hard time shaking the trope of being repetitive and soul-killing. “There’s a lot of sense from people that manufacturing is not very exciting,” says Malcolm Thompson, executive

director of NextFlex, Manufacturing USA’s flexible hybrid electronics institute. “It’s not sexy



like research where you invent something that is totally revolutionary. The reality, though, is those inventions that take research only really have value when you create a product from them.”

Vic Keller, managing partner in Ancor Capital Partners and founder of several manufacturing companies, notes that traditionally, manufacturing leaders weren’t required to have passion. “They were required to be great engineers, they were required to be efficient. But today, if you’re going to have any kind of expansion and have success overall, you need to surround yourself with people who truly have passion for what they’re doing.” Passion drives people to think big, he says, to see how the individual element of the business they’re working in fits into the vision for the business as a whole.

Telsa CEO Elon Musk leads the passion contingent with “a super-cool product that emotionalizes electromobility, which no one else has done,” said Arndt Ellinghorst, senior managing director and head of global automotive research at Evercore ISI, at Automotive News World Congress in Detroit in January. Jim Hackett, CEO of Ford, on the other hand has struggled with creating excitement around Ford’s lineup, and his message around tech seems convoluted.

Fortunately, there’s more pep in Hackett’s colleague, Ford COO Jim Farley. “Here’s a guy that seriously is a car guy who drove across the

What Makes a Great Manufacturing Leader?

country [without a license] at 14½, and he sounds truly excited about the EV,” says Jonathan Smoke, chief economist of Cox Automotive, also at World Congress.

Pablo Isla, the CEO of Spanish apparel manufacturer and retailer Inditex (and the No. 1 ranked CEO by Harvard Business Review in 2017), has made motivating his people and “generating a sense of spirit” within the company his top priority, says Alberto Oca, a principal in the manufacturing space with A.T. Kearney management consulting firm. “He said in managing a company you of course need to be rational. But he is learning to be less rational and more emotional.” Inditex has a flat structure and favors informal conversations and impromptu gatherings over formal meetings.

Oca also admires the style of Victoria Holt, CEO of 3D printing manufacturer Proto Labs. Holt is a CEO who walks the floor and makes a point to identify potential leaders early in their careers. “For her, the most important quality of a leader is how to keep people engaged,” says Oca. “Yes, there are all the different technologies you see in the market—computing power, analytics, human machine interface, digital transformation—but all that cannot be put in place without first connecting with your people. You need to make sure they’ve bought into your product and your service.”

4. Has a strong entrepreneurial spirit

Keller says that when he’s investing in a manufacturer, he looks for a leader “who has moon-shot ideas, who wants to be innovative, who understands their customers’ needs and focuses on the problems and opportunities in the industry and finds solutions for them.” A great widget can quickly become outdated, and if you don’t have another idea, you’re sunk.

Entrepreneurialism, he says, is legacy manufacturing’s lifeblood—it can catapult a company that already has capital, an established supply chain and a manufacturing footprint ahead of any startup.

But that spirit can’t stay at the top—it has to spread throughout the entire organization. “You can’t just drive results by giving people a policy

and procedures manual,” says Keller. “That is not entrepreneurial. Entrepreneurial is giving them a job description that allows them to be innovative, to be efficient and to optimize the business.”

5. **Is a change agent** Sometimes you want a status



quo leader, a Pope Benedict to make sure everyone’s sufficiently bored into submission and the trains run on time before a Pope Francis steps in. Other times, you’ve already got a solid base to build on and you need a change agent who’s going to shake things up to get to the next level.

A rare breed, change agents have a vision and make big changes that are difficult for competitors to reproduce, says Paul Ericksen, a consultant, IndustryWeek contributor and former supply chain executive at John Deere. They look for team members whose skills and ambition fit the plan. They mentor employees, give them credit and advancement for successes, advance them in the organization and protect them from employees who resist change.

GM’s Mary Barra is a stellar example of a change agent, says Ericksen. She has a vision for the organization—move away from sedans, focus on electrification—communicates it clearly and simply and executes the big moves required (including shuttering five plants) to make it happen.

“Closing those factories—that wasn’t an easy decision,” says Ericksen. “To me, that’s not an incremental change. They’re making decisions that in the past General Motors would have a hard time doing because they didn’t want to upset the

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ship. They're [historically] incremental-type guys."

John Murphy, managing director of automotive equity research at Bank of America/Merrill Lynch, said at World Congress that what Barra is doing at GM "is pretty miraculous. Everything she's doing now is very, very forward-looking, very proactive."

Murphy also likes the vision of Don Walker at auto supplier Magna, who is showing that legacy suppliers can transform the auto industry with technology—in Magna's case, lidar, radar and cameras for Level 2 autonomous vehicles. "He is bringing a lot to the table for automakers in a way that is much more holistic than the narrowly focused suppliers."

6. Tells it like it is

It is the job of a CEO to tell the board that there's trouble ahead, says Steven Blue. Unfortunately, he adds, boards "like to live in Happy Land." For instance, when then-CEO Jeff Immelt left GE, his replacement, John Flannery, "let the board in on all the bad things that had been going on for years that they didn't know about. And what did the board do as a result? Hey, they fired the guy."

Blue recommends leaders inclined to share the raw story become practiced in the fine art of delivering bad news with good. "If you go to a board and say, 'We're in deep trouble—we've got to make major changes—if you just give them that story, they're going to boot you right out of their office. You also have to give them the other side.'"

7. Sees the competitive advantage in tech

VW, says Arndt Ellinghorst, has the right leader at the right time in Herbert Diess, the former BMW executive who's revamping VW for an electric-vehicle future. "He's someone who understands tech better than most auto executives," says Ellinghorst. "Driving this transformation into auto tech for a company like Volkswagen is a huge opportunity. It's the most global company; it's a company that has brand equity that works in any region of the world at a material rate. It's huge, so as a partner to work together with leading tech

companies it has a lot to offer. So having that CEO in place is hugely important for Volkswagen."

