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SELF-ADHESIVE TAPES

Henkel
A Brand like a Friend

certoplast

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PolymerLatex

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ROHM AND HAAS

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chemicals and polymers spa

STOKVIS TAPES

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50 Afera 1958 - 2008

TAPE AN EXCURSION THROUGH THE WORLD OF ADHESIVE TAPES

50 Afera

TAPE

AN EXCURSION THROUGH THE WORLD OF ADHESIVE TAPES

made with artists, designers, journalists and Afera

Die Gestalten Verlag, Berlin

by Kerstin Finger — Kekiretta.net

50 Afera 1958 - 2008

The Heart of the European Self Adhesive Tape Industry

Tape
An Excursion Through The World Of Adhesive Tapes

By Kerstin Finger — www.kekiretta.net
Edited by Robert Klanten, Mika Mischler and Sven Ehmann
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AFERA
CHAPTER

AFERA'S GOLDEN ANNIVERSARY

Every anniversary holds some sort of special meaning in our society. More than others, the 50-year benchmark is associated with a number of notions, such as experience, maturity, wisdom, perceptiveness…. In the private sphere, for example, you celebrate your golden wedding anniversary after having been married to the same person for 50 years. This accomplishment implies blooming health, vigour, intellectual prime, composure, consistency and most importantly, the ability to create new projects. Ultimately I am also defining the essence of our Association, Afera.

When browsing through this publication which we have created to mark our 50th anniversary, the first thoughts that come to my mind are of the efforts we have made to bring product solutions to the market, applications which make industrial and professional activities more feasible, practical and profitable. These efforts reflect our underlying raison d'être. But what this special publication also reveals is that with the hands and intelligence of an artist, we can also make a significant contribution to the field of the arts. Any activity that dignifies our very existence – and that is the substance of the arts – must also energise and influence the creative skills in other areas, such as the professional sphere.

Needless to say, our commitments and responsibilities are directly related to the business world, as it cannot be otherwise. But events such as Afera's 50th anniversary, in which we are lucky to take part and which enables us to associate our business activities with the arts, are a source of inspiration for both our Association as a whole and its individual Member companies and organisations. They make us more imaginative, efficient and co-operative. I simply do not believe in limits; breaking through them is all a matter of will. And if there is a will, there is a way.

In business, I often repeat one of my favourite mottos: If you do not grow, you die. I am utterly convinced that Afera is still a young association. After all, it is only fifty years old and it's in full swing.

With my best wishes,
Joaquim Puig, Afera President

AFERA TURNS 50

The publication of this special edition celebrating Afera's diversity of activities and experiences is the perfect manner in which to mark a half century of serving the European self adhesive tape industry. The first 50 years have proved to be eventful and prosperous for both Afera and the tape industry. We gain unique insights into these years through the points of view of six different captains of industry in interviews with veteran tape industry professionals published among other articles in the pages following.
It has been an honour to be involved in the everyday workings of Afera since 1998 through Lejeune Association Management. When I first became acquainted with the Association, I saw a body representing an industry of endless potential, a membership of companies and organisations with incomparable knowledge and experience to share, and tape industry creative minds and decision-makers eager to build on the communications platform budding in Afera.

Since then, Afera has launched itself into a new generation of trade industry representation. As the beating heart of European tape industry expertise, Afera now offers the latest on tape developments through its Annual Conference, Technical Seminar and Tape College; an extensive network of industry players, including member companies, national trade associations, international counterpart organisations and other European and global bodies; communication of relevant information through its biannual magazine Afera News, digital newsletter, afera.com, press releases and other mediums; focused committees and working groups addressing important market and regulatory issues and research, such as the Inter-Industry REACH Project and Afera's latest European tape survey; and full-time logistical support from our head office in The Hague, the Netherlands.

Not only does it promote the broad interests of the European self adhesive tape industry, Afera represents and actively challenges the scope of possibilities of the industry and market. This driving force will certainly take it into the next generation of adhesive tape production.

Congratulations, and here's to another 50!
Astrid Lejeune
Afera Secretary-General

AFERA'S ROLE IN THE EUROPEAN SELF ADHESIVE TAPE INDUSTRY

Afera, the European Association for the Self Adhesive Tape Industry, aims to satisfy the need of the self adhesive tape industry for an organised, collaborative platform on which to facilitate contact, to share information (without compromising fair competition), to increase the profile of tape products and the tape business in general, to achieve effective representation as a body in public affairs initiatives, and to promote the development of and adherence to European and international standards. In essence, Afera strives to act as the voice of the self adhesive tape industry.

Afera's Origins

Established in 1958 in Paris, Afera began as a technical association with the purpose of creating industry-wide test methods. With 35 tape manufacturers from six European countries as its original Members, the Association made one of its first objectives to harmonise the standards and norms of each European country's tape industry.

Early Activity

One of Afera's first recorded meetings was conducted by the 'Normalisation Committee', taking place on 5 November 1958. The minutes of this second meeting of the Committee reflected the objectives of the group:

> This Committee should endeavour, based on the texts in use in the Establishments of the members of Afera, and particularly based on those texts which in each country have an official status, to merge into a common norm, and to endeavour to harmonise as far as possible, the particular characteristics of each one.
>
> Only in cases where there are no such texts, the Committee will endeavour to work out norms, with the aid of the various non-European documentations, or by reference to original work. It is understood that this does not exclude, in the first case, consultation of non-European norms, to which reference may be made whenever they provide original elements or permit an impasse to be overcome.
>
> It is for that reason that the American norms as well as the various European norms have been included in the documentation collected by the Secretariat with regard to each norm.
>
> A detailed examination was then carried out of the objections submitted to the Secretariat by the various members, with regard to the two first provisional norms proposed at the beginning of the preceding meeting, ….

The first meeting of the Steering Committee, then referred to as the 'Management Committee', took place on 22 April 1959 in London. Here they approved the entry of two new Members, presented a financial report and established that a General Meeting must be held at least once a year; the Management Committee meetings twice a year. The first General Meeting was planned to be held in Paris in September 1959. Membership fees were fixed at 100 U.S. dollars per Member, payable in French francs, which would be equivalent to 175 euros today. It was also decided that a document would be drawn up summarising the decisions taken in the Normalisation and Standardisation Committees, and that each manufacturer within the Association would take responsibility for informing their customers of these decisions.

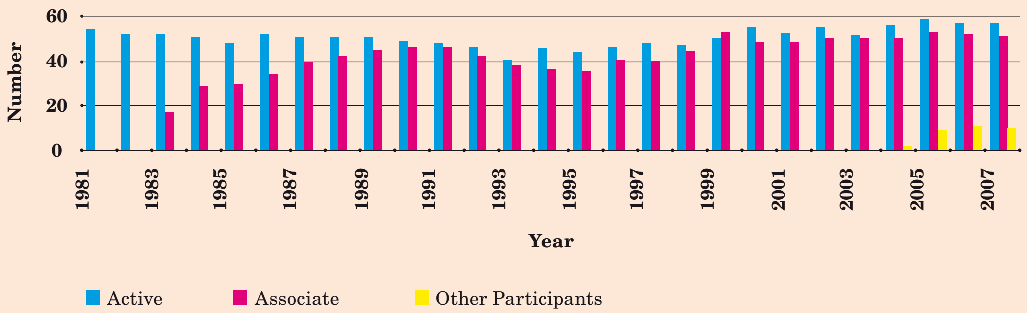
The second meeting of the Management Committee took place on 27 October 1959 in Paris. During this event, a small 'Propaganda Commission' was proposed with the aim of acquainting clientele with the aims and results of Afera's activities. During the subsequent General Meeting, a Propaganda Commission consisting of seven Members was put forward. This consisted of a Member of the Management Committee who would act as President and a representative of each of the four national groups within the Association (Germany, France, the U.K. and Italy) and two representatives of 'Other Countries' (which would later become Eastern Europe). The first proposal to admit 'Associate Members' (mainly national associations of European manufacturers) and 'Corresponding Members' (mainly groups of manufacturers established outside of Europe) to Afera was also made at this meeting.

The third set of management meetings of the Association took place on 28 April 1960 in Düsseldorf. The Normalisation and Standardisation Committees submitted reports to the Management Committee, and the Propaganda Commission presented its first report. A publicity programme and budget were presented and unanimously approved by the Management Committee.

The publicity commission was charged with drafting a list of European producers of self-adhesive tapes; listing the importers and their principal agents and the transformers; developing an Afera handbook with a description of the aims of Afera, dictionary of technical terms and decisions taken during the General Meetings regarding the proposals of the Normalisation Committee; making a synopsis of the handbook for the use of customers; making a more condensed synopsis which would be a PR-worthy publication listing which self-adhesive tapes had been

Historic Membership Data

Active & Associate Members of Afera since 1981
Other Participants since 2003



standardised and normalised by Afera and its Members; establishing a centre for collecting European production statistics and news about innovations in the self-adhesive tape market, and formulating provisions for their own needs by Members (the latter collection of production statistics was replaced with Afera's biennial European Specialty Tape Market & End-User Survey in 2003); and using the technical and specialised press for the broadcasting of the notion 'think adhesive' and for informing the public on Afera's aims and activities. Admitting Associate and Corresponding Members was once again discussed and postponed to a later date. The first mention of possible collaboration with Afera's American counterpart, the PSTC, was made.

Membership Today
Currently Afera consists of over 120 Members from 17 European countries, Taiwan, Mexico and the U.S. Based in The Hague since 1998, the Association is open for membership to those involved in the European self adhesive tape industry such as manufacturers, suppliers and national tape organisations. Active Members include manufacturers of self adhesive tape with coating facilities within Europe and their non-coating European subsidiaries. Associated Members include suppliers to the tape industry and other organisations linked to Afera's mission. Affiliated Members include European national associations and groups, institutions and universities with objectives meeting Afera's purpose. In 2003, Afera achieved its goal of incorporating all entities within the tape industry value chain by creating a special 'other participants' Membership category for other groups in the tape family, namely converters. Now converters such as printers, slitters, die cutters and laminators of self adhesive tape, to name a few, can participate in the Association's activities and make use of its many resources.
Afera's mission is carried out by a Steering Committee, headed by the President of the Association, and supported by two additional bodies, the Marketing and Technical Committees. Full-time logistical support is provided by Afera's Secretariat which resides at Afera's head office in The Hague under the management of Lejeune Association Management.

Milestones

1958 Afera was established in Paris with 35 Members from six European countries

1982 The General Assembly approved the addition of raw materials and equipment suppliers, then called 'Honorary Members'

1996 The Technical Committee began co-ordinating with the PSTC and later JATMA on the harmonisation of key test methods

1998 Afera moved its Secretariat to The Hague, the Netherlands, where full-time management and logistical support is provided by Lejeune Association Management
Afera began a programme of deeper co-operation with counter-part associations and other pertinent industry bodies at national and international levels

2002 Afera hosted its 1st Technical Seminar in Brussels in April
Afera launched its new and improved website at afera.com
Afera began sending email flashes containing information on breaking news and events
Afera began monitoring and participating in EU legislative process regarding the
Integrated Pollution Prevention and Control (IPPC) Directive

2003 Afera issued the first edition of the biennial European Specialty Tape Market & End-User Survey in June
Afera began monitoring and participating in the EU environmental legislative process for creating a European Chemicals Policy (REACH), including lobbying through CheMI
The Association created a specific Membership category for "other participants" in Afera's activities and the use of its resources, including converters (printers, slitters, die cutters and laminators of self adhesive tape)
Afera first organised and participated in Round Robin Testing

2004 The first 4 globally harmonised test methods were published by Afera and the PSTC
Another edition of the Afera Test Methods Manual was published
Afera held its 1st Tape College, alongside its 2nd Technical Seminar, in Brussels in March

2004 Afera began collaborating with the prestigious Fraunhofer Institute, famous for its regular adhesive courses
Afera's Steering Committee presented a new Strategy Proposal for 2005 – 2008
Afera conducted its first Membership Satisfaction Survey
Afera produced its first glossy image brochure

2005 Afera developed its own antitrust guidelines and procedures for Afera Members and events
Afera held its 2nd Tape College in Brussels in April
Afera revised its fee structure to include "Active Member Category V" for multinationals with more than 1,000 employees in Europe
Afera exhibited at ICE, the International Converting Exhibition, in Munich in November

2006 Afera exhibited at IPACK-IMA, the international processing and packaging technology exhibition in Milan in February
Afera held its 3rd Technical Seminar in Brussels in April
Afera hosted the 3rd Annual Global Test Methods Committee Meeting at its 49th Annual Conference in Nice, France
As from the November 2006 issue, Afera News was restyled and made available in pdf-format as well as in print to the Membership

2007 A restyled afera.com was launched on the First of the Year
Afera held its 3rd Tape College in Brussels in April
Afera joined the newly-formed Inter-Industry REACH Project
Afera initiated participation in two REACH implementation projects, RIP 3.8
'Requirements for Substances in Articles' and RIP 3.2.2
'Exposure Scenario Exemplification Studies'

2007 The fast track ISO certification process of the three globally harmonised test methods, EN1939-Peel Adhesion, EN1943-Shear Adhesion, and EN14410-Breaking Strength and Elongation, concluded with the ratification of the norms in July
Confirmed at the General Assembly, a new procedure of territorial representation for appointing SC Members to better reflect the profile and needs of Afera's Membership was introduced by the Steering Committee
Afera approved the launching of a new European Tape Survey performed by the Martec Group in 2008
Afera agreed to lend its full support to the PSTC in the creation of a World Tape Forum
Afera launched a digital newsletter

2008 Afera's latest press release on the Technical Seminar was published in the Swiss trade magazine Coating International
Afera held its 4th Technical Seminar in Brussels in April
The latest edition of the Afera Test Methods Manual was published
EN1942-Thickness is set to become the fourth certified ISO test method.

