

Denim rules



★ ★*Concept Driven Chemicals





2 - 3	Denim for Classes & Masses
4	Denim-Ever Youthful Fabric
5	R & D Center
7-11	Novel Washing Effects on Denim
12-13	Americos Ties-up with Aglon
14	Discover Live Wire
15-16	Ball Blast Effect
17	Amazing Innovations
18	Americos Ties-up with CTI
19	Color Expression & Influencing Factors
20	Participation at Exhibitions
21	Knowledge Mosaic
22	Quiz
25	Blue Ocean Strategy



Americos Industries Mind



Denim rules the roost. India is a producer of excellent quality denim fabrics with almost all varieties available with the manufacturing mills. Indian economy is now starting to inch closer to the Chinese economy. The abolition of the WTO quotas for textile products, has greatly appreciated India's manufacturing exports bill. The aggregate GDP stands at 8.1% and mood of the Indian economy is very upbeat. Technological developments are coming like tsunami in terms of value additions from major generic areas like biotechnology, nanotechnology, and information technology. To face this tsunami, we have to gird up our belts and face boldly the intense competition in the textile and garment and particularly the denim industry.

The mood of various stakeholders is very buoyant. The government is ready to play its facilitator's role by building garment parks, special concessions to garment and textile industries, textile upgradation funds and the like. Research, management and industry associations throughout the length and breadth of the country are abuzz with various academic activities like seminars, symposia, workshops, and conferences on one or the other aspect of textile and garment industries. Americos, headquartered in Ahmedabad, India, is the leader in garment and textile specialty chemicals. A regional office in New Delhi caters to the needs of customers based in the northern region, and a distributors' network spread all over India. We are continuing to expand our business locations strategically to serve our customers effectively and efficiently.

To provide the latest and emerging innovations, we have set up a State-of-the-Art R&D Center. This center further in-house R&D activities to provide niche products and solutions for discerning customers.

Our products have good acceptability in India as well as in North America, Europe, South Asia, South-East Asia, Far East, and Middle East. We also provide product consultancy to create new fashions through our Concept Driven Chemicals and bio-products. Economical competitiveness is never disregarded. Our customers benefit by saving not just their chemical cost but other production resources like time, labor, water, and electricity.

Our human capital comprises of well qualified and experienced professionals. They love to interact and collaborate with customers until complete success. They are creative, dedicated and focused.

With warm regards,

- Cich suns

Ashok Khanna Managing Director





Denim Tale:

One of the features of the modern life is the attention being paid to dresses to making them attractive and fitting to the state of mind / spirit. Of all the fabrics, denims and denim dresses are the substrates that have been able to satisfy the needs of ever increasing craze and wildly excited and enthusiastic interests that keep changing.

Lo and behold, what a staggering variety of jeans: Torn jeans, creased jeans, faded jeans, there is no end in jeans fashion. Malls and multiplexes, schools and college campuses, streets and bazaars, wherever we look around, it is a blue ocean. Denim is the fabric of centuries and it has a very interesting tale to tell.

It all began in California, the golden state of the USA, where legendary Levi Strauss made the first jeans. The year 1873, was the year of gold rush era. Jeans got created in Genoa, Italy when the city was an independent republic and a naval power. Jeans were made for the Genoese navy because it required all-purpose trousers for its sailors that could be worn wet or dry. Jeans were laundered by dragging them in large mesh nets behind the ship, and the seawater would bleach them white for an attractive blue-white contrast and soften the garment a great deal for comfort.

Levi Strauss was a Bavarian dry goods merchant living in San Francisco. One of Levi's customer was Jacob Davis, a tailor who frequently purchased cloth from Levi Strauss & Co. He had an idea to use copper rivets to reinforce the points of strain, such as on the pocket corners and at the base of the button fly. Jacob along with Levi Strauss took the patent and the blue jeans, as we know it today, was born.

Blue Jeans:

Initially blue jeans were simply sturdy trousers worn by miners and workers. In North America during the 1950s, wearing of blue jeans by teenagers and young adults became symbolic of mild protest against conformity. This was considered by some adults as disruptive; for example, some movie theaters and restaurants refused to admit patrons who wore blue jeans. During the 1960s, wearing of blue jeans became more acceptable and by the 1970s, it became a general fashion in North America, at least for informal wear. Acceptance of jeans continued through the 1980s, and 1990s to the point where jeans are now a wardrobe staple, with the average American owning 7 pairs. Outside of North America, particularly in Russian popular culture, blue jeans were and are fashionable, symbolizing American culture and the good life. In China, jeans are known as cowboy pants, indicating their association with the American West.

Another famous name in jeans is that of Henry David lee. When Lee's suppliers in the United States could not guarantee a reliable supply of work clothes, Lee opened his own factory and started marketing jackets and dungarees pocketed trousers with a flap over the chest and straps over the shoulders similar to overalls. The driving force was the driver who used to complain about his clothes getting dirty when he was working underneath the car. One of the men either Lee or his driver came up with the idea of stitching together a pair of trousers and a long sleeved shirt to form a denim overall. The Lee Union-All (a union of dungarees and long-sleeved work shirts) was born.

Designer Jeans

Designer jeans are marketed as fashion statements and status symbols. The Nakash brothers (Joe, Ralph and Avi Nakash) are generally credited with starting the trend when they launched their Jordache line of jeans in 1978. Designer jeans are cut for men and women, available in many sizes, and often worn skintight. They typically feature prominently designer names or

logos on the back pockets and on the right front coin pocket.

Within a few years of the Jordache launch, dozens of other brands were on the market. Among them are Sergio Valente, Sasson, Gloria Vanderbilt, Chic, Calvin Klein, Bonjour, and Guess?

Racy, suggestive advertisements promoted many of the brands. The first Jordache commercials, with their "You Have Got The Look" campaign. Other memorable television advertising campaigns of the time included Gloria Vanderbilt advertising her jeans as "A Million- Dollar Look", and Brooke Shields posing in a pair of Calvin Klein's and intoning, "know what comes between me and my Calvins? Nothing." In the late 1980s, designer jeans lost popularity. In the early 2000's, they again started coming back into fashion with brands such as Evisu, Seven for All Mankind, Chip and Pepper, True Religion, Rock N' Republic, and others, typically costing upwards of 200 USD. A few of the older brands namely Jordache, Sergio Valente and Calvin Klein, are also coming back with the designs that made them popular.