On a smaller scale, the speaker company Bose does a good job of developing high-performing teams that creatively apply technology, says Oca. Running with an employee idea, Bose introduced Sleepbuds on the crowdfunding site Indiegogo, raising \$450,000 of a \$50,000 goal to fund initial product development. Each donor received a set of Sleepbuds, and was encouraged to test the product and provide feedback on the site. Bose used the input to tweak the product before launching it widely. "From a digital perspective, people think labor is going to go away, but you basically need people to make technology work," Oca says. "You've got to make sure they have a career and instill passion."

8. Is still an old-school, big-picture person

Some say the best manufacturing leaders come up through engineering; others are partial to finance folks or even people from outside the industry who provide a fresh perspective. Steve Maurer, an engineer and MBA who is head of Alix Partners' manufacturing consulting division, says the distinctions don't matter that much, so long as the leader has a vision and understands enough about the shop floor not to be B.S.'d. He once worked with a strong manufacturing leader who was a finance guy who liked hanging out on the shop floor, "trying to understand what's driving the numbers and what's really happening and what the reality was behind the numbers. He couldn't tell you about feeds and speeds on a machine and all those gory details, but he understood at that next level how manufacturing works and how that is reflected in the numbers and how to use the data to make the numbers go where they needed to go."

Ericksen says the primary job of the CEO is to bring in the right people, "make hard decisions and make things happen. I would say from what I've seen—who's the CEO of GM? It's that gal ... I think she's doing a pretty good job."

Source: Industry Week



Corrugated paper packaging: solutions for a sustainable economy

Corrugated paper packaging is made up of 88 percent recycled content



The final episode of the award-winning television series *The Blue Planet II* shocked Europe. Naturalist Sir David Attenborough concluded his close look at the devastating impact of littering on marine life with a rallying cry to do more to protect the environment. The images shown have boosted desire for a wholly sustainable economy and drawn attention to the first Europe-wide strategy on plastics.

Adopted in January, A European Strategy for Plastics in a Circular Economy has set the target that “by 2030, all plastics packaging placed on the EU market is either reusable or can be recycled in a cost-effective manner.”

Commissioner Frans Timmermans said Brussels' priority was to clamp down on “single-use plastics that take five seconds to produce, five minutes to

use, and 500 years to break down again.”

A corrugated box that ends up in the ocean will biodegrade within two months.

Corrugated board stands out in the current discussion on waste management. While some other packaging materials are denounced as problematic and harmful to the environment, corrugated is the natural bio-based and biodegradable alternative to fossil-based products.

Corrugated paper is made from simple ingredients: air-pocketed paper, along with glue made from wheat or maize. This means that should corrugated paper packaging end up in nature, it's harmless rather than catastrophic. A corrugated box that ends up in the ocean will

Corrugated paper packaging: solutions for a sustainable economy

biodegrade within two months.

However, the European corrugated industry wants all fibers to be recycled. Corrugated paper packaging is 100 percent recyclable, and fibers can be reused up to 25 times.

Paper and board packaging already achieve high rates of recycling.

In 2016, 81.9 percent of all used paper-based material in Europe was recycled. While this is an amazing figure, we can do better. The new paper recycling targets set by the EU Commission (85 percent by 2030) will encourage industry to continue its efforts and further contribute to building the circular economy in Europe.

Corrugated paper packaging is made up of 88 percent recycled content with the additional fresh fibers coming from sustainably managed forests. While corrugated packaging makes the best use of secondary raw materials, there is an increased need for a separate collection of paper and board - not only to ensure high-quality material for recycling, but also because we want every fiber back.

Recyclable and biodegradable, the circular economy has always been the norm for the corrugated industry.

With food waste, another issue on consumers' minds, corrugated paper packaging is also designed to provide great protection for the food it carries and reduce spoilage.

Corrugated cardboard naturally ensures fruit and vegetables stay fresh longer, while the delicate produce is cushioned between the layers of paper. A 2016 study by the University of Bologna showed corrugated board keeps fruit fresh up to three days longer by reducing contamination.

Corrugated paper packaging is extremely versatile. It can be made into any shape or size — anything from colorful boxes for safeguarding

fast-moving consumer goods such as chocolates, to trays for taking care of fragile fruit. It's also the ideal material for other purposes too, including furniture, exhibition stands, and even housing insulation.

The growth of consumer demand for sustainable and recyclable packaging is driving innovation. The corrugated and paper industries have found excellent alternatives to fossil-based products, ones that are friendly for our environment.

We want every fiber back. Please sort, collect, and recycle your packaging - it's our precious raw material

Consider the corrugated packaging designed for bottled drinks purchased online: its innovative interior structure creates an air pocket capable of absorbing the impact of falls from up to a height of 140cm. If that wasn't innovative enough, it's easy to assemble, doesn't need adhesives, and includes a tamper-proof seal.

Corrugated sometimes even offers more features when it replaces traditional packaging materials. Take a six-pack of cans: corrugated not only provides a sturdy and ergonomic hold, but also space for advertising and product labelling.

All in all, the European corrugated industry is sustainable by design, circular by nature, innovative, and competitive. Corrugated paper is natural: it's bio-based, biodegradable, and recyclable. If Europe adopts corrugated and a truly circular economy, it can help build the sustainable economy that will protect all our futures. And remember, we want every fiber back. Please sort, collect, and recycle your packaging - it's our precious raw material.

Source: Politico



European Commission Approves Smurfit Kappa WestRock Merger

The European Commission has approved the proposed merger between Smurfit Kappa Group plc, and WestRock Company, according to Competition Policy International.

Dublin, Ireland based Smurfit Kappa and Atlanta, Georgia based WestRock announced plans of a possible combination in September 2023 that would create Smurfit WestRock, a global leader in sustainable packaging.