Strategy Going Forward

As the heart of tape trade expertise, Afera continues to bring together the European tape industry to enhance the product, the business, the marketplace and the future of self adhesive tape in Europe. Its stated strategies include:

Increasing the size and the categories of its Membership base in order to incorporate all entities in the tape industry value chain, including:

· Recognising and promoting the Professional Specialty Die Cutters (SDC) as a European Converter Association within Afera's Membership framework,

· Continuing to expand the geographical borders of the Association to include the Middle East and India,

Maintaining an extensive network of industry players, including:

· Strongly co-operating with counterpart organisations such as the American Pressure Sensitive Tape Council (PSTC), the Japanese Adhesive Tape Manufacturers Association (JATMA), the China National Adhesive Industry Association (CNAIA), the Taiwan Regional Association of Adhesive Tape Manufacturers (TRAATM) and the Korea Surfactant and Adhesive Industry Co-operative (KSAIC); and industry associations FEICA (Association of European Adhesives Manufacturers), the SNCP (the French Rubber Manufacturers' Association), Assogomma (the Italian Rubber Industry Association), the IVK (German Adhesives Association), the Fraunhofer Institute, FINAT (an international organisation promoting the self adhesive labelling industry), Cefic (European Chemical Industry Council), ESIG (European Solvents Industry Group), etc.,

Continuing to offer educational, informative, networking events and other mediums of contact and information exchange to its Members and other industry participants, including:

· Hosting conferences and seminars, such as the 51st Annual Conference in Florence and the resoundingly successful Technical Seminar and Tape College,

· Communicating relevant information through its biannual magazine Afera News, website afera.com, digital newsletter and other mediums,

· Collecting and publishing applicable market and technical data, such as the forthcoming European Tape Survey performed by the Martec Group and the 2008 edition of the Afera Test Methods Manual,

Continuing to manage committees and working groups to address important issues and research, such as in the areas of pan-European and global standardisation, and in the use and quality improvements of tape products, including:

· Achieving CEN (European Committee for Standardisation) and ISO (International Organisation for Standardisation) certification of existing methods among Afera, the PSTC and JATMA,

· Researching and fine-tuning existing test methods,

· Collaborating on findings at the Annual Global Test Methods Committee Meeting,

Dealing globally with public and private bodies of interest to its Members with regard to technical, ecological, commercial, economic and social developments within the tape industry, including:

· Participating in the formation of a World Tape Forum,

· Working with the CNAIA to create a Chinese tape organisation,

· Actively participating in FEICA's European Technical Board (ETB) meetings,

· Regularly hosting and participating in the Annual Global Test Methods Committee Meeting,

Increasing the Association's presence in public affairs issues affecting the tape industry, including:

· Lobbying within the European Chemicals Policy legislative process by joining the newly-formed Inter-Industry REACH Project and participating in two RIPs,

· Monitoring IPPC and other European legislative issues,

Raising Afera's profile in industry media and at industry events, including:

· Holding a press conference at the event of the Association's 50th anniversary,

· Continuing to distribute periodic press releases, one of which having been recently published in the Swiss trade magazine Coating International,

· Attendance of the Annual Global Test Methods Committee Meeting, the PSTC's annual conferences, Technical Seminar and Tape University and FEICA's European Technical Board (ETB) meetings,

Identifying and addressing the evolving needs of its Members through the regular utilisation of structured feedback mechanisms,

Providing full-time administrative and logistical support from its headquarters in The Hague.

THE AFERA STEERING COMMITTEE

The primary goal of Afera's Steering Committee in the mid- to long-term is to be pro-active in spurring and executing initiatives such as the creation of a World Tape Forum. We must be efficient in our focus on the following pivotal points:

· Statistics
· Test Methods
· Environment

For these we obviously count on the co-operation of our counterpart associations, the American PSTC and the Japanese JATMA, and more recently, the Chinese (adhesives) CNAIA, the Taiwanese TRAATM and the Korean (surfactants and adhesives) KSAIC.
Before realising the SC's goal of forming a World Tape Forum, we must first open doors for co-operation in other areas of the world where there are no existing associations specifically for the manufacturers of adhesive tape. This is the case, for example, in the Middle East and India. Afera's mission is clearly to establish new contacts and to assist in the creation of new associations that will benefit the national, regional and global tape industries in the future. An operational task force comprised of SC Members is already working to this end.
Afera's current development and agenda are supported by its solid foundations, pillars which have been strengthening over fifty years and which must continue building strength to ensure the future success of the Association. The two main pillars are the Technical and Marketing Committees. Afera's TC, which has repeatedly proven its worth, holds the best guarantee for the determination, fine-tuning and certification of globally harmonised test methods. We will continue to support all its activities, present and future. Afera's MKC is striving hard to provide useful and reliable market data to all of its Membership. For this reason, the SC continues to lend its support to the forthcoming European Tape Survey, having complete confidence in the good work which is being carried out in this area – work which will certainly produce extremely worthwhile results despite any difficulties encountered.

Afera's bottom line is perfectly laid out in its Statutes: The Association aims to promote the interests of the European self-adhesive tape industry, this in the broadest sense of the word. Following this line, the SC is prepared to consider any proposal to expand or effort to enhance Afera's degree of harmony, know-how and sound corporate culture.
Going forward, it is our belief that the current structure of the SC, based on territorial representation, is the best approach for benefiting Afera's entire Membership. In a few words, the SC will persist in laying down solid foundations for the next fifty years.

Joaquim Puig
Afera President

THE AFERA TECHNICAL COMMITTEE

Upon Afera's establishment in 1958 in Paris, one of its key objectives was creating technical standards and industry-wide test methods, and harmonising individual country methods to European standards. In order to carry out these tasks, a Technical Committee comprised of technical experts from major tape producers was established. The TC has always been and remains the core of the Association, relentlessly pushing technical issues to the fore, maintaining a European perspective yet boldly accepting its growing global role.

The TC's initial role was to bring about the harmonisation of European TMs and to summarise them in regularly updated editions of the Afera Test Methods Manual. The next step was to convert those methods into EN methods. Over the years, the TC expanded its activities from harmonising TMs to a wide range of technical issues confronting the tape industry, such as environmental issues, VOC legislation, food contact legislation and others.

In 2002, Afera's first Technical Seminar, including speakers from Europe and the U.S., was launched. More than 20 high-quality technical papers were presented. The event was a great success and the decision was taken to hold the TS every second year. Based on the success of the PSTC's Tape University, in 2004, the TC organised for the first time and adjacent to the Technical Seminar the 'Tape College', a learning event offering lectures delivered by key industry experts. Again this event was met with great success, and Afera decided for the future to organise the Tape College not together with the TS but in the years between the TS events. This means that every year the TC is charged with organising a major industry event both for its Membership and for other interested tape industry professionals. Both events have become meaningful, well-established industry highlights with impressive participation rates.

In the TMs area, the TC went global in 2004 by achieving the harmonisation of four key TMs with our American counterpart association, the PSTC, and our Japanese counterpart JATMA. This was the result of long and sometimes painful work, which after more than ten years of co-operation saw its success in the creation of EN, ASTM and JIS TMs with harmonised content.

Following this, Afera's TC submitted these TMs to the International Organisation for Standardisation to obtain globally-recognised ISO standards. Realised in November 2007 with the support of the PSTC and JATMA and numerous dedicated Members of Afera's TC, this accomplishment changes to world of PSA tapes as far global recognition of standards are concerned, putting tape producers in a more comfortable role vis-à-vis their customers.

Another field of scrutiny by the TC is EU regulatory legislation which regularly produces new environmental measures. As REACH certainly stands out as a major issue for the tape industry, the TC established the Inter-Industry REACH Project, an expert working group and hired a consultant to support Afera's Members and to ensure that the proper steps are being taken at proper intervals in terms of industry input and compliance. The expert working group worked with the EC to ensure that PSA tapes are recognised as 'articles' and therefore do not require 'registration', another major achievement of the TC's activities.

It is fair to say that Afera's TC has supported the tape industry and particularly its Members in many fields of interest and concern. The TC has ensured that Members remain abreast of new European legislation, technical know-how and TMs and has championed the harmonisation of product specifications and the building of relationships with customers. The TC can be proud of its achievements over 50 years for both Afera's Membership and the global tape industry as a whole.

Lutz Jacob
Technical Committee Chairman

THE AFERA MARKETING COMMITTEE

Afera's Marketing Committee is a working group composed of marketing and industry specialists employed at one of the Afera Member Companies. Meeting at least two times a year, the MKC handles any marketing topic that is both relevant and interesting to the Association's Members. The mission of the MKC is to promote the interests and public image of Afera.

Over the years, the activities of the MKC have evolved into 3 focus areas: *knowledge sharing* – 1, *collecting and distributing market information* – 2, and *networking* – 3. All the activities and initiatives organised by the MKC are geared towards one or more of the above focus areas. Below are listed some of the major events and tools developed by the MKC for carrying out its mission:
· Organising Annual Conferences: Each year Afera holds an Annual Conference in a major European city. The well-accepted format of these Conferences allows participants to achieve a tripletiered goal: – *1* to learn about the latest industry trends based upon presentations from industry experts during the working programme; – *2* to enjoy the local culture and traditions of the host city/country through planned excursions, and – *3* to socialise with industry colleagues throughout the event. The growing number of AC participants in recent years is an important stimulus for the MKC to continue to make this gathering into the most important event for our industry.
· Gathering Market Information: One of the responsibilities of the MKC is to produce statistics as an estimation of the market size of the tape industry within Europe. From the outset this exercise has been a very challenging one, as it has always been difficult to obtain reliable input from Members who are reluctant to openly share such confidential data. In order to overcome this difficulty, the MKC decided in 2003 to launch the European Specialty Tape Market & End-User Survey together with an external market research company. This Tape Study does not only provide quantitative data on the market situation but qualitative comments and views gathered through personal interviews with material and machine suppliers, tape manufacturers and end-users. Recently the decision has been taken to align the structure of this biyearly Tape Study with the structure of a similar report commissioned by our US counterparts of the PSTC.
· Co-ordinating Special Projects: An example is the organisation of the 50th anniversary celebration, including the issuance of this special edition 50th Anniversary Publication, the planning of special events at the Annual Conference in Florence, the issuance of a press release and the holding of a press conference.