These jeans became fashion statements, with upcoming designers constantly offering newer versions in their own visions

New Looks and Trendy Fashions

French designers noticed that jeans were most loved, once they had been worn a few times, losing their new blue look. They tried to find out pre-age denim and tried a number of methods. Ultimately they found the solution in Italian pumice stone and as a result the denim got irregular faded patches and "stone washed" look was born!

Stone washed jeans became immensely popular throughout the 1980s and

other companies followed with their own versions. The Lee Company tried washing denim with various materials but finally they settled with pumice stone. The Lee Company was spending \$ 2 million a year buying rocks. When the company couldn't get the right material in the United States, they were importing them from various other sources.

For so called "acid-washed" effect, companies in Italy and the United States simultaneously developed a new method.

In the 1980s ripped jeans were in vogue. Marithe and Francois Girbaud were the first designers to intentionally tear their new denim, calling their pre-ripped trousers "destroyed jeans". An American company took a backlog of plain styles and started ripping them and the jeans sold out in no time.

There were jeans by Guess? a tight and sexy style with zippers at the ankles. Department stores were reluctant to stock them but when Bloomingdales was convinced to order 24 pairs, they were immediately sold out. By focusing on new styles and searching for the world's most seductive models, Guess? combined jeans with sex appeal and the company found that sexy ads sold more jeans.



By the decade 1990s there were myriad jeans variations-dark, baggy, tight, boot-cut, faded, beaded, bell-bottomed. There was a different pair for every one's taste and price. Gucci jeans with torn knees were sold out at \$ 3,715 a pair. Although teenagers couldn't shell out thousand of dollars, they became number one buyers of denim.

Epilogue

The fascinating story of denim and jeans is a tale rich in paradox. Cherished both by cowboys and high fashion models, the fabric is a symbol of counterculture. It is a universal fabric with a sex appeal.

The first jeans were mass-produced as work wear by Levi's, Lee and lot of other companies. Hollywood had a love affair with the jeans. After Second World War, denim spread throughout the world. Today, types of jeans range from everyday wear to highly fashionable, with a range of prices to match.

Moreover, denim can also be made into shorts, skorts (combination of skirts and shorts), dresses, skirts, bags, jackets, bats, and capris besides trousers.

Denim Time Line



1872: Jeans made a formal arrival in America

1920:

Chester Reynolds, a salesman, made the first Buddy Lee doll, the company mascot

2000s:

2001:

2003:

1993-1997: The first denim

boom in India

1994: Arvind launched New Port - This was

New Port - This was the first attempt made by anyone to launch a national brand at sub Rs. 400.00

1950s: Jeans became popular among teenagers and became symbolic of 2002: mild protests

- **1960s:** Wearing of blue jeans became more acceptable
- **1967:** The bell-bottom was introduced.
- Lt. 1960s: The American jean culture found its way into India
- 1970: Elio Fiorucci showed his designer jeans in Milan
- **1970s**: Jeans became a general fashion in the United States
- 1978: The First "designer jeans" came to US market
- 1980s: Stone-washed and acid-washed jeans became very fashionable. Denim and Sex became synonymous, when Brooke Shields declared that nothing comes between her and her Calvins

- 1980s & 1990s: Jeans are a wardrobe staple, average American owns 7 pairs of jeans. Many jeans companies moving to developing countries due to rising cost of labor. Designer's jeans lost popularity
- Early 1990: Japanese shoppers begin to see beauty in the flaws of old American jeans, suddenly earlier jeans are in hot demand. Baggy jeans in fashion
- 1990s: Saw the decline of the big brands and the rise of niche brands
- 1994:Levi Strauss & Co. at Paris auction offered a cardboard
cutout of a cowboy at about US \$ 75,000 at the time
- **1995:** The launch of Lee was a major milestone as far as the jeans industry in India was concerned. Lee brought to India a truly international look, newer fits, newer washes, newer fabrics and a new attitude.
- 1998-2000: The denim industry went through a huge churn. Internationally the consumer was tired of wearing the same blue and black jeans. There was hardly any innovation in terms of fabric, dyeing or fits. The consumer moved towards gabardines. Lee was the first to spot the change in trend and launched their line of casual trousers, Leesures. This was followed by Levi's who launched Dockers.

Levi Strauss & Co. opened a store in San Francisco where customers could get their body scanned by beam of light and then they design their ideal trousers etc. Pepe Jeans, the London based Jeans Company, launches its international collection in India, which is contemporary, attractive, innovative and truly international

After 2000, the denim industry went through a metamorphosis. Huge new denim capacities were built up worldwide. There was innovation in denim technology as well as product. Trousers are much less baggy, return of stone-washed and acid-washed styles. High fashion jeans feature hand distressing

Levi Strauss bought a pair of jeans at \$ 46,532 which was unearthed from a pile of miner's junk in 1998

American Eagle offered 'Customization Stations' where customers can use pumice stones, stencils etc. to individualize their purchases

Berlin advertising agency convinced prison and sells with the word'Haefting, 'which means inmate in German within a short period, the prison received 3000 orders. Ahad turned into a good thing when it is jeans



Denim Ever Youthful Fabric



massive expansion in the denim business is taking place. According to an industry estimate, the total denim production capacity in India is set to grow at about 65-70% to touch 500 million metres per annum by the end of 2006 from the current level of 200-250 million metres.

Ahmedabad, a mega city, where shopping malls and multiplexes are booming like never before is set to become the denim capital of the world. The mills in Ahmedabad are not only increasing production of the sturdy cotton fabric but are also entering garment manufacturing and washing. A major chunk of India's denim comes from two companies based in Ahmedabad, Arvind mills and Aarvee Denims and Exports, even though a number of firms have entered the business since the early 1990s.

Arvind Mills is the world's third largest denim producer, world's largest exporter of denim, and Asia's largest denim producer. The company's total capacity is 110 million metres per annum. Their denim is exported to more than 70 countries, besides catering to the Indian market.

Aarvee Denims & Exports: The company was set up in 1989. In the first year of operations, the company produced 3.5 million metres of denim fabric, which stands at 40 million metres today. The company has plans to raise this to 72 million metres by next year. Once the expansion is complete, it will make Aarvee the second largest denim maker in the country after Arvind mills of Ahmedabad. The company's 80% market is in the domestic sector while 20% of the produce is exported.

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Apart from Arvind and Aarvee, other players like Modern, Ashima, Nandan Exim, Soma textiles and Blue Blends are also involved in denim production in Ahmedabad.