The Commission determined that the merger, despite its magnitude, would not pose significant competition issues, the report said. The decision clears a major regulatory hurdle.

Smurfit WestRock would be incorporated and domiciled in Ireland with global headquarters in Dublin and North and South American operations headquartered in Atlanta. The Potential Combination would be affected through an Irish scheme of arrangement involving Smurfit Kappa and a merger of a subsidiary with WestRock.

The Boards of Smurfit Kappa and WestRock believe



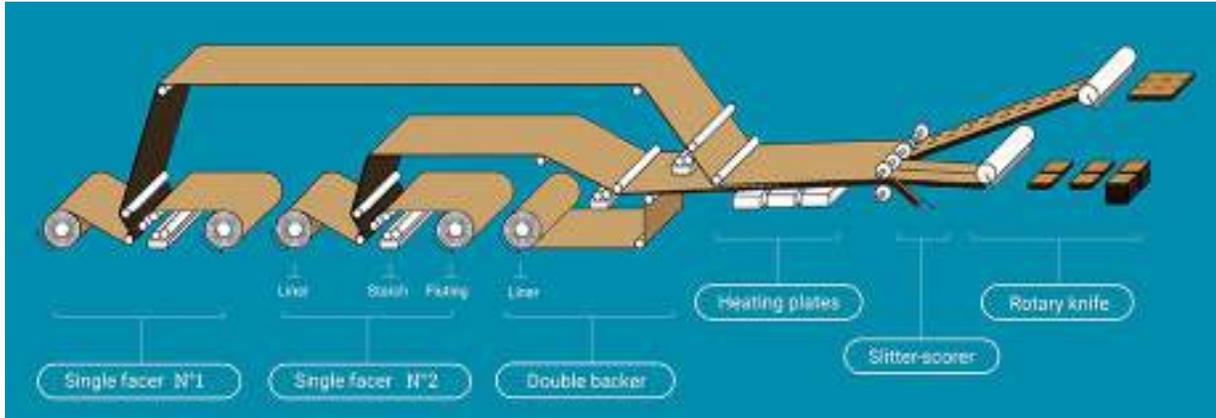
the combination will create the global “Go-To” packaging partner of choice by combining two complementary portfolios and unparalleled geographic reach across 42 countries. Additionally, they boasted improved operating efficiency and increased returns across over 500 converting operations and 67 mills.

Source: Board Converting News



How to reduce the scrap rate of corrugated board production line

The stable operation of the equipment is the basis for the quality assurance of corrugated cardboard. In this regard, enterprises should work from the following perspectives:



1. Maintenance and maintenance of equipment is the primary task

The abnormal shutdown of the corrugated cardboard production line will produce a large amount of waste products, resulting in a reduction in production efficiency and an increase in production costs. Effective maintenance and maintenance of equipment is the most effective way to reduce the shutdown rate.

2. Daily maintenance

Whether the equipment can operate normally depends to a large extent on whether the daily maintenance work can keep up. The general equipment maintenance principles are: sufficient lubrication, complete cleaning, careful and meticulous.

There are hundreds of lubricating parts in the corrugated board production line, which can be divided into oil lubricating parts and grease lubricating parts according to the different lubricants used. Different lubricating parts should strictly use corresponding lubricants, and the lubricating parts should be kept fully lubricated. If the temperature of corrugated roller and

pressure roller is high, high temperature grease should be strictly used.

The cleaning of the equipment also plays an important role in the maintenance process. It is

closely related to the lubrication condition of the equipment. It should be mainly dust-free and free of debris to avoid accelerated wear and even damage of parts due to the influence of dust and debris.

3. Maintenance work

The equipment department should formulate a detailed maintenance plan and implement it according to the problems that occur during the use of the equipment to ensure the stable operation of the equipment.

4. Management of equipment wearing parts

For the management of equipment wearing parts, real-time monitoring is very necessary. It is necessary to establish a tracking account for the use of equipment wearing parts, conduct real-time monitoring and analysis, find out the reasons for the rapid wear and tear of wearing parts, and formulate countermeasures to prevent unplanned downtime due to damage to wearing parts.

Under normal circumstances, the management of wearing parts should take the following two measures: one is to change the material and

How to reduce the scrap rate of corrugated board production line

manufacturing process of the wearing parts to achieve the purpose of prolonging the service life; the other is to use them in a reasonable use environment to reduce artificial , Unnecessary damage caused by environmental factors.

5. Pay attention to the renewal and transformation of key components of the equipment

In recent years, technological innovations in corrugated cardboard production lines have emerged one after another, and new technological highlights have led companies to update and transform key components of corrugated cardboard production line equipment. At present, the special module belt for the corrugated industry invented by HONG'S BELT is made of the newly developed HK plastic material, which greatly increases the load-bearing capacity. And it will not cause contact damage to the cardboard, and the application of this solution in China is very mature.

6. Production management system

Using the production management system of the corrugated board production line to control the production cost, the production efficiency of the corrugated board production line can be more accurately calculated, and the speed of the entire production line can be synchronized. Generally, the waste rate of corrugated cardboard can be reduced by more than 5%, and the amount of starch is also significantly reduced.

Automatic paper splicer

The use of automatic splicing machine for splicing paper can avoid unnecessary waste during splicing, reduce the shutdown of the corrugated cardboard production line and the occurrence of quality problems, and ensure a stable high production speed and high cardboard quality of the entire production line.

Paste machine touch rod

The contact pressure bar of the paste machine is made of many wear-resistant arc-shaped plates and springs. The elastic force of the springs always makes the arc-shaped plates evenly fit on

the paste roller, even if the paste roller is worn and concave, the spring plate with the depression, the corrugated paper is always evenly attached to the paste roller. In addition, the spring with balanced elasticity will automatically adjust the height according to the thickness of the base paper and the change of the flute shape, so that the flute height of the corrugated core paper when it enters the gluing machine and the flute height when it leaves the gluing machine after gluing can be guaranteed to remain unchanged, effectively controlling the amount of glue applied and the quality of the board are greatly improved.