· Recruiting Sponsors: The MKC contacts Afera Members for the sponsorship of the many initiatives it undertakes. By advertising in Afera publications and through events publicity, Afera Members can expose their companies and organisations to a targeted audience on very cost-efficient budgets.
· Branding: Wherever possible and within its financial capabilities, the MKC will promote the Afera brand to potentially interested parties. Examples of such promotional activities are the publication of Afera's logo-link on Member websites and participation in industry-wide events with a dedicated booth and Afera-specific exhibition materials. The MKC has also created an image brochure which outlines the goals and activities of Afera to interested parties. Other promotional activities include the distribution of press releases, a biannual magazine, digital newsletters and e-mail flashes on breaking news and events.
· Publishing a Magazine: The MKC is responsible for the publication of its biannual magazine Afera News. In this magazine, Members can read about the past and future activities of the three Afera Committees, special focus articles on PSA-tape-related technologies and trends, updates on legislation and environmental requirements, news from Members, overviews of industry-related events, news from sister associations in other parts of the world (such as PSRC and JATMA), etc.
· Community-Building Through Afera's Website: Throughout the years, the Afera website has become a major platform for exchanging information on all kinds of topics relevant to both Members and non-Members. Non-Members who are interested in learning more about what is going on in the PSA tape industry can find the latest information in a quick and easy fashion by searching our website. Members have access to a Members-only section where they can find the latest news on Afera's activities, as well as search for the contact names of Member companies for networking purposes. An increasing number of visits proves that afera.com has become a widely accepted tool for building a genuine community among all parties interested in what's going on in our industry.
· Expanding Afera's Membership: As it is Afera's mission to promote the interests of the PSA tape industry, the Association aims to attract and involve all entities within the tape industry value chain. As an example of its extended reach, the Afera Steering Committee has in recent years created a special 'other participants' Membership category for other groups in the tape family, namely converters. Now converters such as slitters, die cutters and laminators of self adhesive tape, to name a few, can participate in the Association's activities and make use of its many resources. It is the responsibility of the MKC to develop contacts and relationships with all the players in the value chain in order to widen and deepen the scope of Afera.

Eric Pass, Marketing Committee Chairman

THE MIRACLE OF TAPE

Long ago the application range of tapes was limited. Based on natural rubber and rosin, the first pressure sensitive adhesives (PSAs) were designed for surgical use, electrical insulation and later for automotive (spray) painting. Today's world of tape is vast and inspiring. Consumer tape, masking tape, packaging tape, electrical tape, electronic tape, first aid bandages, diaper closure tabs – these are just a few of the broad range of commodity and specialty adhesive tapes used in today's industry and trade, DIY projects, office, household and personal care.

PSAs
PSAs differ in the adhesive base, the carrier material and construction. Adhesives tapes generally consist of a flexible carrier or backing with a layer of permanently tacky adhesive which at room temperature sticks to most substrates by contact under light pressure. With no need for activation by any energy source, PSAs adhere with no more than finger pressure and have the ability to sufficiently hold onto the adherend.

PSAs are permanently tacky and often aggressive. The carrier often executes the function of the tape, such as closing a box, protecting or decorating a surface, filling a gap or covering a wound. Providing the advantage of convenient use, these tapes offer design and production flexibility with the instant bond which shortens assembly time, and their structural strength can replace mechanical fasteners.

TECHNOLOGIES

PSA Technologies
Solvent-Based Acrylate and modified acrylics, rubber and resin (synthetic and natural), and silicon. The solvent-based process achieves fluidisation by solvation and solidification by evaporation. Strong points: most versatile adhesive properties, full range of thickness.
Emulsion-Based Acrylate and modified acrylics, and rubber and resin (synthetic and natural). The waterborne dispersions process achieves fluidisation by dispersion in water and solidification by evaporation and coagulation. Strong points: thin to medium thickness, high cohesion, applicable to solvent-sensitive films.
Hot Melt Synthetic rubbers. The hot melt process achieves fluidisation by heating and solidification by cooling. Strong points: thin to very high thickness, high peel adhesion, high cohesion at ambient temperature, high speed.

UV-Cured Acrylics and rubber. The reactive systems process achieves fluidisation through liquid components and solidification by curing (radiation-initiated reactions). Strong points: thin to very high thickness, high cohesion, good reversibility.

PSA Product Types

Rubber-Resin Adhesives Adhesives based on natural or synthetic rubber, formulated with tackifying resins, oils, stabilisers and curing agents. Mainly used for packaging tapes, masking tapes and temporary surface protection, this is the most effective PSA.

Acrylic Adhesives Adhesives based on an acrylic polymer mixed with a curing agent. These have better long-term ageing and environmental resistance than rubber.

Modified Acrylic Adhesives Acrylic base polymer formulated with additional tackifying resins to obtain certain properties, such as high adhesion for bonding applications.

Silicon Adhesives Adhesives similar to rubber-resin but that make use of silicon gum and silicon resins. They have high temperature resistance, good ageing conditions and stick to silicon surfaces.

PSA Product Families

Single-Coated Tapes (SC/T) Rigid film tapes, conformable film tapes, fibre-reinforced tapes, paper tapes, flat kraft paper backing, creped paper backing, textile tapes, foam backing, metal foils and electrical tapes.

Double-Coated Tapes (DC/T) Standard DC/Ts, transfer tapes, adhesive pads and strips, high-performance tapes.

Medical Tapes First aid bandages, hospital tapes, orthopaedic tapes, transdermal systems, electrically conductive adhesives.

Transfer Tapes Same as DC/Ts but without a carrier, practically glues on the roll. Photo mounts; joining and splicing plus fixing when thickness is one of the most important parameters.

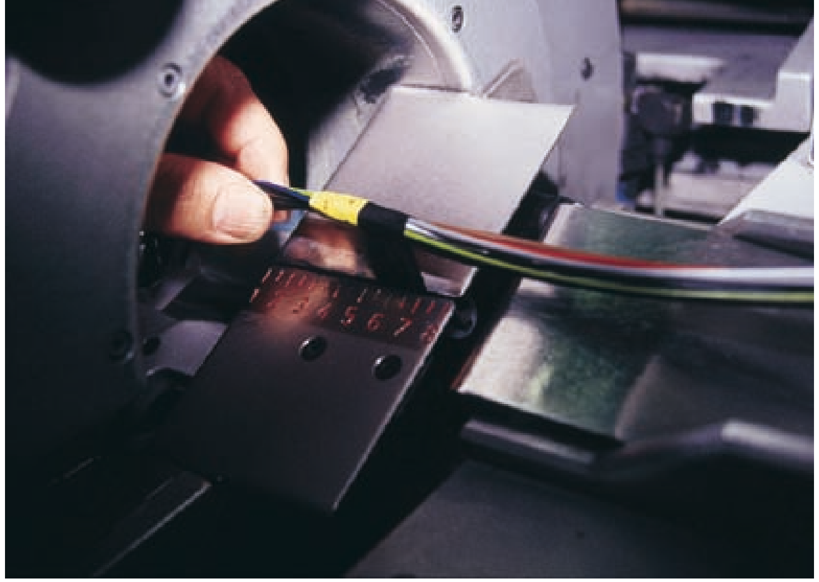
Test Methods

Standard test methods are applied primarily for characterising PSAs and assuring product quality and consistency. Checking whether a tape is suitable for a specific application generally requires more specific tests. The following tests are typical for determining and comparing the quality of PSA tapes:

Peel Adhesion (ISO Certified)
Shear Adhesion (ISO Certified)
Breaking Strength & Elongation (ISO Certified)
Thickness
Dynamic Shear
Tack
Release Value
Unwind Force
Repulsion Resistance DC/T
Weight Added Peel Off Test (WAPO)

Raw Materials

Elastomers: Polydiene rubbers, styrenic block copolymers, acrylics, polyisobutylene and butyl rubber, ethylene-vinyl acetate copolymers (EVAc), and silicone elastomers.



Tackifier Resins Hydrocarbon resins, rosin and rosin derivatives, and terpene resins.
Plasticizers Generally liquid substances of low molecular mass that lower the glass transition temperature (Tg) of the adhesive. They often reduce peel adhesion at ambient temperature but increase low-temperature adhesion.
Fillers Usually powdered, inorganic solids. They increase creep resistance and improve removability of the adhesives.
Stabilisers In terms of stability, the polydiene elastomers are the most critical due to their main-chain double bonds. Stabilisation against UV can be achieved by UV absorbers such as derivatives of benzotriazoles and benzophenones, and by hindered amine light stabilisers (HALS) and hindered phenols.
Release Coatings Enable the formulator to adjust the release force according to the application; for example, the unwinding force of tapes and the transfer of double-sided tapes to substrates. The three most common: release coatings based on long-chain alkyl groups, acrylic polymers with perfluorated alkyl groups, and silicones.

Coating Techniques
Coating is the process of bringing the adhesive onto a backing. The standard equipment used for solvent-based PSAs is the knife-over-roll-, roll-over-roll- and reverse-roll coater. For hot melts, roll coaters and die systems are used. Gravure coating is usually applied for very thin coatings with low viscosity adhesives. For high efficiency, coating is usually performed over a width of more than a meter. The tape rolls are obtained by cutting the web into strips with a width of a few millimetres up to several centimetres. The finishing techniques below are then applied.

Finishing Techniques (Cutting Systems)
Rewinding
Slit Rewinding
Cutting (knife or saw, lathe slitting)
In-Line Slitting
Bobbin-Winding
Packaging

CATEGORIES
Once thought of as mere commodities, tapes have evolved in design so that their functionalities meet today's cutting edge technologies, creating more products and market segments than have ever been thought imaginable. Depending on the purpose of use, a wide range of requirements must be met concerning product properties such as adhesive strength, resistance against temperature, mechanical rigidity and tensile strength, shear adhesion and others. Because of these many product requirements, a wide variety of different product groups exists on the market today.
The type of tape developed and produced in factories today depends on the demands of the converter and end-user, including the adhesive type desired, the PSA product construction, end-user environmental considerations, processing and cost targets.

Surface Protection (SPV) Surface Protection tapes are used for temporary protection of surfaces against physical and chemical impact during fabrication, assembly, transportation or storage. They can be peeled

off cleanly from the finished product without leaving residual adhesive. Also chosen for environmental reasons, they are often recyclable. SPVs are used in conjunction with metal processing, communication equipment, flat panel displays, automotive components, furniture, solar panels, window profiles and white goods.

Paint and Spray Masking Masking tapes protect surfaces against paint and enable sharp paint edges to be made. Whether your application needs are for temperature-resistant, fine-line, or general purpose and painters' grade tapes, different masking tapes are available for each segment.

Packaging and Transportation Various packaging tapes are available to cover a wide variety of packaging and transportation demands. Applications range from carton-sealing to bundling of heavy goods and securing pallets. Specialities include convenience opening tapes and security tape.

Electrical Insulation Tapes are offered with different carriers and adhesives to meet various demands of reliable electrical insulation. Included are tapes for wire harness bundling, holding and identification.

Thermal Insulation and Noise Reduction For thermal insulation and vibration and noise reduction, a wide range of tapes, mainly with foam backing material, is available for employment in industry and the home.

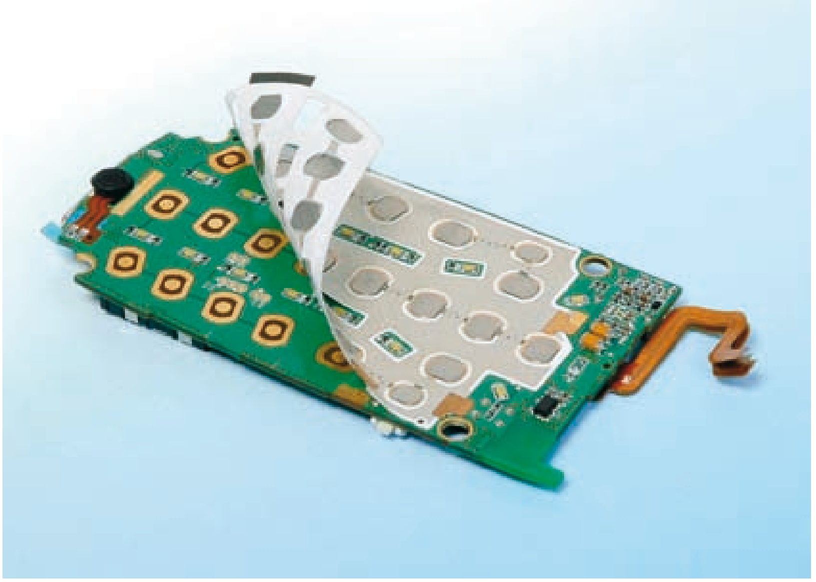
Binding, Reinforcing and Marking There are many general-purpose as well as specialty tapes for the binding and reinforcing of documents and other material. Products for marking include marking tapes for electrical wires as well as aisle-marking and pavement-marking products.