Ahmedabad would be one of the major centers for denim manufacturing. A denim fabric cluster has come up primarily in the city due to good availability of cotton, which is the main raw material and availability of other inputs, like trained manpower and machinery.

Denim fabric produced in Ahmedabad are sold globally to famous brands like Levi's, GAP, A&F, VF Corp., Ralph Lauren Polo, NEXT, Pull & Bear, Esprit, Adidas, Nike and Marks & Spencer.

> TURNING JEANS INTO TURNING JEANS INTO OLD HARD (ASH OLD HARD (ASH Every Year, truckloads of jeans and other cotton dothing are recycled and turned cotton dothing are recycled and turned back into cotton fiber. This fiber is used back into cotton fiber. This fiber is used to create strong, flexible paper-the type

to create strong, the of money. It's used in the printing of money. It's stronger than paper made from wood fiber, and better able to withstand the fiber, and tear that money goes through wear and tear that money goes all wear and tear that money goes all wear and tear that money goes all to wallet to wallet.



ATCC (American Association of Textile Chemists and Colorists). AATCC is the world's largest technical and scientific society devoted to the advancement of textile chemistry. The objective of this R&D center is to achieve new developments and technologies in the textile and garment processing and finishing industries. Americos is committed to provide the latest technologies.

Our R & D center is innovatively designed and divided into two sections:

- 1. Chemical Synthesis Section
- 2. Application Section

Major activities in the Chemical Synthesis Section are:

- To develop different types of cost effective textile auxiliaries and speciality chemicals
- To develop novel colorants
- To develop new finishing agents
- To develop micro-encapsulated finishing agents
- Testing of industrial enzymes



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Major activities in the Application Section are:

- Development of customized finishes
- Testing of auxiliaries, specialty chemicals and finishes
- Physical and chemical testing of fabric and garment
- Analysis of fabric defects and suggestions to improve quality
- Guidance on stain removal and washing sequence used in finishing of garments
- Trials and troubleshooting for customers
- Provide consultancy to set up new garment processing and washing units.

Our State-of-the-Art R&D Center is supervised by well-qualified and experienced textile chemical technologists who share a wealth of information for textile and garment manufacturers and our customers.



SFX ()N DFINTM

an exclamation we hear from many of our customers worldwide when they see what stunning effects they could produce with our denim speciality chemicals.

we understand their excitement and promise ourselves to always maintain their same burst of joy every time by continually giving them custom-specific innovations on denim.

> to find out more, call the denim experts on +91-79-26447781/82 or write to us at info@kenencoregroup.com



VOL:I





DENIM CASE STUDIES





 $\star \star \star \star$ the van gogh revivalism the renaissance was always there

the engraver embellishment flower in the heart of indigo **** engrave a



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 $\star \star \star \star$ softly tinted fantasy effect get the touch & tint in just one go







discharge to stand out & command



wrinkled men tend to attract more ★ ★ ★ ★ matured to wrinkle





★ ★*Concept Driven Chemicals



he world is witnessing a surging demand in denim fabric. In this scenario, a special place is occupied by the denim fashion. The spread of denim culture, all over the world brought with it a trend of rapid changing fashions. The finish of this denim is the key parameter. The main part of the global production of denim garments that is around 800 million pairs of jeans on a yearly basis is passing through finishing laundries globally where they are given the desired fashionable looks.

After post quota, denim category is all set to become a prime driver of growth for Indian garment export basket. Denim garment processors are continuously challenged to maintain a market share in the fast growing and ever-evolving jeans market. Internationally, 2004-2005 is a year of low waist, heavy washes and vintage look denim. Another trend, which is fast picking up is for colored and tinted denim, especially for the European market. Two hot colors are steel grey and green.

Americos continually brings to customers the latest and hottest washes and finishes. Americos has also been able to provide innovative technology to customers due to their various international affiliations. Here, we summarize some of the effects, which we provide to our various national and international customers.



Super Sonic White (gives whiter white in seconds)



Sodium permanganate is more powerful oxidizing agent than potassium permanganate. Therefore, discharging effect produced by sodium permanganate is whiter than potassium permanganate. Adding viscosity builder further increases the whiteness. Americos Deni XL Solution and Americos Deni Modified Paste (viscosity builder) is mixed uniformly and applied on denim garment by spray/brush/screen method and kept for drying. Subsequently, it is neutralized with Americos Deni OX (neutralizer). It gives Snow-white discharge effect on applied portion.

2

The Van Gogh Revivalism (the renaissance was always there)

Garment wet processing is an excellent way of going on the fashion forward route. In order to be able to capitalize on the fashion cycle, proactive innovations through constant applications of R&D are necessary. In this context, Americos, a leading garment auxiliaries and textile specialty chemicals manufacturer introduced DPDF, direct fixing colors on denim. These are especially designed for denim garments. These colors can be applied directly as well as on discharge portions of blue denim garment. All color shades are brilliant. They do not require any curing equipment for fixing colors on garment as in the case of pigment



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spray on denim garment. Americos DPDF colors are ready-to-use products. DPDF colors are taken in spray gun and applied on denim garment and the garment is kept at room temperature for drying. Thereafter, the garment is dipped in a bath containing Americos Deni OX (neutralizer), Americos Washstore (booster) and Americos Fixer ST (fixer).

The denim garment wet processors can introduce a value addition in denim garment by using DPDF color spray. These colors do not require high temperature curing process; therefore, small and medium garment washing units can also use this technique without investing in a curing oven. This technique of color spray is inexpensive and affordable for most of denim garment processors. DPDF color spray techniques also save water, energy and time.

3

The Engraver Embellishment (engrave a flower in the heart of indigo)



Resist effect is used when indigo is to be retained on certain portion of garment only. Resist effect can be achieved in two ways:

- I Dry (Spray system)
- 2 Aqueous System (In Washing)

In dry system, resist chemical is applied on certain portion by spray/ brush/ screen method. Thereafter, discharging chemicals like potassium permanganate or sodium hypochlorite is sprayed on it. The indigo will remain intact at resist portion of garment. Americos Deni OX and Americos Ball Wash Resister are used in dry system.

The aqueous concept is used to retain indigo on certain portion of garment only leaving remaining portion light indigo. It is to be achieved by applying resist chemicals on denim, thereafter, garment is dried and cured at 15° C. Later, garments are treated with bleaching solution (sodium hypochlorite) or potassium permanganate solution in wash wheel. It provides resist effect at applied portion only and the remaining portion becomes light background of indigo. It gives a beautiful contrast between dark blue portion (resist portion) and light indigo background.