Hot plate touch plate

The hot plate contact plate is used to replace the traditional gravity roller contact pressure heat transfer method. It is made of special wear-resistant material plates. Each plate is equipped with a spring with balanced elastic force, so that each plate can fully touch the hot plate, which increases the heating area of the cardboard and improves the heat transfer efficiency is improved, which can improve the speed of the vehicle, ensure the intact corrugated shape, enhance the strength of the corrugated cardboard and increase the thickness of the corrugated cardboard.

Automatic paste making system

The paste making process is the process with the largest fluctuation and the most critical impact on the quality of the cardboard in the entire production process. The traditional paste-making formula is single, and it is easy to cause inaccurate feeding due to human factors, which makes the quality of the adhesive unstable. The automatic paste making system is a typical complex integrating technology, machinery and automatic control. It can process the formula function, historical data, real-time data, dynamic monitoring function, human-machine dialogue, etc. in the paste making system. Stable and controlled, it can make the operation of the production line more stable, reduce human factors, completely solve the quality problems of cardboard such as foaming, fluting, and softening, and reduce the scrap rate.

Source: ICONVEY



Why Steam Technology Is Used in Paper Mills and Corrugated Packaging Plants

In today's world of electrical energy, paper mills and box plants still prefer steam to deliver heat energy to their processes. To understand why steam technology remains the most effective process heat source for paper mills, box plants and many other process industries, it's useful to understand its intrinsic benefits.

Steam Applies Even Heat



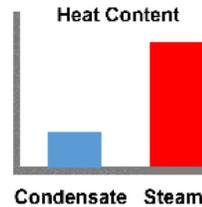
Paper mills and corrugated packaging plants use rolls that are internally heated with steam. Maintaining a uniform temperature across the surface of the roll is essential for making quality product. Since steam is a gas, it fills the entire volume of the roll and evenly distributes heat as it condenses.

Steam Temperature is Exact



At a given pressure, saturated steam always has the same temperature. By controlling the pressure, operators can set the exact temperature of the steam inside the roll. For example, at atmospheric pressure, the temperature is always 212° F (100° C). At 150 psig (10 bar) the temperature is always 366° F (185° C). As run rates increase or as heavier paper grades are produced, higher pressures and temperatures are needed. This predictability allows operators to control their process and change temperature as necessary.

Steam Carries Significant Energy



High-speed industrial processes demand a lot of energy. The latent heat in steam is a very efficient way to carry large amounts of energy to the process. At 150 psig (10 bar) saturated steam carries 3.5 times the heat content, or enthalpy, of condensate. This energy is immediately released as steam contacts the inside surface of the roll and condenses.

Steam is Efficient



Most steam systems are powered by high-efficiency natural gas boilers, and natural gas is a relatively inexpensive form of energy in many parts of the world. The steam that is generated operates in an insulated, closed-loop system, and condensate is returned to the boiler for reuse. The steam generation is safely kept separate from the production process, but its onsite proximity limits energy loss in steam delivery.

Steam Systems are Optimized



Energy efficiency, product quality, and operating speed are maximized with an efficient steam system. Optimizing steam systems requires extensive systems knowledge.

Source: Kadant

What Accelerates Manufacturing Business Growth?

As entrepreneurs, we all want to grow our companies, but many don't know how to facilitate growth. Or sometimes we do, but then we reach a level where what we were

This can give an entrepreneur a Superman complex. We can do it all and we don't need help. Inevitably, manufacturing business growth leads to problems. Problems can be anything from:



doing, no longer gets results. If that's you, read on.

Founder-led companies go through more changes than entrepreneurial-led businesses that were acquired later in their lifecycle. Founders go through the sometimes more painful process of growth from infancy to becoming a solid lower middle-market company.

In the early years, founders are doing anything and everything to get the business off the ground. As the entity's income grows, the founder can thankfully bring on help. This growth era makes the founder a kind of "jack of all trades." They successfully navigate engineering, machining, sales, customer relations, accounting, and HR.

- Lack of clarity and focus
- Strategizing a growth plan
- Lack of skilled workers
- Creating a positive Company culture
- The need for an ERP system and the difficulty of implementing
- Sales & Marketing
- Brand awareness and positioning in the marketplace
- Cash flow and accounting
- The need to implement lean
- ISO and other certifications to remain competitive

What Accelerates Manufacturing Business Growth?

I'm sure any entrepreneur reading this could add to this list. The challenge for entrepreneurs is to understand that although they did everything in the early years, they will need targeted expert help if they want to accelerate manufacturing business growth. Many may say that it's not worth the cost. Statistics say otherwise.

Expert Help – Benefits vs. Cost

According to Dr. Merrill C. Anderson, a Fortune 500 Company wanted to study the ROI of Executive Coaching. They concluded that the coaching produced a 788% return on investment. In another survey of 100 executives in Fortune 1000 companies, participants realized a 6 X ROI.

Coaches provide visibility into your business that you might not have because you're too close to it. There's value in getting unbiased third-party insights. Specialty coaches and professionals can also bridge the knowledge gaps in an organization.

Getting Clarity on Vision, Priorities & Goals

On focus and strategy, we spoke to Michael Barrovecchio of Capo Leadership Consulting, who states, “Many high-achieving entrepreneurs and executives understand that they need help in maximizing their personal and professional potential. They sometimes lose sight of their big picture as they work on the daily details of their business. My mission is to walk alongside them and help them clarify their personal and professional vision, set goals, stay focused, generate ideas, navigate obstacles, and remain resilient.” Michael helped one client achieve 535% revenue growth by helping them strategize priorities.