Splicing of Web Material Single- and double-coated splicing tapes are used primarily in the paper, foil, film and textile manufacturing and converting industries in order to enable continuous processes of web material. Splicing tapes are also used for core starting and roll end-tabbing.

HVAC-Sealing For constructing, maintaining and repairing applications in heating- , ventilation- and air-conditioning systems, tapes with different backing materials are used. They serve for holding, sealing seams and as moisture and vapour barriers.

Medical Application Specialty tapes for the health care equipment industry are applied, for instance, on surgical containers, monitoring electrodes and other medical devices.

Bonding and Fastening Single-coated tapes, double-coated tapes and transfer tapes with different backing materials and adhesives offer reliable and cost-effective solutions for a huge variety of permanent bonding and temporary mounting applications. They increase manufacturing efficiency by replacing traditional bonding and fastening materials. Focus markets for these tapes include automotive, consumer electronics, paper and printing, and flat panel display.



Electronic A wide range of PSAs is used for special applications in the manufacturing and assembly of electronic components. Tapes are used for the bandoliering of electronic components, masking connectors on printed circuit boards and many other applications.

Safety and Reflective Included in this category are reflective materials for vehicle markings, traffic control signs and other applications as well as printed warning tapes and tapes providing anti-slip surfaces.

Consumer and Office This category provides a wide range of tapes for the home and office, from multi-purpose consumer tapes for gift wrapping, attaching, mending and decorating, to DIY specialty tapes for home improvement and office tapes for holding, sealing and organising.

Diaper Closure These are PSA systems for manufacturers of disposable infant diapers and adult incontinent products.

APPLICATIONS

Hundreds of varieties of PSAs are used in practically every industry:

Aircraft/Aerospace Tapes are used in the aircraft/aerospace industry as cargo liner tape, window masks, carpet mounting tape, moisture barrier tape and composite bonding flashbraker tape.

Automotive Tapes are used in the automotive industry for attaching parts onto the outer surfaces of car bodies, protecting against abrasion,

caulking openings, insulating slabs, wrapping cable harness, masking during varnishing and supporting functions during assembly.
Tapes provide a variety of functions specifically in the automotive interior. Here general, cloth, non-woven, water-proof and other PVC tapes are used. Sealing materials, double-coated tapes, surface protection tapes (SPVs) and electrical insulation tapes are used in the dash alone, while in the engine compartment sealing materials, double-coated tapes, soft tapes and electrical insulation tapes are used in the HVAC unit and gaskets. PVC tapes used in the engine room include flame retardant tapes, heat resistant tapes, general tapes and cloth tapes.
Tapes are also used on the door sill and outer tread plates. In terms of the automotive exterior, tapes are used in conjunction with the licence plate panel, roof moulding, outer belt mouldings, rocker panel/claddings, emblem and name plate, rear spoilers, body and bumper side mouldings, side mirror and side fenders/wheel flares. Barcode labels are integrated in the production of tyres as tyre labels.

Construction Industry Foamed plastic adhesive tapes are used for sealing windows, caulking construction splices and expansion joints, and adhesives are used to affix carpeting. PVC tapes are used for general purpose applications where a soft, conformable and flexible carrier is requested, such as PE pipe protection and fixation of foils during asbestos removal. Heavy web tape is made for use in conjunction with linoleum flooring, abrasive papers and metal coil splicing.

Consumer Electronics – Mobil Phone Tapes are used in the manufacture of many consumer electronics devices, specifically mobile phones.

Tapes provide a variety of functions in lens protection (window and camera), precision coating and mounting, dust sealing (LCD and speakers), heavy duty mounting, gasket fixation, mesh fixation and in the venting membrane.

DIY In this application segment, packaging tapes, masking tapes, duct tapes and a variety of double-coated tapes are used.

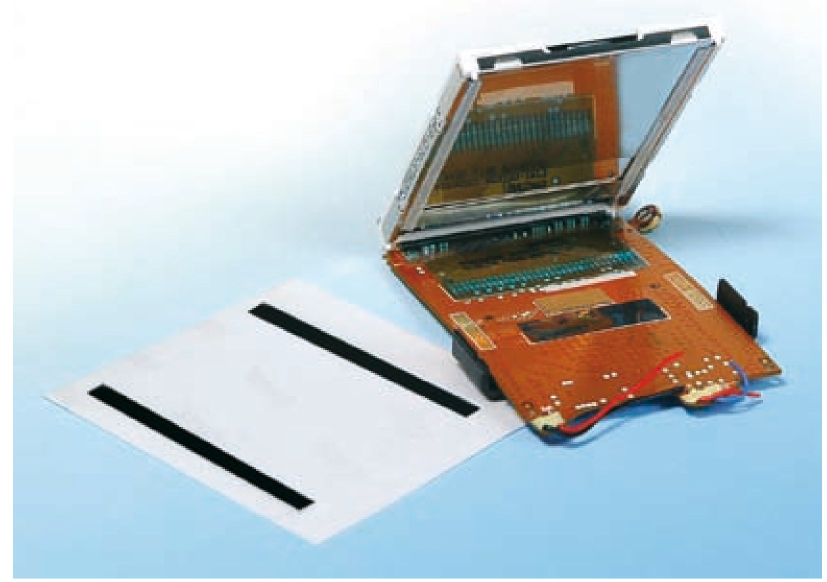
Electrical Equipment Tapes are used for electrical and electronics applications, such as to hold down protective insulating wrap and to band stick wound coils to maintain coil tightness and turn packaging. One-mil polyester film tapes are used in small bobbin wound coils to tab down winding finish, insulate and hold connections and outer protective wrap, and to bundle lead wires. PTFE tapes are used in electrical insulation in the oil industry.

Flat Panel Display – LCD Module Tapes are used in the manufacture of LCD modules, both in the interior and exterior. In addition to adherence, DC/T and cushion material (DC/T + foam) provide light shielding, reflection, a thick carrier, re-workability and an easily-convertible working material. On the exterior of the LCD panel, tape bonds the silicon rubber spacer and the urethane rubber spacer.

Furniture Transfer and foam tapes are most commonly used for fixing trims, as decorative elements and for the temporary fixing of wood panels during assembly. Transfer adhesive tapes are also used for affixing mirrors.

Medical Medical tapes and adhesive plasters are just a few of the PSAs which are used in the medical industry. Everyday they are used in hospitals to cover wounds and during surgeries of all kinds – for fixing cover shields, for cleaning purposes in antiseptic room entrances, etc. One of the most popularly-used medical applications is the fixing of electrodes for the electrocardiogram examination. Medical tapes are also used as dispensers for patch tests, carriers for cutaneous transfer drugs and for fixing ostomy bags and transdermal systems.

Packaging Adhesive labels and adhesive tapes are specially designed for optimal packaging. Packaging tapes for industrial use include the application of tear-strips to open packages and boxes.



Paper Industry In the production of paper, tapes serve to provide continuity in the running of the paper machine, coater, calender and sheeter and during rewinding and in-feed. Tape performs the integral tasks of splicing, reel closing and core start.

Printing Industry Mounting tapes are a very important factor in any stereo mounting process and can be critical when trying to obtain the best print results. In this area, increasingly sophisticated technologies are demanding very special and diversified foam tapes. Double-coated tapes for fixing printing masks on printing machines is a key tape end-use in this application segment. Tapes are also used for joining, splicing and lithographic masking.

Tape is a 'Multi-Functional Sheet' The technologies, categories and applications of tapes today demonstrate that the tape industry has evolved from producing tape as commodities to producing highly diversified, technical and specialised products which touch every part of our everyday lives, from our households to the most industrialised workplaces. As the consumer continues to demand higher-quality and more efficient products, and tape producers invest increasingly in R&D and specialised product lines, the next generation of tapes will know no limits in its qualities and properties.

This Afera Article Made Possible by

Werner Karmann, tesa AG, and Andreas B. Kummer, Beiersdorf AG, Hamburg, "Tapes, Adhesive." Weinheim, Germany: Wiley-VCH Verlag GmbH & Co. KGaA, 2005.

"Adhesive Tapes." AFERA – Description Adhesive Tapes Manufacturing. 27 October 2005.

DIETER STEINMEYER: CEO OF TESA

You spent two years studying at Harvard after attending university in Germany. Did that provide you with the beginnings of an international managerial perspective, a global outlook which also forms an important part of your company strategy today?

Yes, and prior to joining Beiersdorf and tesa, I worked for Baxter, which was already international in scope. I came into the tape business when I was asked by the then-chairman of Beiersdorf to join its executive board and to reposition the tesa business. After I made this move to Beiersdorf's executive board, we went through a major restructuring process and at the same time invested in the reignition of tesa's R&D capabilities. This pretty much kept us busy throughout the nineties.

In a second phase, we began working on establishing tesa as an independent company with its own affiliate structures. I subsequently moved to become CEO of tesa and left the Beiersdorf board as the business was separated from Beiersdorf in 2001. Beiersdorf still owns tesa however.

Did you know early in your career that you would someday work in the tape industry?

I had no idea. Yet there are actually a lot of similarities between the tape and healthcare businesses. In healthcare, the focus is basically on applications. It could be renal therapy, heart surgery, heart catheterisation, but it's always an application. And if you come from that background, then the adhesive tape business in a way is no different, because it's also focussed on applications.

How have you seen the tape business change since you joined it in 1990?

It has become more intense in terms of its competitive dimension, simply because it has become a more global business. tesa used to be a regional company, and now we've made it a global company, so we feel this element is rather pronounced. Global competitors are more willing to make the effort. If you look at 3M, Nitto and tesa, we're all established world-wide.

So your company is affected on a global level in terms of fluctuations in exchange rates and supplies of natural resources?

Yes, but I think exchange rates can be managed. The changes that I see are most important: There is much more competition in technology today, and there is more intense competition in costs. It depends on which field you are concerned with: If you look at the speciality tape segment, technology makes the difference. If you look at commodities, cost position makes the difference. That is why at different ends of the market we have a much more intensive battle, because you either compete in the specialties on a technology platform or you compete on a cost platform, and then Asian competitors play a much different role in that from what they used to.

Do you see the industry moving in a positive direction?

Definitely. For one, we have a growing market. Again something which makes it not too different from healthcare. I think our business tends to grow simply because of GDP. I think we will always exceed GDP growth, because our applications are much more process-friendly, giving you the ability to manoeuvre.

So we will catch applications that are covered by adhesives. We will catch applications that are covered by nuts and bolts and screws, because adhesive tape is much more process-friendly. And it depends on the segment. If you look at the electronics industry, the smaller – and the more miniature – things become, the more you will need adhesive tape, because it is the only technology that allows bonding at these levels. So I think it is a great business, because you have growth ahead of GDP. This gives you the ability to manoeuvre.

What is your favourite aspect of working in the tape business?

I think it is the breadth of applications that makes it interesting. And the growth aspect. And the ability that, regardless of how entrenched competition is, you can always succeed if you move strong on technology. There are companies that have been in this business a long time. Still, if you control your technology platform – your innovation record – you can compete with them effectively.

What excites me is the diversity of applications. It's partly entrepreneurial and it's partly going out and visiting customers with these applications that make it interesting. You can go to a paper mill and see how tape makes the process go. You can go to a mobile-phone maker and see what adhesives can do. You can go to an automotive company and see the vast majority of applications that are just moving through the assembly line, and I think that's interesting.

What do you think has been the secret of tesa's success?

I think tesa has grown in the ability to compete effectively in technology, and secondly, we've put in place the global platform which makes us follow customers very effectively. I think those are the two elements: the ability to innovate and the ability to compete and to follow customers on a global basis. Those are probably the two biggest factors for tesa. Currently tesa is split into industrial and consumer businesses. I think in the consumer part the other key element of success is the ability to develop new categories of tape, because then you remain interesting to the trade and consumers if you do that.

So the first two points – being global and being innovative – I think are important to the company as a whole and definitely support the industrial business. The ability to develop new categories relates more to the consumer business. And behind that is always the generic question: What kind of culture do you develop in an organisation? Our business is fast-moving. Many of our applications are short-lived, and you have to have a culture in an organisation which is innovative, seeking and rapid in decision-making. If you have that, I think that will be the key to your success.