White Effect on Denim



Americos Denim White is a ready-to-use white pigment with various print auxiliaries. It gives excellent coverage on indigo ground. Americos Denim White gives snow whiteness with minimum harshness to denim fabric.

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Matured to Wrinkle (wrinkled men tend to attract more)



This concept is used to increase value addition of garment by creating wrinkle at the required portion of denim garment. In this process, Americos Wrinkle A-75 is applied by spray/brush on the garment, and then creases or folds are created manually. Then fabric is dried and cured at 15° C. The wrinkles that are formed on garment are permanent in nature and stable to multiple home launderings.



6

Scratch Look on Denim

Americos Scratch Chemical can help achieve scratchy look. In this, Americos Scratch Chemical is applied on denim by a very fine brush to create scratchy effect. Then fabric is dried and cured at 15°C. Thereafter, Americos Deni DPDF Supra color is sprayed on it. After room temperature drying, garment is treated with Americos Deni OX, Americos Deni Washstore and Americos Deni Fixer ST (color fixing agent). It gives an unique scratchy effect on the applied portion.



Wet Look on Denim



Visual appearance of Americos Wet Look treated garment is pursued as wet or as if water is sprinkled on garment. This effect is achieved by applying Americos Wet Look chemical on denim. Thereafter, garment is dried and cured at 15° C. Garment is then treated with light bleaching solution (sodium hypochlorite) in a wash wheel. This will give an unique wet look effect after bleaching.

8 Color Conspiracy: Part 3 (one evidence, three suspects)



India is famous for its vivid multi-colored textiles for centuries. One of the techniques of producing multicolors on textiles is known as tie and dye. Tie and dye fabrics are truly unique for producing beautiful designs on garment. With this in the background, Americos introduced its "Tri-Functional dye". "Americos Tri-Functional Colors" are specially designed for garment industry to get Cloudy Effect on garment. The Cloudy Effect achieved by "Tri-Functional Colors" resemble the tie and dye effect but it is different from tie and dye effect in the following two aspects

- In tri-functional color, first dyeing is done and, thereafter, tyeing but could be done vice versa.
- In tie and dye, getting more than two colors is laborious

In "Tri-functional" technique, garment is dyed with "Americos Tri-Functional Colors" in garment dyeing machine. Garment is tied with threads at different parts as per design to be formed on garment. Then, it is treated with light bleach liquor (sodium hypochlorite) and subsequently, with acetic acid. It opens unlimited doors for creative garment processors. Using this technology, garment processors can achieve Cloudy Effect of more than two colors from one Tri-functional color.

Ball Wash Protector

Ball Wash effect is currently very popular and high in demand. It involves surface application of sodium hypochlorite slurred with calcium carbonate powder. Thermocole balls are judiciously used as mechanical medium for restricting the action on surface part only. Changing diameter of balls, concentration of chemicals and time of treatment can vary the visual effect. Apart from these parameters, application of Americos Ball Wash Protector can create a lot of resist style pattern. Americos Ball Wash Protector can be sprayed/brushed/screen printed on denim garment to create a variety of designs.



Indigo Protector in Tinting / Over Dyeing

In this concept, denim fabric on certain portion is kept undyed / untinted and rest of garment is overdyed / tinted. It is be achieved by applying resist chemicals on denim. Thereafter, garment is dried and cured at 15° C. Garment is then dyed with Americos Dy-soft color, which has minimum affinity for indigo on dyed portion. It provides resist effect at applied portion only and remaining portion is overdyed / tinting takes place. It gives a beautiful contrast between dark indigo blue portion and tinted portion.



Softly Tinted Fantasy Effect (get the touch & tint in just one go)



Tinting is one type value addition in garment wet processing. Tinting is used to achieve the used and worn out look. This process is carried out after enzyme wash. If tinting and softening process is combined, it will save 2 washing cycles and save energy and water.

Keeping in mind the above concept, Americos introduces a compatible mixture of dyes and softener named as Americos Dy-Soft colors. Dy-Soft is a blend of color and softener. It is specially designed for garment industry to carry dyeing/tinting and softening process in one step. It imparts an unusually soft and supple hand to cotton, synthetic, and blended fabrics. It saves time, water and energy. Americos Dy-Soft is used for the wet processing of denim to achieve the used and worn-out look.

First, raise the temperature of drum washer containing denim garment up to 50° C and add Americos Dye booster in drum washer. Run the machine for five minutes at 50oC. Add Americos Dy-soft and run the machine for 5 min. Thereafter, add common salt and raise the temperature up to 75° C. Run the bath at 75° C for 10-15 minutes. Rinse the garment with water, hydro-extract and tumble dry

Americos Dy-soft:Temperature:Time:

2-4 % (on weight of garment) 75°C 10 min.



Shaded Fantasy Effect (life works in amazing gradations)



Sparkling effect is very popular in kid and ladies garment. Americos provides ready-to-use micro-emulsion of metallic sparkle. Americos supplies a range of shades starting from traditional gold and silver to latest fluorescent green and yellow.



Smart Colorants

Smart colorants are those, which respond to differences in temperature or light and environmental conditions. They are called smart because they sense conditions in their environment and respond to those conditions. Initially, smart colorants are developed for specialized applications like currency notes, security documents, etc. but now they are available for application on textiles/garments.

Smart Colorants can be classified into three categories:

<u>Thermochromic Colors</u> Fabric color changes with temperature

Low temperature Heated $(<31^{\circ}C)$



Color

Colorless

Under sunlight

Color appears

Photochromic Colors

Fabric color changes when exposed to UV light / sun light

Cooled

Normal View

Colorless

<u>Glow-in-the Dark Colors</u> Fabric color glows in dark Normal View



Colorless







Glow appears



Uses:

To create novel effects on garment and promotional items like T-shirts to print company logo / brand name to prevent duplication. Also to print for party wear.

....To be concluded.

11

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Trend - The Major Driving Force

for Silver Ion Antimicrobial Technology

Today's consumers are interested in clothing that are not only attractive to look at, pleasing to handle and fashionable, but the clothing that also coincide with their chosen attributes. One such attribute is "wellness." And in that the health and hygiene are in the forefront. Health and hygiene has been the fast emerging global trend and to be in harmony with this powerful lifestyle trend, the innovators have been in quest for better and better "well-being" chemical finishes. The antimicrobial finish (which is deodorant finish also) is the result of one such stretched imagination under physiological and emotional well being.