Dealing With Labor Shortages & Work Culture

On employee engagement and work culture, Lisa Ryan, best-selling author of ten books including “Manufacturing Engagement: 98 Proven Strategies to Attract and Retain Your Industry's Top Talent,” opines:

“In today's employee-centric job market, it's

more important than ever to create a culture where people feel valued, appreciated, and heard. Although this may sound like “soft skills,” there is nothing soft about the results. When employees are engaged, they are more likely to stay with you. They have fewer safety accidents, are more productive, and provide greater quality work. When you put pen to paper and see what your turnover is costing you, you'll discover that investing in your employees and workplace culture gives you a huge bang for your buck. The small moments of connection, gratitude, and employee appreciation, done consistently, keep your top talent from becoming someone else's.”

Benefits of Implementing Lean and Becoming ISO Certified

On the more technical side, John Kennedy, president of New Jersey Manufacturing Extension Program, Inc. shared the following on the benefits of implementing Lean and becoming ISO certified:

“There is a way for manufacturing businesses to immediately start improving their operation, and it's called Lean. Manufacturers have the opportunity to reduce waste, improve efficiency, and create a more productive workforce by employing its principles. The only caveat is that at the heart of Lean is the phrase, continuous improvement. Without support and buy-in from every level of the organization, a Lean operation will not remain Lean. Instead, it will default back to the old ways of doing business. MEPs play an essential role in helping a manufacturing business become and continuously improve their Lean initiative. Through training, consulting, and a long-lasting partnership, MEPs help manufacturers ensure they're always continuously improving.

“When it comes to ISO, it has to be understood that some of the certifications available can help a manufacturing industry break into new markets. These standardized quality control procedures come in many forms. There are general ISO certifications like 9001:2015, and much more specific certifications like the one for medical device manufacturers, ISO 13485:2016. So not only is it challenging for a manufacturing business

What Accelerates Manufacturing Business Growth?

to become ISO certified on their own, it's difficult to find out which ISO cert. may be the right one for your business. That's where MEPs come in. We have experts available to do the heavy lifting and make sure you're set up for success. There's no reason to start this journey on your own when you have partners willing and able to help.”

Sales and Marketing For Today's Manufacturer

As an M&A intermediary specializing in the sale of manufacturing companies nationally, the component I see most often lacking in founder lead organizations is a sales and marketing function contributing to brand awareness. If companies focused on this during the years approaching their desire to sell, they would be much better positioned for the M&A process and likely sell at a higher price.

We spoke with an expert in marketing for the manufacturing sectors, Joe Sullivan of Gorilla 76, LLC. Joe tells us, “The industrial buying process has dramatically changed over the past decade. A vast majority of midsized B2B manufacturers, especially those second- and third-generation family-owned businesses, have built their companies on the backs of reputation, referrals and repeat business. But as we move deeper into an era where Millennials are taking on positions of buying power in their respective organizations, and when information about anything is a Google search away, we need to fundamentally change the way we think about creating awareness, building trust and opening the door to sales conversations.

“Whereas 'marketing' has traditionally been viewed as just another expense on the P&L, there to facilitate trade shows and create materials to support the sales team, its future in manufacturing is about proactively creating demand in front of the buying process influencers from the right companies. And that requires a whole new playbook.”

For most, this new playbook will require expert help to implement, because it's so different from the old manufacturing paradigm.

Conclusion

The thought I want to leave you with is that coaches can help you get to the next level and provide a bridge over gaps in your team's knowledge base. They can accelerate growth in specific areas. Also, seek a specialist in the area you're struggling in.

Don't hire the sales and marketing specialist if your manufacturing throughput is what needs correction. Having worked with several coaches and consultants at different stages of my almost 30-year career, I would offer for consideration that the order in which you do things matters. As a manufacturer, if you're engaging with a sales and marketing firm, make sure you have addressed and are prepared for the capacity issues that an influx of business will bring. A good strategy coach can help you plan the appropriate action steps.

“ There is a way for manufacturing businesses to immediately start improving their operation, and it's called Lean. Manufacturers have the opportunity to reduce waste, improve efficiency, and create a more productive workforce by employing its principles

What accelerates manufacturing business growth? It's hiring specialists to guide you and facilitate growth in specific areas. It's investing in your business, yourself, and your team. What accelerates manufacturing business growth is the process of continual improvement. This investment always has a price, but it also provides a very high ROI.

Source: Frances Brunelle - Manufacturing M&A Expert

Case Study: Corrugated Machine Cuts Start-up Time in Half

With sustainability issues at the forefront of public thought, many boxmakers are considering how to contribute to “2050 carbon-neutral” and other sustainable development goals. Yet in a capital-intensive industry, plants need a variety of effective solutions—without heavy investments or large instruments.

THE TRIAL

A boxplant running a single/double facer corrugator machine was operating 21 hours per day, five days a week. Its boiler operating time (flue tube boiler) was at 4,410 pounds/hour × 4 units, using liquified nitrogen gas (LNG) as fuel. The plant's boiler fuel cost was US\$600,000 per year.

manufacturing processes in petrochemicals, steel, pulp and paper, and other industries. They also remove harmful substances from wastewater and offer efficient reclamation and recycling to minimize environmental impact.

The trial used Kurita's Dropwise Technology, which is designed to improve productivity and boosts heat transfer efficiency in industrial systems and heat exchangers. The product is dosed continuously into the steam line in front of the target device, creating a water repellent film on the surfaces. Increasing the water repellency greatly improves heat transfer efficiency, which helps to optimize productivity. At the same time, steam consumption is reduced, which leads to lower fuel consumption and reduced costs for water and energy.