What do you think has been the most important innovation of the tape industry in recent years?

The move to solvent-free technologies.

In which direction do you see the tape market moving in the future? Where will it be in 10 years? 20 years?

It will be growing. It will be characterised by broader applications, as I said. I think we'll continually find more reasons to use tape. Adhesive tape will become in many aspects more 'functional', meaning that it won't just bond but will take on added functions, such as affixing car mirrors while heating them at the same time, eliminating the need for the electrical cord. You basically take the adhesive mass and make it conductive, so that it supports electrical current and changing temperatures.

And I think there will be more and more developments that integrate functionality into the adhesive tape. Another example would be light management on your small hand-held device or laptop. You not only bond, you also add functionality like light management to it, and I think that will be a trend in the industry. Yes, we have the growth trend, but we will also find new applications and new functionality in addition to just bonding.

Do you think the Asia Pacific region will continue with over half of global production volume of adhesives? And the Americas and Europe together just under half of production volume?

We're certainly going to see more growth in Asia. Europe and the Americas will remain important – they will not be left out of the growth trend – but the weight will shift to Asia Pacific.

Do you agree that tape production in industrialised regions will continue to grow in line with GDP, while that of the Asia Pacific Region (incl. China) will exceed GDP?

As I said, I think growth in all regions will certainly exceed GDP.

Do you see the annual global production rate of around 5% continuing at that level?

Yes. Europe and the Americas are at about 3–4% and Asia 7–10%, but there will always be swings. Our business is cyclical in the sense that we also depend on economic activity. So as you have economic up- and downturns, that will affect us, but I believe our business as such – our industry – will always improve and maintain a high level of production. We grew ahead of GDP in 2006, and I believe this happened because, as I think I mentioned earlier, we gained constantly in terms of the ability of applications. But if there's a

"Many of our applications are short-lived, and you have to have a culture in an organisation which is innovative, seeking and rapid in decision-making. If you have that, I think that will be the key to your success."

"So to us, supply management will remain a key competitive element."

recession, we won't have the 5% anymore – maybe 2%, 3% then.

Do you think packaging tape will continue to represent the bulk of tape production volume in Europe in the future?

In volume percentages, yes, it will. I think it will reduce its value share, however, because you will find more advanced products with added functionality entering the market.

Do you think solvent technology primarily based on natural rubber (and/or acrylics in the case of specialty tapes) will continue to be the most-used coating technology in Europe with 2.9 billion square meters (52% of total production in Europe)?

Yes, it will probably remain the most important technology, but we will see non-solvent increasing its share.

What is your view on the use of hot melt technology as related to the globally-limited SIS supply in 2005 and the first half of 2006, as well as feedstock supply constraints in 2006? Do you think natural-rubber-based solvent coating will continue to fill the gap in Europe?

They will add capacity and the problem will disappear. There is demand, so they will add supply. There was an explosion and some capacity was lost, and that requires time to rebuild, but I think any supply industry, looking at the demand, will increase its capacities to achieve a balance. I don't think it's a long-term issue.

So you see raw materials availability on a global level characterised as a balanced supply-demand situation in the future?

The supply function is a critical one for us. So we consider our supply network (or our purchasing network) as a very important function to success, primarily to secure materials, because, yes, we will have a shorter balance between demand and supply. But I think it will also have to do with small volumes needed for the manufacture of specialty tapes.

Hence it will be more critical to seek suppliers which help you balance your needs. That's why I think the supply function is critical because of the price changes we've had. Firstly, you can take natural rubber – anything – and if you buy intelligently, you benefit greatly. Secondly, you have to balance supply and demand, and thirdly, you will find that the other industries also rationalise, and it will be more difficult to get the speciality-type carrying materials we want. So to us, supply management will remain a key competitive element.

In your view, how important is the exchange rate of the U.S. dollar versus other currencies important to your business and the European tape industry in general?

As I said, I think the exchange rate can be managed. It's a nuisance, but I think if it becomes significant, it will basically force foreign investment. Look at the euro-dollar exchange rate. I think in the long run it's an incentive not only to manage but to start building capacities in the U.S..

We've moved from 80 cents to 1.55 – as a European supplier you are not that competitive in the U.S. if you don't have local production or production in a currency environment linked to the dollar such as Asia. And because of it, I don't think the exchange rate per se is an insurmountable issue. I think it can be managed; it just depends what tool you have. You can either make a forward contract, or you basically readjust your supply base.

What do you think are the implications of REACH on your business?

Yes, it's an issue, but it's manageable. It just requires attention.

In your view, what will be the European tape industry's greatest challenge in the future?

How do you attract talented people to the adhesive tape business? That's the point. We develop our own personnel. We do a lot of training and development, and that's part of it. You can recruit – we did recruit from all the premiere companies because they have good education programmes – but then we started to put our own education development programme in place, because that's what makes the difference.

We recruit from technical universities, chemistry, business schools, etc., but then you have to add to that a significant internal training programme, because our business is not easy to understand due to the diversity of applications. Frankly, I was naïve. I thought you could learn about the business in 3–6 months. It takes much longer. The challenge is to achieve the right mix of technical and business personnel. That blend makes the difference.

What has your relationship with Afera been like?

It is an important and useful element of our industry, and I think we need to make sure that it receives the necessary support. The point is that in any industry you need this type of exchange. You need the lobbying function, the standardisation function that it brings, and the exchange about trends in the business. I find it very useful. It's productive. It brings together all our industry participants. It gives us an understanding of industry practice and how you can manoeuvre. There's a value in the exchange. There's a value in the committees; tesa is active in those. If Afera weren't there, one would have to create it.

What are your views on the formation of a World Tape Forum?

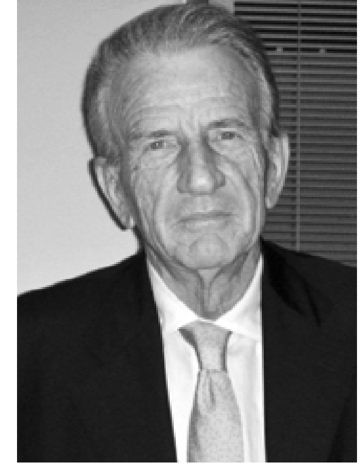
Definitely positive. Like I said earlier, our business is becoming much more global, and if that's what it is, you would want to have the same element that you have in Afera or PSTC on a global level. Not doing it would be a mistake.

"If Afera weren't there, one would have to create it."

Because we are established as a manufacturer in the U.S. and therefore belong to the PSTC as well, you can see that many key issues are common to both organisations. This also applies to our business interests in Asia. Here you notice the benefits of being a truly global company. And I think, as our business becomes even more global, to have an institution representing tesa on this level would be perfect. We would give it our full support.

AFERA CAPTAINS OF INDUSTRY INTERVIEW SERIES

IVANO ZUCCHIATTI: FOUNDER OF SICAD



How did you enter into the tape business?

I finished secondary school at 19 with an accounting degree. After a short stint working at a bank, I realised that was not my calling and that I wanted to enter into sales. I am a natural born salesman and marketer. So I began working for Olivetti selling typewriters, and at the same time I created a company with my cousin printing business cards, but this was not my technical forte.

After a few years, this led to the buying and selling of adhesive tapes. I saw in the budding tape industry opportunity and an interesting and innovative product. In 1965–66, tape was a relatively new product. In 1972, I left the printing business and set up my own tape company, Sicad. At that time, 70–80% of the business was buying and selling tape, and 20–30% was the production of small rolls of tape, because in the beginning I only had one small machine for this purpose.

In 1977, I bought a new coater, and we were the first company to manufacture hot melt adhesives. While everyone else was making packaging tape, we made small rolls, because the sales margin was better for this product. Everyone else was using solvent, and I invested in hot melt because this was the new technology. My new machinery manufactured double-sided tapes, such as those used in carpeting. This was key to our business as we were the only one doing this. The market was then (and remains) better for these specialty tapes than for packaging tapes.

Following this, as I established myself as a producer, in order to increase output, I began manufacturing packaging tape with a new coater using hot melt technology. We also made polypropylene film. Sicad was the first producer to do this. Unfortunately, the quality was not high enough for a market which was accustomed to solvent-based packaging tapes. The price for hot melt packaging tape was also not competitive enough.

In reaction to this challenge, in 1986, Sicad bought a coater utilising solvent-based technology. Formerly we had manufactured our own hot melt-based materials and bought solvent-based materials from our competitors. We had had two qualities of products: solvent- bought externally and hot melt- made by ourselves. Six months after we started manufacturing our own solvent-based tape, the market became so competitive that our profit margins grew too thin. So we changed our entire focus to masking tape. This turned out to be a very good move for Sicad.

One of the relatively unique aspects of Sicad is that it is a family-owned company, which was built from the ground up. I am glad that two of my three children are working in the company. My son, Marco, was named managing director in early 2007 and my daughter, Valentina, is responsible for purchasing. While I founded my business with my own ingenuity – my two hands – my children have been educated as managers of today's business generation.

How have you seen the tape business change since the late sixties?

The technological changes have been marked, more in slitting than in coating. Although coating plants performance has greatly improved.

Do you see the changes as positive?

Yes, but today's market is extremely competitive. It is hard to predict the future. My idea is that a company in this industry must reinvest much of its profit into technology, equipment, sales, personnel and R&D in order to remain successful. We are currently manufacturing a range of a hundred products. Our organisation is growing and therefore we have to adjust our mentality. Different salespeople are needed. If you remain solely a manufacturer of packaging tape, I don't see how you'll survive up against the Chinese producers. We have a range of products which I hope will ensure our future – I hope not just for myself but for my children.

What do you think has been the secret of your success? Of Sicad's success?

I have always put the needs of the company ahead of my own needs for personal prosperity or success. Of course, I established the business in order to make money, but over time it became apparent that that was not my sole purpose in running Sicad. For many years, all the profits I have made have been reinvested in the business.

Basically, 95% of my success is due to hard work and motivation. Today Sicad is prosperous, but nobody could imagine 30 years ago what it was like to start a business with nothing, from nothing, just a dream. I have ingrained in me a great respect for money, because times were hard in Italy and especially for my family following the War. Today, however, nothing can beat the satisfaction I get from seeing a roll of tape bearing our logo in a shop in Sao Paolo, Paris or St. Petersburg.

What is your favourite aspect of working in the tape business?

The fact that I am constantly in the process of building something. This is much more exciting than money in the bank for me. Some people go into business to make money, and in the beginning of my career this was true for me. But it soon became apparent that my objective was establishing

"My idea is that a company in this industry must reinvest much of its profit into technology, equipment, sales, personnel and R&D in order to remain successful."

something concrete rather than creating wealth for myself.

Perhaps Sicad cannot always compete with the large tape producers like 3M, but it gives me so much satisfaction to see that Sicad has the same product with its own trademark hanging next to 3M's in automotive shops in both Colombia and Milan. This is a fulfilment of my dream. I get much more excited about purchasing a new coating machine than adding up our profits in the books. Of course, when you build a business, you want to make money in order to pay your people and reinvest in the business; otherwise, you'll be finished.

What do you think has been the most important innovation of the European tape industry in recent years?

We have the innovation of hot melt- and acrylic-technology used in the manufacture of packaging tape. But actually a little less than 50% of tape in Europe is still manufactured using solvent technology. The most important factor within the industry in recent years with regard to packaging tape is price. If producers of raw materials, such as Exxon, restrict their supplies, as in the case of SIS (synthetic rubber), or lower their prices, different technologies become more important according to their cost of production. In the end, the cost of production determines the technology used. Technology is important in certain segments, such as automotive and other specialty tapes, but price and availability of natural resources are just as, if not more, important.

Are you concerned with raw materials availability in your business?

The real owners of the market are the producers of raw materials, large petroleum companies. We are concerned about availability of raw materials, but the fact that our manufacturing processes utilise alternative technologies allows us to reduce the risk of suboptimal materials allocation. We are currently producing adhesives using five different technologies: hot melt synthetic rubber, solvent natural rubber, solvent-based acrylic, water-based acrylic and silicon.

In which direction do you see the tape market moving in the future? Where will it be in 10 years? 20 years?