Americos Ties-up with Aglon Technologies for

V Unpleasant Consequences of Microbial Infestation

Some of the unpleasant consequences of the microbial infestation are generation of foul body odours, transmission of dermal diseases, skin infection and the worst, post-operative sepsis. The textile materials and clothing are carriers of pathogenic and odour generating bacteria and fungi. Textile materials are also good media for growth of microorganisms.

Textiles in hotels and hospitals may become responsible for the transmission of skin diseases and cross-infection. Bacteria and fungi are present nearly everywhere. In order to thrive they need moisture, nourishment and moderate temperature. When these conditions are met, microbes multiply rapidly. Bacterial populations can double every 20-30 minutes. This means one bacterium can become 8 million bacteria in 8 hours. Fungi grow comparatively slowly.

The ideal growth conditions for microorganism exists on human body and for this reason clothing are very prone to infestation by microbes. A consequence of excessive growth of microbes is the development of foul odour and mildew stains. Microorganisms convert human perspiration into foul smelling substances such as aldehydes, carboxylic acids and amines. Allergies are often provoked by microorganisms such as fungi or excretions of house dust mites. Tests have shown that textile materials and clothing cannot become hygienically fresh by washing alone. The solution lies in a permanent hygienic protection finish. Textile materials such as bed linen, towels, carpets, clothing of doctors and his crew, patient's gown, wipers, clothing of biological scientists, health care providers and military personnel, if made antimicrobial would help them immensely by the way of providing protection and controlling secondary infections, sepsis as well as the spread of infections. Control of body odour is the benefit to the wearer in general.

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Americos AgION Silver Antimicrobial Technology

Americos has tied-up with AgION technologies, USA to launch silver-based anti-microbial in India. AgION Technologies, is a leader in providing engineered anti-microbial solutions based on ionic silver that continuously inhibits the growth of bacteria, mold and fungus on a broad range of industrial, consumer and medical products. AgION silver-based antimicrobial is a patented technology that is very safe and durable upto 50 washes with deodorant characteristic having wide spectrum anti-microbial activities.

The customers of AgION are Du Pont, Carrier, Paper Mate, Adidas, Vycon, Doctors Reserch Group Inc., C-Line, Rockwood, Sommers, Saniguard, Everpure, Sar Guard, Preventa, Ensinger, Smalley, Cart TV, Vista, Neoperl, Long Stanton, Fuller, Specialty Filments Inc.Austin House, Fosshield, Bio-Guard, Johns Manville, Scotsman, Motorola, Ice-o-Matic, AKSteel, Honeywell, Lindab, Lyon, Monroe, L & R Ultrasonics, Epco, Hager, Starensier, Cosmetal, Viessmann, Shuttleworth, G-U-M and Colorcon.



<u>Unique Features of AgION</u> <u>Silver Antimicrobial Technology:</u>

Wide Spectrum Antimicrobial Efficacy

Silver antimicrobial imparts bactericidal properties to cotton, wool and synthetic textiles against gram-positive and gram-negative bacteria as a well as wide array of fungal organisms. Measurable results are seen within two hours and 99.99 percent reduction in twenty-four hours.



Americos Ties-up with Aglon Technologies for for Silver Ion Antimicrobial Technology

Durability

Silver antimicrobial is very durable and lasts the life of textile material. The controlled release of silver ion makes it possible to achieve the required level of efficacy at low concentrations and long lasting efficacy.

3 Unique Mechanism of Action

The key functional element in silver antimicrobial is silver (Ag) Ion, which gets, released on demand only and hence has long effective life.

This breakthrough technology combines silver ions (or in combination with zinc or copper to meet specific application challenges) with a patented delivery process. The multifaceted zeolite crystal carrier provides a three-dimensional release mechanism (fig. 1). In conditions that support bacterial growth, the sodium ions in ambient-moisture exchange with silver ions at reversible bonding sites on the zeolite (fig. 2). The exchanged silver ions are now available to control microbial growth. The silver ions (1) inhibit transport functions (respiration) in the cell wall (2) Inhibit cell division (reproduction) and (3) Interrupt cell energy generation (mechanism). This tri-modal efficacy reduces the possibility of developing resistant bacteria.



Silver antimicrobial is 100 percent safe. Thorough testing has shown silver antimicrobial to be less toxic than table salt and less irritating than talcum powder.

Silver antimicrobial enjoys broad regulatory approvals. Silver antimicrobial is NSF- and FDA-listed, as well as EPA-registered. Silver antimicrobial is also listed with the Cosmetic, Toiletry and Fragrance Association as a cosmetic preservative and has the standard provisional approval in Europe under the Biocidal Products Directive (BPD)

5 Versatility

silver antimicrobial offers great versatility of application and is truly multifunctional.

Utilization of Americos AgION Silver Ion Antimicrobial Technology

<u>Neutralization of Body Odour</u>

Silver antimicrobial is very effective against proteus vulgaris bacterium responsible for body odours. They produce enzyme urease, which decompose urea into ammonia. Considerably reduced foot odour is experienced when socks (also shoe liner fabric) knitted from silver antimicrobial treated filament/fiber are used.

• <u>Combating Musty-Mildewy Odour in Towels</u>

It is a normal experience that towels develop a musty-mildewy odour, if left damp or in humid environment such as bathroom. In majority of cases, these odours are generated by the action of fungi (and bacteria). Silver antimicrobial treated towel stays fresh.

• <u>Moisture Wicking, Thermal Adaptability</u>, Neutralization of Static

By virtue of thermally conductive silver in the treated substrate, the silver antimicrobial treated fabric/garment would conduct the heat away from the body. This conductivity of silver also helps accelerate evaporation of perspiration and facilitate transport of perspiration away from the body, creating wear-comfort in addition to greatly reducing a possibility of dermatitis, bacterial irritation and odour.

Application on Textile Substrates

(A) Antimicrobials / Filaments / Fibres

Inherently antimicrobial fibers (filaments) can be produced by incorporating silver antimicrobial in the polymer during the extrusion of the filament. silver antimicrobial then resides in the interior of the filament/fiber and migrates to the surface on demand through the amorphous zones of the polymer. Fabrics manufactured from such antimicrobial filament/fiber play an important role in personal hygiene. silver antimicrobial can also be compounded into bulk polymers, fibers, variety of coatings, paints and lacquers.