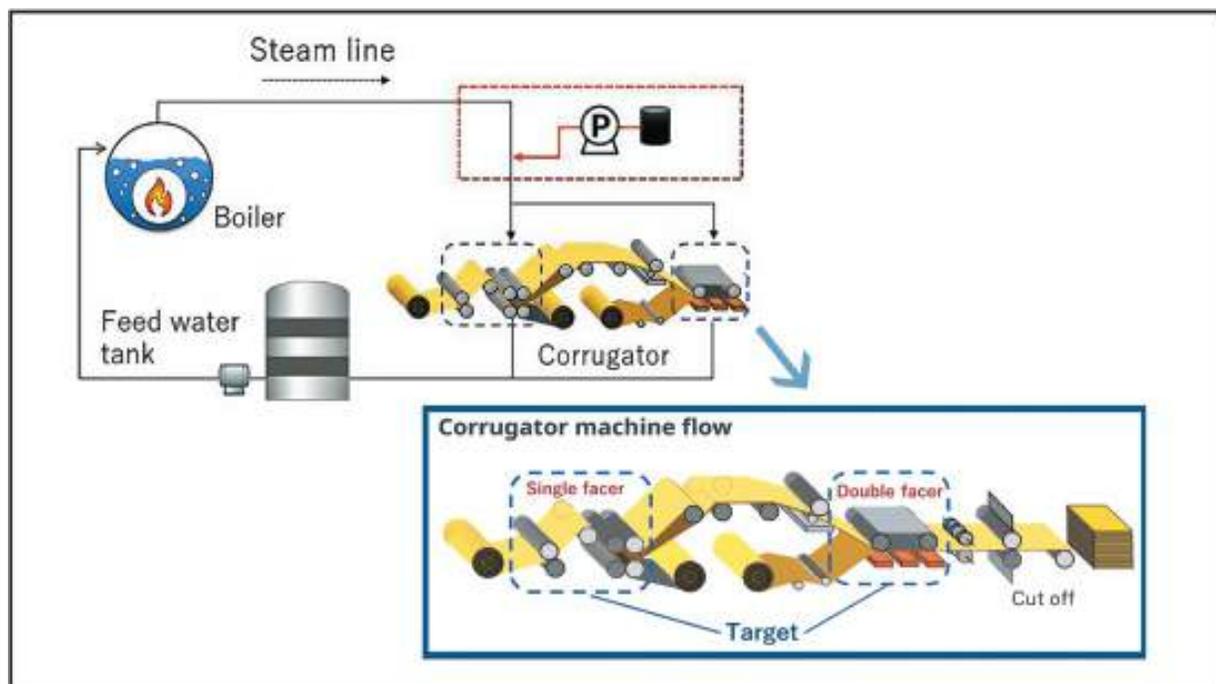


Fig. 1. The method for adding the product trialed (P) to the process

The plant decided to trial a product from Kurita, a Japanese provider of water treatment chemicals intended to prevent problems in boilers and cooling water systems in industrial manufacturing. The company has experience in improving production efficiency of the

The objective of the trial was to confirm the effect of the technology - especially reduction of start-up time of the corrugator machine, steam pressure/fuel consumption in the boiler, and CO₂ emission.

Case Study: Corrugated Machine Cuts Start-up Time in Half

METHOD AND RESULTS

Working with Kurita, the corrugated plant crew applied Dropwise Technology to the corrugator machine hoping to improve the heat transfer coefficient of steam with only the chemical injection (Fig. 1). Dropwise was injected into the

up time was reduced by between 30-60 minutes.

- The boiler steam pressure was reduced. Measured boiler steam pressure dropped from 188 psig to 178 psi.
- There was a reduction of the corrugator

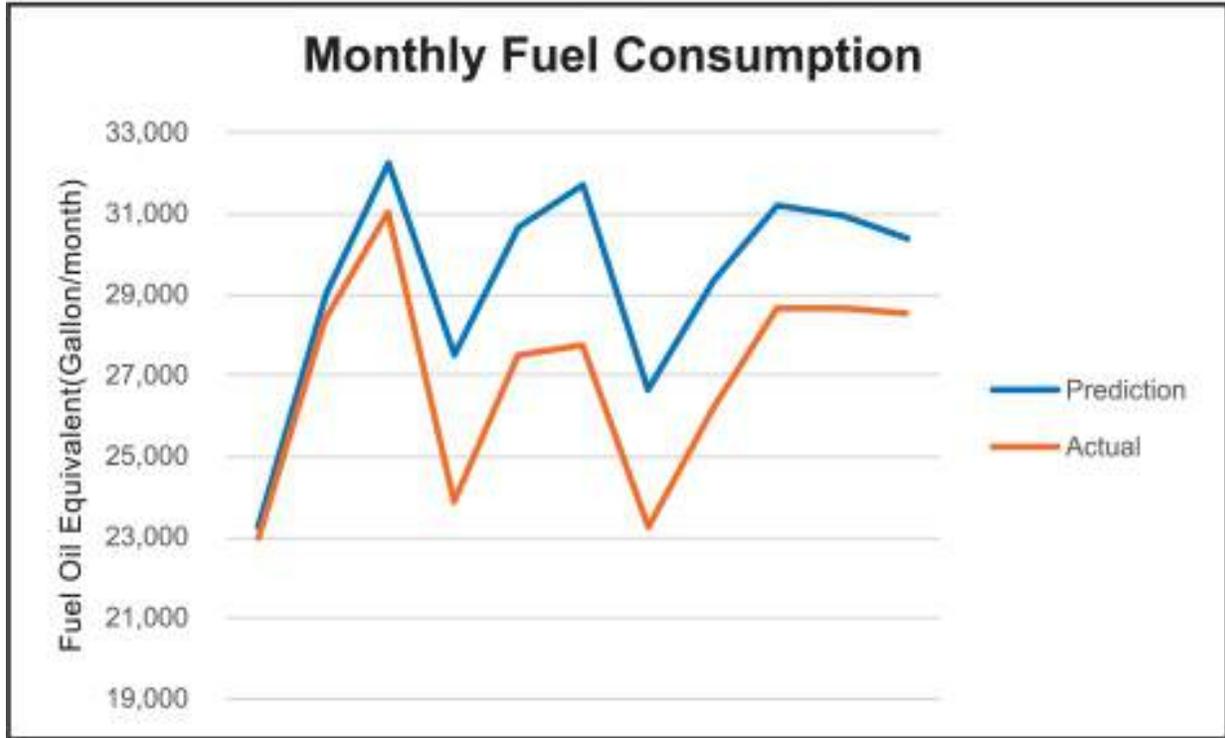


Fig. 2. Reduction in fuel consumption on the corrugated machine. Predicted values were calculated in multivariate analysis based on past data.

steam line to form a water repellent film on the steam side surface of heat transfer. Dropwise covers the entire surface with a water repellent film, preventing water from forming an isolating layer.