Business has become more globalised and competitive, and it will continue to do so in the future. In the past, we mainly concerned ourselves with domestic competition in the tape market. The competition in the European tape market in the future will come from Asia: China, Taiwan, Malaysia, Indonesia, etc.

Our subsidiaries are experiencing the same in Brazil and South Africa. The Chinese can sell their products 20–30% under our prices. This could spell a difficult future for the European self adhesive tape industry, which will require investment and imagination. For the packaging tape segment in particular, how will European manufacturers be able to compete with 35-hour work weeks compared to the Asian 60-hour work weeks?

At the moment, I think European tape products are appreciated for their high quality and enjoy significant brand recognition over many Asian products. But this could change in the future, as it did for the Japanese following the War. They were very motivated to work hard – were hungry for prosperity – and eventually achieved this by increasing both their quantity and quality of output. I think the same may prove true for the rest of Asia over time. In this generation, the Asian work ethic is much stronger than that of the European.

Do you think the Asian market holds opportunities for the European tape industry?

I don't know. It certainly holds opportunities for the makers of high fashion and luxury goods. But I don't think the same is true for commodity products. Europe cannot stop producing goods and base its future solely on the offering of services. It must produce something in order to offer those services.

In the case of China, I think the capacity created by local manufacturers will be able to satisfy the increasing local demand for commodities such as packaging tapes. The opportunities for the European tape industry lie in the demand for more specialised adhesive products which require spe-

"I think the future of the European industry lies in clever market strategising, including consolidation of companies."

cialised technology which may be unique to (or at least at a higher level of quality with) European producers. For the European tape commodities market, I don't see a bright future.

Even in the case of developing technology for more specialised products, the Chinese are catching up because they are clever and work three times harder than Europeans. Europeans will have to be very imaginative about creating new specialised products that haven't been or can't be produced anywhere else. Sicad has built a new laboratory devoted to the improvement and development of new products. At the moment, we are working on six or seven projects. As you can imagine, this takes money, time, personnel, and success isn't guaranteed. Inventing a new product simply isn't easy. But we have a range of products that satisfy 95% of (European) demand. This is our strength.

Do you think the Asia Pacific region will continue with over half of the global production volume of adhesives?

Yes, the packaging tape segment is the core commodity segment of the industry and will remain so. The Chinese don't sell a lot in Europe at present. Taiwan sells a lot of semi-finished/nonconverted products to Eastern Europe – this is not our market. I think future production figures will depend very much on the real owners of the market, Exxon and other producers of SIS. For the rest, tape is a very competitive commodity. In general, it doesn't matter how it is manufactured, just as long as it can close a cardboard box at the lowest price. So I think in the future Asia will continue to produce at the same or higher rate.

And the Americas and Europe will continue together with just under half of the global production volume?

Presently, there is a lot of competition in the tape market among European producers. Within Europe, tape makers could produce two times the capacity needed to satisfy the present demand. This is the biggest challenge of European adhesive tape manufacturers at the moment. The rise of Asian competition is still considered merely a future problem.

Currently, if a European tape company wants to import tapes from China, it must expose itself financially. The terms of payment are much more rigid. In Europe, the terms are much more flexible, which makes the possibility of doing business much greater for European tape companies who don't have a lot of cash lying around. Companies such as 3M have the name and financial capacity to buy finished jumbo rolls from Asia. You also have the capacity to provide service to your customers. At the moment, this is an opportunity for us. Our main competition exists in Italy, Spain and Germany.

The British market was the first to import from Asia. They have a global mentality, but they are largely focussed on price over small differences in quality, which is not so important within the packaging tape segment. The tape simply has to work; the final customer doesn't care about brands and logos in this regard.

We have two problems: *1* – internal European competition, and *2* – decreasing prices in China. Chinese traders – not just producers – are also becoming extremely competitive. I think the future of the European industry lies in clever market strategising, including consolidation of companies. I do hope that the European tape industry will consolidate. If it doesn't, it has no future. It will be impossible for smaller European producers to survive if they don't turn a profit over even a short span of years. This is merely my opinion.

Do you think that tape production in industrialised regions will continue to grow in line with GDP, while that of the Asia Pacific region (incl. China) will exceed GDP?

Unless there is an economic downturn, yes. As I mentioned before, the Asians are hungry for success and prosperity, and they are willing to work to achieve this, as we were in Europe – specifically in Italy – after the War. For a while now, Europeans have lived in relative freedom, luxury and social protection. The European countries have also become much more relatively equalised economic players over the last 10 to 15 years.

Actually, competing companies are no longer as much a matter as competing resources. Chinese labour is competing with European labour. Twenty years ago, I had employees who wanted to work two-to-three hours' overtime on any day to earn more money. Now, at 5 o'clock the office is empty. The European's work mentality has changed. This is not necessarily negative, but it must be factored into the outlook of the European tape industry. The Chinese are hungry for more, and we aren't. They are 1 billion people, and Europe is 360 million. Perhaps everything will be different again in 30 to 40 years.

I visited a small company producing adhesive tape in a Chinese village. Where we would have an automatic, two-meter-long machine worked by two people, there they had a slitting machine of 1.2 meters at which ten people were working, producing at one-tenth our normal capacity. I took a factory tour there and came upon the workers' dormitories. They explained to me that they recruit labour from the countryside, because they are paid $35 a month each as opposed to $60. In the evenings, the workers hold celebrations because their employer provides them with free rice. How can Europe compete with these terms and conditions?

And the price of their product, small rolls, was half the price of our raw materials. I don't know how they can get their prices so low. It is also a question of public/government policy or lack of it. Those Chinese labourers don't receive any employment benefits such as sick pay or pension. The younger generation must provide for the older generation, which has no social security on which to live. This will have to change over the next 10 to 20 years. I don't understand how people can live on these levels of wages. The average cost of living, at least in Shanghai, doesn't seem to be that low.

Do you see the annual global production rate of around 5% continuing at that level?

The economy is growing at that level. As packaging tape is considered an economic indicator, it will follow.

The tape business also depends on free-flowing water, electricity. Because of the increasingly hot summers, Italy is investing in more air-conditioning systems, and this could contribute to an energy deficit in the future. This holds for any place in the world where there is a burgeoning population.

Do you think packaging tape will continue to represent the bulk of tape production volume in Europe in the future?

Certainly. We are not so involved in the production of packaging tape, however. Our core business is masking tape, and after this, double-sided and speciality tapes.

Do you think solvent technology primarily based on natural rubber (and/or acrylics in the case of speciality tapes) will continue to be the most-used coating technology in Europe with 2.9 billion square meters (52% of total production in Europe)?

"The problem is that the European Chemicals Policy makes business more expensive for European producers who must compete with foreign producers who are not subject to the same laws."

This depends on the availability of raw materials, which determines the cost of production of tapes. I think the type of technology and quality of tape produced, especially in the case of packaging tape, is not as important as the cost of production which determines the end price.

What is your view on the use of hot melt technology as related to the globally-limited SIS supply in 2005 and the first half of 2006, as well as feedstock supply constraints in 2006? Do you think natural-rubber-based solvent coating will continue to fill the gap in Europe?

In the U.S., the technology used by large companies such as 3M and Intertape in tape production is hot melt. Water-based acrylic technology is used in California by a Japanese company, and they import a lot of water-based acrylics from China. What technology is utilised is simply a question of price. Also within the U.S. market, 3M imports a lot of water-based tapes from China, but they produce in hot melt.

How important is the exchange rate of the U.S. dollar versus other currencies to your business and the European tape industry in general?

Sicad's turnover is largely generated through exports. A weak U.S. dollar, which is also the base currency for many East Asian economies, not only affects our competitiveness in Europe but in the markets of our overseas subsidiaries. Italian manufacturers, which sell most of their output in Europe, have also been affected by the euro, because they can no longer count on lire devaluations. This is positive for the tape industry, however, because it is forced to further improve its competitiveness.

What do you think are the implications of REACH and any other environmental legislation for the tape industry?

I think the levels of violating toxins in materials should be even lower, but the policy should be applied properly and evenly across the global industry. The problem is that the European Chemicals Policy makes business more expensive for European producers who must compete with foreign producers who are not subject to the same laws.

Foreign importers into Europe should at least be subject to the same chemicals registration policy as domestic producers. If a consumer saves money but loses his health, there is no point to any of it. I think this is also a point for producers in Asia: Poor working conditions and dangerous pollutants characterise many of the factories there, just as they did European industry about a century ago. This will have to change – hopefully sooner rather than later. In general, I am very much in favour of strict environmental legislation.

In your view, what will be the European tape industry's greatest challenge in the future?

The challenge is to keep companies in Asia from producing all of Europe's commodities. Many European companies are relocating their facilities to produce tape commodities in the East and retaining production requiring high technology concentrated in the West. I think some of the production of commodities should be kept in Europe. What will we have left to develop and produce in Europe otherwise?

I think Europe will not be able to survive solely on the services it offers and its production of specialty products. With an economy still based on the production of commodities, Italy cannot compete on a global level with its technological R&D. But in terms of the tape industry, we still hold the key technology to the industry in Europe – the designs, the trends in tape manufacturing are set here. Our greatest challenge lies in maintaining this.

What has been your experience of Afera?

Although I have participated in some of the Annual Conferences and Marco attended one for the first time in 2006, I have not personally been that active in Afera, nor have I gotten the impression that Afera's Membership is very active. But of course this principle works both ways: the more its Members participate, the more dynamic an organisation Afera will become.

It would be useful if Afera would perform the added function of tracking certain anomalies in the market, such as monitoring importers of goods and the goods imported and sold within Europe. Also monitoring the standard of local products. There should be conferences and meetings more often than once a year that include more participation from the general Membership. The Conferences are high quality events which are worthwhile and informative, although they are less useful to us in terms of networking and business leads as everyone in this industry knows each other already. It was a good move to include converters in the Association's activities. We would also like to see more email updates and newsletters.

What has Afera done for the tape industry?

I think it has been very useful in terms of setting standards across the industry and acting as the voice of the industry. I think going forward Afera should concern itself with performing various practical functions to support the tape industry, such as engaging in more market research and product and production monitoring.

What are your views on the possible formation of a World Tape Forum?

I think we should first improve the role and activities of our current European organisation before creating a larger, more complex global organisation.

Would you like to see more involvement between Afera and the PSTC?

Yes, I think this will always be beneficial, but I still think we should concentrate on uniting and improving the European tape market before looking outward. Perhaps this is my typical Italian mentality, which is more independent- and inward-thinking. You must also take into account that my company is privately owned and operated, as opposed to other larger tape companies which are publicly-owned.

AFERA CAPTAINS OF INDUSTRY INTERVIEW SERIES

EMILIO ANGELI: FORMER AFERA PRESIDENT, CAREER TESA MANAGER & INDEPENDENT CONSULTANT

How did you start working in the self adhesive tape business?

I started out in 1964 in an Italian mechanical company producing bread-baking ovens. It was a specialised industry. Times were hard then, because the Italian economy was in crisis. After a year and a half, they moved a number of Italian citizens to foreign countries to find work. Emigration for us is very normal. So I moved to Germany and I spent my first couple of months there studying the German language, which is not easy. And then I found work in a small iron mill in Munich, and it was hard – very, very hard. I stayed there for about four years and in 1969 went to Beiersdorf – tesa Italy. The Italian branch of the company was searching for mechanical engineers with knowledge of German and willing to work hard for little compensation.

So you started working in the tape business when you were recruited in Italy?

Yes, it was by chance. I was working in Germany, and then the deal was to come back. The economic situation in Italy was improving, and it was the end of the sixties. I answered a call from tesa for a technician. Following the interview, I was offered the job immediately. Probably because I didn't ask how much I would make! I was interested in returning to Italy – but not because my experience in Germany was bad.

So you were interesting to tesa because of your knowledge of German?

Yes, I speak German at the same level as I do Italian – very fluently. It is my second mother tongue. Then I started at tesa Italy. At the time it was Beiersdorf, which was later split into different companies. I thought I'd stay working at tesa for a few years, and after 40 years, I am still there.

You seem very busy for someone who is supposed to be retired? Are you currently involved in extra projects?