(B) Application on Fabric/Garments

Americos AgION Silver Antimicrobial can be applied on fabric by padding method :

Recipe : Americos AgION Silver Antimicrobial : 30-40 g/l.

Pad, dry & cure at 150°C for 2-3 minutes. Americos AgION Silver Antimicrobial can be incorporated in general finishing recipes like softeners, wrinkle-free finishes, oil and water repellent finish and flame retardant finish.

Discover Live Wire Americos Virtual Clinic



s Industries Mind

Discover Live Wire–Americos Virtual Clinic

he cyber world is advancing at dizzying pace. Therefore, in this fast changing scenario, time is a premium commodity. Sensing the pulse of the textile industry, Americos with its superb infrastructure including R&D Center, Information Center, and qualified and experienced human capital, has launched online service viz, "LIVE WIRE Virtual Clinic" on its

website : <u>www.kenencoregroup.com</u>

This online Virtual Clinic is at the service of the textile processing and finishing industries worldwide. And it will provide technical solution encompassing all wet processes—desizing through finishing.

Fabric specialists, garment washing laundries, textile processing units, and technologists can take advantage of this unique online service. The industry gets technical troubleshooting, know-how of Americos products, customized product solutions, commercialization of products and solution to basic problems in wet processing.

> This service is offered by our in-house team of well-known technical experts and is rendered in a 24 X 7 mode.

> > Discover new and rapid way of getting solutions right at your desk.



Either learn or leave.

- Latin proverb



Ball blasting is one of the best processes to achieve a novelty effect. It gives a certain fashion look, which is high in demand. It is nothing but discoloration of denim and other garments with different proportion. It is an application of sodium hypochlorite slurries with calcium chloride powder. Thermocol balls are used for mechanical abrasion on surface of the garment.

The effect produced on the garment depends on the following factors:

I. Size of Thermocol Balls

Ball Blast

- 2. Concentration of Chemicals
- 3. Time
- 4. Temperature
- 5. Design of Cylinder and its RPM
- 6. Type of Dye Used



Size of Thermocol Balls

The thermocol balls are available in diameters of 0.25cm to 5 cm. To produce overall uniform effect, smaller size balls are preferred. Medium size or large size balls are used to achieve an uneven fading look on garment. It is necessary to avoid a cracked or broken ball, as it will absorb more bleach and shall result in spots or develop patches on the garment. Generally, half the quantity of volume should be filled with thermocol balls.

2

The Concentration of Chemicals

For reproducibility of results, the concentration of sodium hypochlorite should be uniform. Generally, the concentration of industrial grade sodium hypochlorite is 40-100 g/l. of available chlorine. The variation in concentration of different lot can affect result of ball blast effect. It is must to check chlorine content of every bleach supplier to rule out any inconsistency. The micro-fine calcium carbonate should be used.



Generally, ball blast treatment is carried out in 30-60 minutes. Longer the ball blasts treatment, higher the fading. It is also observed that most of bleach is utilized in first 30-45 minutes of process. Further, increase in time does not increase the fading look substantially. It is always advisable to optimize time with dosage.

4 Ambient Temperature

The main chemical of ball blast process is sodium hypochlorite. It liberates chlorine, which discharges the indigo due to its oxidizing effect. The liberation of chlorine depends on temperature. In summer season, activity of sodium hypochlorite is more compared to winter season. Many times continuous use of liquid hypochlorite creates the humid atmosphere inside the cylinder. Putting high-watt bulb, which removes humidity inside the drum, can solve this problem.

5

Design of Cylinder and its RPM

Generally, the ball blast treatment is carried out in wooden drum rotating at 35-40 rpm. with 20 each in clockwise and anti-clock wise direction. Machine should have smooth surface from inside so as the pieces should slip well inside. In case, if machine is new, follow blind process by using dead load of garments to remove rough edges of machine. The machine should not be overloaded. Hence, it would slow down its RPM.

Type of Dye Used

Sulfur dyes will give white tone and reactive gives reddish tone after ball wash/bleach. Dyes act differently to bleach. Generally, sulfur dyes are used in overdyeing for ball blast effect. Sulfur dyes give good contrast with brightness. Americos Tri-functional colors give two-tone effect in ball wash treatment.



Ball Blast Effect



A Typical Ball Blast Process

Denim garment or trousers are first desized, followed by bio-polishing or bio-fading or over-dyeing, then softening to make garment ready for blasting. Initially 5-6 kg of thermocol balls, 2-3 liter of sodium hypochlorite bleach 100 g/l. available chlorine and 2 kg of calcium carbonate are mixed and the machine is run for 5 minutes so it forms a uniform chlorinating slurry on surface of thermocol ball. Thirty to forty garments are introduced in machine and is run from 30-40 minutes at room temperature. Finally, treated garments are washed and neutralized with hydrogen peroxide. To improve a contrast and brightness, bio-polishing treatment can be performed.



Ball Blast Effect on Tri-functional Colored Goods

Americos Tri-functional colors are used in dyeing instead of sulfur dyes before ball blasting. It gives similar brightness and contrast look to sulfur dyes. Compared to sulfur dyes, the application of Tri-functional color is easy and less time consuming. Generally, 2-4 percent shade is preferred for ball blasting.



APPLICATION

Prepare a dye solution by dissolving required amount of trifunctional dye in cold water. Introduce this dye solution into the machine and run for five minutes at room temperature, add (50 g/l) common salt and slowly raise the temperature up to 60 to 70° C and run the machine for 30 minutes. Add (20 g/l) soda ash at this temperature and continue dyeing for further 20 minutes. Drain, and give one cold wash, followed by dye fixing treatment. After drying, treat the garments in ball wash machine in usual way. It produces more attractive look after ball blasting in comparison to sulfur dye.

CONCLUSION

Though, basic look of denim has come back in current fashion trends, the demand for ball wash seems to be never ending.



16



Amazing Innovations





The memory shirt recovers its pre-programmed shape as a result of a 20-microndiameter thread made of nickel and titanium woven into the cloth. It brings back the shirts original shape when heated with a hair dryer or worn in hot weather.

The 'Hug Shirt'



F+R Hugs is a soft Lycra shirt with embedded sensors and electronics that allows the wearer to feel the physical closeness of someone else over a mobile phone network. The shirts receive the input of heart beat, touch, and body temperature of the remote loved one, recreating (through actuators embedded in the shirt) over distance, the pulsation, physical pressure and warmth of a real hug.