The trial confirmed significant improvement of heat transfer efficiency leading to reduced steam consumption, less CO2 emission, and increased productivity. Fuel consumption was reduced even more than predicted (Fig. 2). Results included the following:

- The start-up time of the corrugator machine was reduced by half. Average reduction of start-up time on weekdays was 15-30 minutes; at the beginning of the week, start-

machine's boiler fuel consumption. Average reduction rate was 8 percent.

- CO2 emission at the plant was reduced by 551,000 pounds of CO2 per year.

The Agency of Natural Resources at the Energy Conservation Center, Japan, awarded Kurita the 2019 Energy Conservation Grand Prize in the Product and Business Model category for the improved heat transfer efficiency made possible through Kurita's Dropwise Condensation Technology. The company will launch Dropwise in the US through Kurita America.

Source: Tappi (Paper 360) by Kevin Milici, EVP Marketing and technology - Kurita America

Why the Corrugated Industry needs Machine Learning Technology

As the capability to make industrial machines more intelligent improves, there are now more reasons than ever to invest in technologies that will future-proof your equipment. The retirement of many veteran machine operators coinciding with the influx of new, undertrained workers is at the root of many headaches for converters today. An increase in

why not in corrugated too?

There are now IIoT (industrial internet of things) solutions designed to increase your bottom line and compensate for the qualified operator shortages in the corrugated sector. With remote monitoring, machine learning and artificial intelligence, IIoT can not only read and report your machine data, but over time can learn and



unplanned downtime, operator safety risks and machine maintenance costs are just some of the consequences of this staffing predicament.

However, the traditional operator challenges plaguing the industry these last few decades are issues that have been solved in many other manufacturing sectors through technology. So

predict maintenance needs to your production staff. This is the kind of visibility that allows staff to make more informed, strategic decisions for the betterment of your organization.

Mitigate workforce challenges

As more veteran operators are rightfully entering retirement, converters are finding their skills and

Why the Corrugated Industry needs Machine Learning Technology

experience incredibly hard to replace. Their experiential knowledge acquired through many years of operating the same converting equipment may have never been passed down, walking out the door with some of your best people. As younger, less-skilled operators and maintenance technicians move into those positions, you may have noticed that your operations have become a bit more clunky and inefficient, since they simply don't know the quirks and tendencies of the machines.

Corrugated IIOT technology brings the power of machine learning and artificial intelligence to your production floor, providing actionable insight used to optimize your fleet operations and maintenance activities effectively. The software acquires a wealth of tribal knowledge as your team interacts with it, training the machine to later predict machine failures and suggest submitted resolutions – educating operators for years to come. In the age of endless information at your fingertips, it's time to use that technology to capture and share key equipment knowledge that keeps your operators safe and your presses running.

Increase your bottom line

As your operators become more skilled and informed by IIoT systems, the results are simple: cost savings and reduced downtime. With the average cost of downtime at \$1,000 an hour, according to industry benchmarks, you need to keep your unplanned downtime to a minimum to remain profitable. IIoT software is capable of saving time and costs by notifying your team of optimal maintenance intervals, allowing your team to consolidate schedules for maximizing your technicians' time. Additionally, the visibility provided by IIoT software allows your production staff to quickly identify machine anomalies and, overall, optimize your fleet and staff. Multiply these efficiencies across multiple machines, and your production floor's ROI increases dramatically.

Connect and inform leadership

Visibility is the key to informed decision making. Being aware of your production numbers, unplanned downtime, maintenance schedules and more, is crucial to optimizing your production floor for efficiency. With corrugated IIoT software, your production staff have the machine-learning tools they need to capture and predict important events driving the productivity and safety of your converting equipment. However, without this technology, equipment knowledge tends to be siloed, maintenance schedules are based on tradition rather than data and your operations slowly fall behind the competition. Effective leadership is informed leadership and with the machine-learning technology of corrugated IIoT software, your staff will have actionable data to structure their fleet and team for maximum productivity and profitability.

The future is here

The cost of a single converter developing an IIoT machine learning software for their plant is simply unreasonable – it would take years to see your ROI. But unless you've purchased new capital equipment in the past few years, your existing machines may not be equipped with the technology needed to digitize your operations and data. That is why Sun Automation has created a IIoT, machine-learning solution for converters seeking visibility into their machine and operator performance – Helios. In 2021, Sun Automation launched Helios, a AI/machine learning platform that monitors, learns, and predicts important events driving the productivity, safety and profitability of your corrugated equipment. We are excited and eager to bring the power of IIoT to the corrugated converting industry!

Source: Sun Automation



Revolutionising the electronics industry: The latest packaging innovations

The electronics industry is one of the most dynamic sectors in the world, constantly evolving to meet changing consumer demands and technological advancements. The industry has grown exponentially over the years, and as a result, the need for reliable and efficient packaging solutions has become increasingly important. The right packaging is critical in ensuring the protection of electronics from damage during shipping, handling, and storage.

Foam Inserts: Foam inserts are another innovative packaging solution that is gaining popularity in the electronics industry. These inserts are custom-made to fit the shape and size of the electronic product and offer excellent protection during transportation. Foam inserts are lightweight, durable, and can be reused, making them an eco-friendly packaging solution.

Smart Packaging: The emergence of the Internet of Things (IoT) has paved the way for smart



As the electronics industry continues to evolve, so too do the packaging solutions that support it.