I started in tesa in the late sixties as an application advisor, and then I went to marketing as product manager, then to consumer products, then to marketing and sales manager. Then in 1988–1989, I was assigned a special project: a merger. We had acquired the largest Italian producer at the time, and I was there, near Como, for approximately a year in order to put together the merger. And then, coming back to Milan, I took over full responsibility of the new company, tesa Comet, until 1997. That is my Italian history.

In 1997, I became a gypsy again and for three years was business unit manager in Hamburg with world-wide responsibility for packaging and part of the consumer business. And then from 2000–2004, I was responsible for tesa's Eastern European business, building up a new region including 25 countries. I created a dozen tesa companies there. In five years, the turnover increased and results were positive. So it wasn't too bad. And then I retired.

So you've retired at a great high?

Thanks to the company, most times my results weren't bad. And then from the beginning of 2005, I started working as a consultant on special projects for my boss, tesa CEO Dieter Steinmeyer, whom I met when he joined Beiersdorf to reposition tesa in 1990. I've always worked closely with Mr. Steinmeyer – first when I was responsible for tesa Italy (at the time, after Germany, Italy had the largest tesa operations) – and then as business unit manager in Hamburg (I participated on the board of the division) – and then as regional manager (tesa's business world-wide is made up of six regions, and all the regional managers report to Mr. Steinmeyer). So that's my career at tesa – in the tape business.

"The fact that some tape producers started out 30 or 40 years ago focussing on one tape, such as packaging tape, and today focus on every type of tape but packaging tape says a lot of good about how the industry has evolved. This is also a good sign for the future."

So you've had a very successful career, probably due to a lot of hard work?

I've been lucky, having good opportunities at the right times, and I stepped up and took advantage of them. I think my secret is that I love tesa and I love the world of tapes. After 40 years, you either love what you do or you don't.

How have you seen the tape business change since you started working?

In 1969, tape was not so popular and considered expensive, and many companies refused to use tape because the cost of tape applications was much higher than that of other solutions. Not only packaging tapes, but masking tapes and many other applications were not well-known at the time, because the tape itself cost a lot of money, and people preferred different solutions. Also, at that time, labour in Europe was much cheaper than it is today. So to utilise more manpower at that time was not a problem.

For this reason, initially it was very hard to expand the use of tape. You can imagine: I joined tesa Italy in 1969 and our price list consisted of no more than 20 or 25 products. Today, tesa's pricelist consists of at least 600 tapes – different sizes, different colours and so on. So this aspect of the business – the product itself – has changed a lot. Tape solutions are becoming ever more important, because tapes are no longer evaluated as inbetween solutions. Today adhesive products are seen as valuable technical tools used to solve technical problems.

Do you see these changes as positive?

The fact that some tape producers started out 30 or 40 years ago focussing on one tape, such as packaging tape, and today focus on every type of tape but packaging tape says a lot of good about how the industry has evolved. This is also a good sign for the future. The adhesive tape business is able to regenerate itself because we are continuously introducing new products for new applications, for new technical solutions.

There are a lot of competitors in the tape commodities market, even if customers are asking for a consistent level of satisfactory quality. For this reason, despite completely different cost levels, the Chinese are successful but not as successful as you would think their competitive prices would make them. Consistency of quality is still a key issue. Europe still equals quality. Not high quality necessarily, but safe and constant quality, which is what the market is asking for. This is one of the keys to success for many companies. Even companies which don't market their products as the cheapest on the market maintain a loyal customer base, because their customers prefer to pay more for their tape and then save in the cost of production, knowing that it will not be hindered because the level of quality with those producers will remain consistent.

Finally, I always try to see things positively. It's in my character. I see negative issues as problems to be solved; positive issues are always simply opportunities. Moreover, you must take into account that your view on the tape industry will vary greatly according to your vantage point. It is one thing to be the CEO of a large, global producer like tesa and another to be the founder of a smaller, family-owned company. Your evaluation of the market and its future could be completely different.

What is your favourite aspect of working in the tape business?

First of all, that you don't have any limits to the market. Endless opportunities are waiting for the flexible and curious. The applications of tapes are so diverse and generalised today that you can apply adhesive to anything and invent all sorts of new applications. I always say to the young sales people when I am training them: be careful, if one tape comes onto the market for one application, normally more than 50% of the actual application of the tape is completely different from the original application for which the tape was developed.

For example, if you develop double-coated tape in order to join two pieces of paper, sticking paper together will remain one of the most important application fields of the specialised tape, but if you look, you will find a lot of alternative applications for the new tape in other industry branches. One of the most important forces in the tape business is curiosity. Be curious at all times about what could be possible. The tape business also asks you to be flexible. I think if it weren't for these two things, it would simply be boring.

What do you think has been the secret of tesa's success?

There are different ways to focus on the business. The normal American way is to focus on the product, which is considered very, very important. For a German company, the product is important, but the people who use it are more important still. So they have set up the company mainly for the customers. tesa endeavours to be very, very close to the customer – not too close, but just enough. This is one of the reasons for tesa's success especially over the last ten years: tesa strives to partner with its customers, to find solutions to their daily needs and problems.

Finding the right cost of use, not price, is key. Price and cost of use are completely different issues. Tapes are not sold so cheaply but at the right price, leaving us with a nice margin. We want to help the customer to reduce the cost of use of the tape. Ultimately the full cost of the utilisation of the tape is lower with tesa than with its competitors, because we help the customer rationalise their use of tape – to choose the correct tape for their needs and to use it effectively.

In addition to this, I would say that we are a little bit innovative. Not just innovative to match the evolving market, but we are innovative in our very approach to the market and our customer. For example, we are helping our distributors not only by showing them new products and applications – so much specialised information at once is usually too difficult for the distributors to digest – but we help them to more effectively and professionally organise their organisations. We have a lot of salespeople in Europe. We have large companies which must be organised and well-run. We also help our distributors in conducting their business, in the larger sense of the word: to organise their sales forces, logistics, purchases and so on. It is an innovative way for the customer to get support from the supplier. We are really trying to act as good partners to our customers.

What do you think has been the most important innovation of the tape industry in recent years?

There haven't been so many innovations in products over the last thirty, forty years. I think the most important innovation is the environmental component which has arisen in relation to our industry. We have been increasingly focussing, especially in our production and product use, on avoiding waste – avoiding making or utilising products which are not environmentally recoverable. Not only tesa, but all the major companies of the industry, is working in this direction in order to further develop their environmental consciousness.

In which direction do you see the tape market moving in the future? Where will it be in 10 years? 20 years?

I think tapes will become increasingly important in the fixing area because the quality and limits of tapes are increasing continuously. Ten years ago, double-coated tapes were used more or less for adhering carpets or for stereo mounting in the printing industry. Today double-coated tapes are used for hundreds and hundreds of applications: fixing parts in the automotive industry, in airplane production, etc. Reliance on tape is increasing because the quality of tape is increasing, and this trend will continue in the future.

I dream often of the new frontier of tapes, not just one in which tapes are substitutes for some applications but in which tapes are used as total glues and for mechanical fixations. This is in terms of quality. In terms of volume, I think the tape market will grow slowly, in line with GDP, 2–3% per year and not much more. The value will increase much more. So the mix of the products used in the future will be completely different than that of today. This is the reason leading companies are investing a lot of money in R&D.

Do you see the European tape industry consolidating into a few large tape producers in the future?

There is a lot of room in the market for very small companies specialising in niche markets and very large companies. I think medium-sized companies will face many more problems in the future. Either they will be absorbed by larger companies, or they'll be forced to merge with other companies. Either you have small, family companies which can be managed simply by limiting costs, or you must use your resources in the best ways. You must continuously reduce your fixed and variable costs, because customers are more and more conscious of the market situation. They more often ask for cost reductions. Today, to have a sales force costs a lot of money, and a medium-sized company is hardly able to absorb these kinds of costs.

In terms of commodity tapes such as packaging tape, will customers always look for the cheapest product to satisfy their needs? No. Of course customers constantly ask for better prices. Not end-users, though. End-users are not so strongly interested in the price of tape. One example: One of Italy's biggest consumers of carton-sealing tape is a pasta company. Although this company is a large consumer of tape, I am certain the company does not insert the cost of tape into its overall production costs. Car producers such as Fiat and Mercedes Benz are some of the industry's largest tape customers, and they also do not insert the cost of tape into their costs.

Why?

Because the cost of the tape in their production costs is so small, nobody cares. We tape producers are always price-conscious because we compete with each other and our distributors sometimes take advantage of this (and that is their right). But ultimately, the end-user is not concerned with relatively small price differences. What the end-user is focussed on is having the best adhesive solution for his problem, in line with a consistent level of quality of the product.

Sometimes end-users reject cheap tape because they don't want to risk inconsistencies in quality. This would ultimately result in too high a price paid in the larger scheme of the production of their products. Consistency of quality is normally not a point of strength of cheap tape products. Some of the Chinese produce good tapes, but in the production of roll to roll, the quality varies greatly. The end-user sees this difference and they don't like it. Price is an important element of tape products sales but most often not the defining factor of a successful tape. In my opinion, a tape's quality and consistency are most important.

"Price is an important element of tape products sales but most often not the defining factor of a successful tape. In my opinion, a tape's quality and consistency are most important."

This also explains why there are so many products on the market. Because you can find Chinese water-borne acrylic tapes at a minimally satisfactory level of quality. All tapes are basically able to do the job. And you have very thick PVC tapes, three times more expensive than the Chinese ones. Why does the customer choose one or the other? Because he needs to choose on the safe side for the application to be successful. If you use a more expensive tape with success for over twenty years, why change to save a little money? The risk is too great.

Lastly, as an end-user you go to a supermarket or stationary store and choose among the tapes that are available to you. That is why the key to success in the consumer tape business is building and maintaining shelf presence at the point of sales.

Do you think the Asia Pacific region will continue with over half of global production volume of adhesives? And the Americas and Europe together with just under half of production volume?

The Asian Pacific region is far below its needs in production terms. In order to saturate the Asian market, they must grow like crazy for the next five to ten years. Even if you take only China and India, two or 2.5 billion people, they need tape! Now everyone is concerned about the Asiatic competition. I think it's okay. It's not easy to be confronted with Chinese and Indian prices, but I think they are also trying to raise the quality of their output, because internal consumption is increasing like crazy, and they are also asking for better quality tapes too.

So the Asian phenomenon will pose a threat to everyone in the future, because there will be more competition in – more pressure on – the market. But I think the Asians will concentrate much more on their internal market than their external one. The first sign of this is the Chinese government cutting subsidy programmes for exports. In July 2007, the Chinese government cut reimbursements of VAT for exported tapes also because they need more tape for the internal market.

The reason why smart international companies are investing in China and India – not in order to re-export – the transport costs alone would offset any savings in production costs – but in order to serve the local market, is that they will be the biggest opponents in the future. Not only large companies such as tesa and 3M, but medium-sized companies such as Certoplast, Lohmann and so on produce in China, because their customers, as our customers, like Volkswagen, Mercedes Benz, and a lot of other multinationals, are increasingly producing locally for the local market. So I think the future for the tape industry is pink but challenging.

Do you agree that tape production in industrialised regions will continue to grow in line with GDP, while that of the Asia Pacific Region (incl. China) will exceed GDP?

I think growth in volume will follow GDP at 2–3%. In volume, 70% of the business is made up of carton-sealing tape. Another 10% is masking or paper tape. The majority of the business is pure commodity tapes. Normally these grow in line with GDP. But the growth in value will be completely different, because the mix of the products sold is improving daily.

For example, double-coated, cloth, metal and foam-based tapes are becoming increasingly important. This means that the market value of the tapes in the world is increasing much more than 3%. So you have a 3% volume increase, but you have another 5% mix value increase; that means that 6–7% per year is the value increase of the market. You also have to take into consideration the rate of inflation on top of that.

Do you think packaging tape will continue to represent the bulk of tape production volume in Europe in the future?

In volume, yes. This is approximately 70% of total production.

"Especially in Europe, the environmental issue is becoming more salient. Tape producers are under continual pressure to reduce solvent emissions in production."

Do you think solvent technology primarily based on natural rubber (and/or acrylics in the case of specialty tapes) will continue to be the most-used coating technology in Europe with 2.9 billion square meters (52% of total production in Europe)?

Yes, there are important quality reasons for this. Especially in Europe, the environmental issue is becoming more salient. Tape producers are under continual pressure to reduce solvent emissions in production. Companies are constantly pressured to find alternative technologies, but for some high performing tapes today, solvent-born is still the sole practicable solution.