Wearable Glucose Monitor

Calisto Medical has obtained positive results in a pre-clinical trial of the prototype glucose monitor Glucoband. The device is based on the company's proprietary technology called B-Electric Impedance Spectroscopy. A wristwatch like Glucoband, with fully integrated LCD screen, electronic circuits, integrated electrodes, battery and adjustable wrist bands, is placed on the person's wrist. The initial measurement process takes only a few minutes, however, in the monitoring mode, measurements can be continuous and only the frequency of the measurement must be determined.

Nanocoatings NanoTex



The principles of nanotechnology are utilized in NanoTex coatings to create unprecedented performance in textiles in respect of stain repellency, durability, and other attributes.

Working on the nano-scale and permanently attaching to the fibers, NanoTex chemistry provides greater durability than repellent coatings, while allowing the fabric to remain soft and breathable. The polymers either attach to or wrap around the fibers.

> Source: Future Materials, Issue-6, 2004 Source: Future Materials, Issue-4, 2005

Holofiber



Hologenix is billed as the world's first body-responsive textile fiber, scientifically proven to significantly increase oxygenated blood flow, which can increase

circulation and build strength. It is said to modify the spectrum of visible and invisible light, interacting with certain wavelengths, and altering them into energy. When Holofiber is worn as clothing, or placed near a person (in a bed sheet or pillow case, for example) it transmits the altered energy to the body. For diabetics, this improvement in skin oxygenation can accelerate wound healing and help eliminate pain due to decreased blood flow. This energy sent to the body, helps the body's cells to be better oxygenated. Holofiber absorbs the light energy, altering it and reemitting it immediately but also over a period of time, which means it does not have to be subject to a continuous exposure of light in order to function effectively.

17



Americos Ties up with Chromatic Technologies Inc. for Smart Colorants

In order to give innovative products to our customers, Americos has partnered with Chromatic Technologies Inc. (CTI Inks), USA, which is a global leader in developing and manufacturing special effect inks, coatings and materials for a variety of commercial security applications. CTI's smart colorants being exported to around 60 countries globally, can be used to create novel effects on promotional items, logos, security printing and garments.

Smart colorants are those, which respond to differences in temperature or light and environmental conditions. They are called smart because they sense conditions in their environment and respond to those conditions. Initially, smart colorants are developed for specialized applications like currency notes, security documents, etc. but now they are available for applications on textiles/garments.

Smart colorants can be classified into three categories:



Latin proverb



Color is a matter of perception and subjective interpretation. The factors that influence color are:

- Source of light (sunlight, fluorescent light, incandescent light)
- Directional differences (the angle from which the object is viewed and the angle from which it is illuminated)
- Background and contrast
- Area covered by a color
- Observer per se

The color expression is a mixture of such attributes as hue (red, yellow, blue, green...) brightness, darkness, lightness and dullness.

An object absorbs part of the light from the light source and reflects the remaining light. This reflected light enters the human eye, which stimulates the retina of the eye. This stimulation is transmitted to the brain. The brain recognizes the color. The brain perceives specific wavelength as color. Each object absorbs and reflects light from different portions of the spectrum and in different amounts. This difference in absorptance and reflectance make the color look different.

Even for the similar objects, variances may be seen in colors due to differences in the gloss of the surfaces. For instance, a shiny highgloss blue looks dull blue when fine sand paper is gently rubbed and surface is made rough. For shiny surfaces, the reflected light is relatively strong and diffused light is weaker. On rough surfaces (low gloss surfaces) the reflected light is weak and the diffused light is stronger. Refractive Index is yet another factor to be considered.

Textile Finishing

Finishing is the last step in the textile wet-processing chain and is obviously performed on dyed/printed textile materials. The finishing recipe is designed to meet with what is expected of the finishing treatment and may contain one or more chemical products. The finishing agents after textile application and depending upon their characteristics would leave a film or deposits on the dyed/printed substrate. The observation has been that some finishing agents (their film or deposits) display dulling effect. This dulling or delustering effect could be the result of aimed at development or just a side effect. Certain anti-slipping finishing agents, though their primary function is to reduce the magnitude of yarn slippage in fabric, show delustering or side effect. On the other hand, there are finishing agents, which have been found to have Color Deepening Effect. This could be the result of product (finishing agent) designing or a side effect, which can be positively interpreted as "dye-saver" or "shade enhancement" development. This color deepening influence is seen in case of silicone finishing of textile materials. Silicones have primary function of imparting a rich tactile feel. However, a small change in luster can yield dramatic difference in overall appearance. This in terms of development or observation is very useful, alternatively a bonus.

Color Deepening Effect

There is a limitation of dyeing system in very dark shade like zade black, maroon, navy, etc. that above certain concentration, if we increase the dye's concentration, there is no increment in depth of shade like sulfur black; after using 8-10% dyes (owm), there is no increase in depth of a shade. In this dark shade, the difference is visualized when different black fabrics are compared each other at retail store and the customer's choice is always deep black or zade



black. Americos developed a finishing chemicals "Hi-tech 2000" which increases the depth of shade on polyester, polyester / cotton, nylon, polyester/ viscose and cotton. It does not decrease the light and rubbing fastness of fabric. The depth of treated fabric remain unchanged even after multiple home launderings.

Americos "Hi-tech 2000" can be applied on fabric by padding method or dip method. For polyester and blended fabric, padding with 10-20 g/l and dried at $150^{\circ}\text{C}-180^{\circ}\text{C}$ for 20-30 sec. gives excellent results.





Americos participated at Texindia Fair 2005. It was held during 18th-20th November, 2005 at Tirupur. It was organized by a leading textile processing magazine Colourage. For the first time Colourage brought under one roof, leading dyestuff and chemical suppliers. For one to one interaction between buyers and suppliers, they were brought under one umbrella. A conference was also organized to address the processing problems related to environment, interaction with leading global retail brands and their expectations of Indian textile industries, insight into typical processing failures and its repercussions on exports.

In this exhibition, Americos displayed a lot of value additions in garments. This includes discharge effect, color effect, sparkling effect, color enhancing effect, color resist effect, thermochromic color, photochromic color, glow in the dark and plastisol inks. Americos also displayed trifunctional color (cloudy effect) in which one can get more than three colors effect from dyeing and discharge of one color. Americos also displayed a variety of finishes on knit fabrics. These include leather finish, rubbery finish, wet finish, rabbit finish, papery finish, silky finish and many more.