The latest packaging innovations that are revolutionising the electronics industry:

Anti-static Packaging: Electronics are highly sensitive to static electricity, which can cause significant damage. Anti-static packaging solutions are designed to prevent static electricity buildup and protect the electronics during shipping and handling. Anti-static packaging materials are commonly used in the electronics industry for packaging products such as hard drives, motherboards, and integrated circuits.

packaging solutions that can monitor and track products during transit. Smart packaging uses sensors, RFID tags, and other tracking technologies to provide real-time information on the location, temperature, humidity, and other environmental factors that can affect the electronics during shipping. This type of packaging allows companies to optimise their supply chains, reduce waste, and ensure that products are delivered to customers in optimal condition.

Corrugated Boxes: Corrugated boxes have been around for decades, but they continue to be a popular packaging solution in the electronics

Revolutionising the electronics industry: The latest packaging innovations

industry due to their durability and cost-effectiveness. Corrugated boxes are made of sturdy materials and offer excellent protection against impact and shock. They can also be customised to fit the specific needs of the electronics being shipped.

Sustainable Packaging: Sustainability has become a major concern for consumers and businesses alike. As a result, sustainable packaging solutions are gaining popularity in the electronics industry. These packaging solutions are designed to minimise waste and reduce the carbon footprint of the electronics industry. Sustainable packaging solutions include biodegradable materials, recycled materials, and packaging designs that are optimised for minimal waste.



Cushions: Air cushions are another innovative packaging solution that is gaining popularity in the electronics industry. These cushions are made of lightweight materials and provide excellent protection against impact and shock during shipping. They are also easy to use, can be customised to fit the specific needs of the electronics being shipped, and are eco-friendly.

Vacuum Packaging: Vacuum packaging is a packaging solution that removes air from the package, creating a vacuum that protects the electronics from moisture, dust, and other contaminants. Vacuum packaging is commonly used for products such as circuit boards, hard drives, and other sensitive electronics that require protection from the environment.

Customised Packaging: Customised packaging solutions are becoming increasingly popular in the electronics industry as companies seek to differentiate themselves from their competitors. Customised packaging solutions allow companies to create unique packaging designs that reflect their brand identity and offer added value to customers. Customised packaging solutions can include custom graphics, logos, and other branding elements.

The design of electronic packaging plays a crucial role in the protection and safe transportation of electronic products. Corrugated electronics packaging, along with other innovative packaging solutions such as anti-static packaging, foam inserts, smart packaging, air cushions, vacuum packaging, and customised packaging, are revolutionising the way electronics are packaged and shipped. As the electronics industry

continues to evolve, innovative packaging solutions will continue to play a critical role in meeting the changing demands of consumers and advancements in technology.

Source: Ficuspax



WICMA R&D Centre completed their 46th Certificate Course



The WICMA R&D Centre hosted their 46th Certificate Course in Corrugated Packaging on from February 5-10, 2024 at WICMA Auditorium, Mumbai. This intensive Six-day course covered a range of topics related to kraft paper, corrugated board, corrugated boxes, adhesives and more.

Participants poured in from various cities Pan India like Mumbai, Satara, Chennai, Bangalore, Jammu & Kashmir, Kolkata, Uttar Pradesh, Kerala, Karnataka, Kolhapur, and Surat with a total of 38 pax for this course. The Federation of Corrugated Box Manufacturers Association (FCBM) provided support for this educational initiative.



From L-R: Shlok Kedia – WICMA Committee member, Ram Kumar Sunkara, Owner – SS Consultants & CCP course faculty, Dharmendra Pandya – President, FCBM, Anil Loya – President, WICMA and Rohit Bubna - WICMA Committee member

WICMA conducts Practical Testing Course

WICMA conducted a Practical Testing Course on Feb 18-20, 2024 at the WICMA R&D center, Mumbai.

Manoj Rahate, Deputy Director at the WICMA R&D Centre, led an on-site training session at the Kalyan Unit of Grasim Industries Limited. From Grasim industry's design and development departments 25+ inquisitive participants enrolled for this training focusing on the 'Fundamentals of Packaging'.

Following the training, Grasim Industry's representative expressed their high appreciation for the content, delivery, and the customization that perfectly aligned with their specific requirements. The positive outcome has led to inquiries about similar on-site training sessions at their other units. This achievement underscores the effectiveness of the training program and its impact on enhancing skills within the organization. The business head at Century Rayon wholeheartedly shared positive feedback for the training session.



WICMA hosted a presentation and Q&A session by CA Parvathy Ganesh from M/s S. R. Divatia & Co on 16th Feb 2024 at WICMA Auditorium

The latest amendment to rules with regard to payments to MSMEs introduced in the last budget with the new clause no (h) added to Sec 43 (b) of the IT act has caused some confusion. RAs have organised presentation on this subject by experts on the issue to enlighten members.



WICMA Deccan Division also arranged a Seminar on 21st Feb 2024 on the topic "Sec 43B(h)" and subsidy to MSME at the Poona Club, Pune. Shri Sachin Tulsian from ASAT & Associates were the esteemed speaker for the session.



UPCBMA conducts MC meeting & organised two sessions in March 2024



UPCBMA organised a special session on the recent MSME payment rule subject on the eve of the 2nd MC meeting at Hotel Radison Blue Dwarka New Delhi i.e. on 8th March 2024. CA Sh. Atul Aggarwal threw light on the subject and also fielded many questions from the audience.



This was followed by a presentation by the NMDC Chairman, Shri Aditya Sood on the subject "Longer Freshness More Demand for Box" where he informed members on a new packaging tech - a sheet branded as "FRESHMAMA" to keep green vegetables and fruits fresh for longer time by controlling ethylene gas emission which is the cause of aging of fruits and vegetables. This product used in conjunction with corrugated boxes has to potential to increase the demand and market for corrugated boxes.