Americos displayed a galaxy of functional finishes at Garment Technology Expo during 20th-23rd January, 2006 held in Okhla, New Delhi. This includes flame retardant, stain repellent, silver-based antimicrobial, color deepening system, color manipulator, moisture management and wrinkle-free finish. Apart from these mind boggling finishes, the company displayed a wide range of futuristic denim fashion effects like vintage look, burnt and scratch effect, leather and rubbery finish, paper and wet look, cloudy and glass effect, metallic and pearl effect, color changing effects and many more.

In continuation with its product display, Americos has launched a unique softener for softness for comfort and hygiene. Due to these characteristics, it allows transpotation of perspiration to outer surface for natural evaporation. Thereby keeping body dry for best comfort. This finish also provides a deodorant effect.



Bangalore

Garment Technology Expo'06, Bangalore - India. 16 to 18 June 2006

The Trade Centre [KTPO Exhibition Centre], Export Promotion Zone, Whitefield, Bangalore







Knowledge Mosaic



Sub-fields of Biotechnology

Red biotechnology is a biotechnology applied to medical processes. An example would include an organism designed to produce an antibiotic, or engineering genetic cures to diseases through genomic manipulation.

White biotechnology, also known as grey biotechnology, is biotechnology applied to industrial processes. An example would include an organism designed to produce a useful chemical. White biotechnology tends to consume less resources that traditional processes when used to produce industrial goods.

Green biotechnology is biotechnology applied to agricultural processes. An example would include an organism designed to grow under specific environmental conditions or in the presence (or absence) of certain agricultural chemicals. Green biotechnology tends to produce more environmentally friendly solutions than traditional industrial agriculture. An example of this would include a plant engineered to express a pesticide, thereby eliminating the need for external application of pesticides.

The term **Blue Bio-Technology** has also been used to describe the marine and aquatic applications of biotechnology, but its use is relatively rare.

Bio-Informatics is an interdisciplinary field that addresses biological problems using computational techniques. The field is also often referred to as Computational Biology. It plays a key role in various areas like functional genomics, structural genomics, and proteomics amongst others that forms a key component in biotechnology and pharmaceutical sector.





Chronology of Biotechnology

- 8000 BC Collecting of seeds for replanting. Evidence that Babylonians, Egyptians and Romans used selective breeding (artificial selection) practices to improve livestock.
- 6000 BC Brewing beer, fermenting wine, baking bread with help of yeast
- 4000 BC Chinese made yogurt and cheese with lactic-acid producing bacteria
- 1500 Plant collecting around the world
- 1675 Microorganisms discovered (using first microscope)
- 1856Gregor Mendel discovered the laws of inheritance
- 1919 Karl Ereky, a Hungarian engineer, first used the word biotechnology
- 1953James D. Watson and Francis Crick describe the structure
of DNA
- 1975 Method for producing monoclonal antibody developed by Kohler and Milstein
- 1980 Modern biotech is characterized by recombinant DNA technology. The prokaryote model, E. coli, is used to produce insulin and other medicine, in human form. (About 5% of diabetics are allergic to animal insulin available before)
- 1992 FDA approves of the first GM food from Calgene: "Flavr Savr" tomato
- 1999Biotechnology program started at North Montgomery
County Technical Career Center in Pennsylvania.
- 2000 Completion of the Human Genome Project

- Cicero



- 1. The Hindustan Landmaster was initially known as...
- 2. "Intelligence Everywhere" is the punch line of...
- 3. The full form of ZEN (as used in Maruti Zen) is...
- 4. The word used for foods such as spaghetti, macaroni and ravioli...
- 5. The meaning of Beijing, (capital of China) is...
- 6. The meaning of tulip (as in tulip flower) is...
- 7. The first person to reach the South Pole was...
- 8. Expanded acronym for SEWA is...
- 9. In Latin, Australia means...
- 10. Howrah Bridge is now known as...
 - 10. Rabindra Setu
 - 9. Southern
 - 8. Self-employed womens' Association
 - nəsbnumA.A bəman naigəwioNA .7
 - 0. Turban
 - 5. Northern Capital
 - 4. Pasta
 - 3. Zero Engine Noise
 - 2. Motorola
 - Ambassador Car

VISWERS

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- Ellen Glasgow



PLENTIFUL PANTS

Levi Strauss & Co. is one of the world's largest clothing companies and has sold more than 3.5 billion pairs of jeans around the world, and under all these pants up of you lined all these pants up of you lined all these pants up lengthwise, they would stretch lengthwise, they would stretch to the moon and back seven times

22



OW TO CREATE UNCONTESTED MARKET SPACE AND MAKE THE COMPETITION IRRELEVANT

The author W.Chan Kim and Renee Mauborgne use the "Blue Ocean" metaphor to summarize their vision about competition. Unlike "Red ocean" which is crowded with competitors "Blue Ocean" represent unexplored market space and the opportunity for highly profitable growth. The only reason big companies don't go for them, they indicate, is that "the dominant focus of strategy work over past decades has been on competition based Red ocean strategy i.e. finding ways to reduce costs and increase revenue by taking away market share from the competition." The author has used number of examples from various industries. One of the examples is that of Circue du Soleil. It was founded in Canada in 1984 by a group of street performers. Circue has performed number of performances in 90 cities around the world. In 20 Years, Cirque has achieved income that Ringling Bros. and Baznum & Bailey, the world's leading circus took more than a century to attain.

How did Cirque increase income by a factor of 22? Cirque did not make money by competing within the confines of the existing industry or by stealing customers from its competitors. Instead it created uncontested market space that made the competition irrelevant.

They urge companies to "value innovations" that focus is on utility, price and cost positions, to create and capture new demand and to focus on the big picture, not the numbers. It is not the typical business management book's vague call to action; it is a precise actionable plan for changing the way companies do business with one resounding piece of advice, swing for open waters.

In conclusion, Blue Ocean strategy present a systematic approach to making the competition irrelevant and outlines principles and tools which companies can use to create and capture blue oceans. This is a landmark book that challenges our thinking about strategy. This book charts a bold new path to winning the future.

BLUE OCEAN STRATEGY

How to Create Uncontested Market Space and Make the Competition Innievant

W. Chan Kim Renée Mauborgne

W.Chan Kim is Professor of Strategy and International Management at INSEAD. Renee Mauborgne is a distinguished fellow and Professor of Strategy and Management.

The book is published by Harvard Business School Press Year of publication: 2000



Success is often the result of taking a miss-step in the right direction.

Al Bernstein



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Designation:			Telephone:				
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