In the European carton-sealing business today, hot melt is one of the most important technologies used. But hot melt also has its limitations in terms of large quantities produced, because one unit of equipment for utilising hot melt technology produces large amounts of tapes, up to 300–350 million m²/year – that's in 100-mio rolls – and there are few companies which are able to sell in these quantities. For this reason also, here in Europe some companies choose water-borne technology. Water-borne technology is still environmentally friendly and the equipment produces lower quantities – up to 100 million m²/year, quantities which are much easier to sell on the market.

In terms of the environmental factor as related to technology used, you have to divide the issue into two areas: production, in which water-borne and hot-melt are the best, and recycling, which is a little bit different. Tapes are not recoverable. In the process of reducing carton boxes to pulp, water-borne-produced tape becomes unstable and dissolves in water; therefore it cannot be separated from the pulp mixture. Hot-melt or solvent born tapes are water-stable and can be easily separated from the pulp mixture. The quantities involved are so small, they are not considered issues in the environmental arena. In Europe we produce 7–8 trillion m²/year – the weight of this compared to the total amount of industrial waste is negligible.

What is your view on the use of hot melt technology as related to the globally-limited SIS supply in 2005 and the first half of 2006, as well as feedstock supply constraints in 2006? Do you think natural-rubber-based solvent coating will continue to fill the gap in Europe?

That changes from year to year. We have to adapt ourselves to the available supply of the market, but I don't think the impact of a shortage would be such that we need to modify the type of technology used. We are not really big users of synthetic or natural rubbers. For rubber producers, the tape business is a rather insignificant player in the market.

Do you see raw materials availability on a global level characterised as a balanced supply-demand situation in the future?

I think so. We will not have a shortage in the future. We will only have to buy at higher prices, because, as I said before, the priority market for these suppliers is, for example, the tire market, and the technical rubber market, and not the tape market at all.

What do you think are the implications of REACH on your business?

In terms of raw materials, REACH will greatly impact the European market. As we have seen over the last two years, many suppliers have arrested production of chemicals, because complying with REACH regulations was too expensive. And then in the last couple of years, one of the most important issues in R&D – not only at tesa but at a many companies – was figuring out how to substitute these discontinued chemicals. We've spent a lot of time, money and energy on researching ingredient substitutions. This was the first effect of the European Chemicals Policy.

In order to use chemicals in certain quantities under REACH, you must spend a lot of money. If you're not willing to spend a few hundred thousand euros on the registration documentation required for your chemical ingredients, you must get rid of those chemicals and formulate different recipes for your products. It's affecting a great part of our industry. I think in the last couple of years, not only tesa, but most of the companies in the tape industry, has been affected by this legislation. So there is no shortage of ingredients for tape producers, but they must find substitute ingredients to meet their production demands. Different suppliers may be used to supply the new ingredients.

In any case, many formulas have been or must still be changed. And doing this is not easy, because you must conduct customer trials to ensure that the products work. Remember as I said in the beginning, the reason why I am in love with the tape business: one product is normally dedicated to one application. But only 50% of the tape's sales are related to this application. The other 50% are for unknown applications. So if you change something about the formulation of the tape, this can work for the application it was designed for, but perhaps not for the other applications. So reformulation is sensitive, complicated and challenging.

As I said, the last two years have been dramatic for us. In the future, we will see the development of more regulations with which we will have to comply. REACH just takes into consideration 'components' (and tapes are not 'components' but 'products'). We have to remember the case which arose a few years ago about safety sheets with which we had to work to comply. But I think in the current case, Afera has greatly helped the tape industry by establishing a common starting point from which to confront European legislation such as the European Chemicals Policy.

In your view, how important is the exchange rate of the U.S. dollar versus other currencies important to your business and the European tape industry in general?

A little bit. Our friends at 3M are really enjoying the current situation. They are becoming even stronger in the European market, because they are offering many U.S.-dollar-based prices, especially to Eastern Europe. During my time in Budapest, I was slightly affected by this situation. But it's cyclical; it all comes out in the wash. In any case, good competition obliges you to find a solution. Competition can be beneficial when it forces self-improvement.

In your view, what will be the European tape industry's greatest challenge in the future?

First, to reduce fixed and variable costs. Mainly fixed – and also variable – because competition is increasing in the internal European market. Many more companies produce speciality tapes, so they must strive to be frontrunners with R&D – innovative products, innovative solutions – but you must also be very cautious with your costs.

Going forward, companies will have to be even more competitive and professional in all are-

"Going forward, companies will have to be even more competitive and professional in all areas to survive."

as to survive. For example, many companies have dismissed their internal logistics and direct sales people in order to obtain better services outside of their fixed costs, in order to determine the exact cost of these elements of their business to avoid an explosion of costs. This is also why small companies will remain small, dedicating themselves to very, very small niches, without investing in distribution, sales and logistics. And other companies will consolidate into fewer companies in order to limit their distribution costs as much as possible.

Second, to confront environmental regulations. We will come up against an increasing amount of European legislation. Solvent emissions were first, but other issues will come up in the future.

If you could change one thing or wish one thing for tesa or for the tape business in general, what would that be?

I think the industry is developing in the right direction. If you compare it to what it was 30–40 years ago, it is completely different now; the world is also completely different now. But I think we have proven our ability to adapt to the evolving market. In 20 years, the market will be completely different and probably the tape producer too. It is an ongoing process. I don't see the need to change anything dramatically at the moment. We are on a safe path: we are investing in a lot of R&D, particularly of new applications and environmental issues. These two areas will be the battlefields of the tape industry in the future.

What has your relationship with Afera been like?

I became involved with Afera more than 20 years ago. I have been Afera President twice, once as the Italian Regional Representative and once as the Eastern European Regional Representative, totalling more than five years. I have been on Afera's Steering Committee for many years. And I was one of the facilitators of the move of Afera's Secretariat from Paris to The Hague in 1998. I retired from Afera at its 50th Annual Conference in Barcelona. My place on the SC was taken by a former colleague from Eastern Europe, Renata Klamka. It's time to welcome new blood into Afera's leadership. Experience is needed, but we also need fresh ideas and young blood – this is more important I think. I am still active in the industry, but I trust that at this point, younger, fresher professionals will do a better job.

You're retired, but you're still working?

Yes, I still run projects in the tape world. I have set up a consulting company in Italy, and I consult mainly for tesa. In the future, we'll see. I am still active in Assogomma, which is one of the most active national associations in Europe. You see, one must also work with the other side if you expect fair competition. You can have all kinds of competition – everyone is trying to take your customers and business – but if you want to keep it honest, it's much more pleasant. I trust in the work of industry associations – they are an important part of our business life.

How has Afera benefited both tesa and the general tape industry?

Afera has helped us especially in the area of test methods. I think Afera is very useful for tape companies, because it can represent our industry in important public affairs matters such as environmental regulation.

Top-level market studies and evaluations have become increasingly important. To have well-informed competitors is much better than having misinformed competitors. In our business, we have a lot of different application fields. Carton sealing is the largest, paper- or masking tape next, then protective tapes and the many niche tapes. It's better to have everyone correctly informed on the actual size of the various niches, so that no one over-targets a certain niche in terms of price as has happened in the past. If they are well-informed, tape producers will plan and act more intelligently. Afera offers our industry the possibility of creating fair, open competition and sharing what they want to share. No more, no less.

Lobbying with different European interest groups is very important. As it is too expensive and time-consuming, Afera cannot do this on its own, but it provides the means of communication and co-operation with the various platforms which represent the interests of the tape industry. It keeps the tape industry informed on the latest developments in public affairs. Having Afera's Secretariat at L.A.M. also lends strength to the Association, as L.A.M. is closely tied to other industry associations and knows the work of technical companies, industry interest groups and public affairs. Representing a large company in Afera doesn't mean that I had more weight but that my views were heard, just like those of any participant in the Committees.

What are your views on the formation of a World Tape Forum?

I welcome it, because ultimately I think the tape business is very insignificant in size if viewed globally. Allying with other regional industries would only strengthen the industry in terms of its handling power with customers, in various markets and in public affairs. We can try to ignore it, but the reality today is globalisation. Our customer is more globalised, and if we accommodate him, we must think and act globally ourselves.

In any case, our global association would facilitate better competition everywhere. Many companies are so small that they only think locally or Europe-wide, but a global association at least would not hurt them and probably benefit them. Even if a company remains local in action but global in thought, this is already a positive step. People who are business-minded must do something in order to make things happen, be active, be involved. You must be international – you must maintain a wider perspective, because if you focus only on your own small field, you will miss out on opportunities. You also won't be able to defend yourself against risk and competitive attacks. To think globally is a must for everybody today. Global is the raw materials market, global is our customers, and it's more interesting.

LUTZ JACOB: AFERA TECHNICAL COMMITTEE CHAIRMAN, CAREER CONVERTING INDUSTRY MANAGER AT EXXONMOBIL

How did you start working in the self adhesive tape business?

I wasn't satisfied with the job I had following my studies, so in 1971 I joined a tape company presently called Monta which is located in my home area in Bavaria. A medium-sized company employing 180 people, Monta was my employer for ten years. I first worked as production assistant and then as production manager and R&D manager.

During my first years working at Monta, we produced all kinds of specialty tapes using very modern machinery. Then we began to narrow our range a bit – to specialise further. Monta's ownership changed around 1976–77, and then things became more difficult. Production management was a very exciting and stressful job. I was responsible for overseeing everything, and we were short of manpower. There was too much disagreement among the management, so eventually I looked for another job.

I talked to Exxon, which was one of our suppliers, because I was interested in working in the technical service for the tape industry. Exxon representatives from the Cologne office informed me that their 'European Technology Centre' in Brussels was looking for someone with my background. So they hired me, and I spent six months working in Cologne before moving with my family to Brussels to assume my position there in 1981. I worked there for 26 years before retiring in 2007 and finally moving back to the mountains of Bavaria six months ago. So in total I have 36 years of experience in the tape industry.

Can you tell us a bit about your experience at ExxonMobil?

At ExxonMobil, the largest company in the world – sometimes overwhelming – employing about 80,000, I worked mainly for the tape industry and partially for the label industry, initially within Europe and then globally. I was in charge of all technical service customer support, daily/training customer support, educational development for tapes for the global industry, etc. I travelled a lot. Especially in my last ten years of working at ExxonMobil, I spent a lot of time travelling in Asia and the U.S.

ExxonMobil's European Technology Centre's work is largely based on the use of the company's own supplied raw materials, as ExxonMobil is one of the largest suppliers of raw materials to the tape industry. We developed raw materials – new materials targeted all the way down to end-users – then brought them to the customers. A lot of work was put into establishing our products within the Asian market, along with all the technical know-how which would enable them to use the products. That was mainly my role: to convey the technical know-how with respect to our products, so the end-user could use it right away.

Many of our European customers never engaged in any development activities; they just integrated what we developed, a product or formulation, into their own systems. They buy our raw materials, hoping that their competition doesn't have or use them. On the other hand, if you have something new, it's just a question of 2–3 years,

"Tape traders actually have a big piece of the business – they make more money on tape deals than the producers do themselves. Tape producers are always the ones with the smallest margins."

and the competition comes out with the same products. Some products can be patented, which is a very difficult process, but in most cases innovations are eventually copied, step by step.

What is your educational background? Was it relevant to the tape industry?

Yes, it was. I am a chemical engineer. But whatever you study nowadays, you need to learn the game, whichever job you take. My job had a lot to do with chemistry, but it was such an esoteric kind of chemistry, the kind you wouldn't be familiar with from having studied standard chemistry.

When at university, I was never aware that working in the tape industry was a possibility – there is nothing that you study specifically at school for that. Actually, over the years that I spent working in the tape industry itself, I was not required to use chemistry that often. Rather, my experience was the combination of chemistry with machines and production. I have a love of machines and tape…and I was a bit flexible, I guess.

You've known the tape business since 1971. What changes have you seen take place?

First, increased specialisation of products and second, globalisation. One thing that has changed internally in the tape market is that companies have become much more specialised in their production of tapes, reducing the number of products in their product lines. The aim is to become more competitive and to specialise in the market for lower-cost products. Except for larger companies like tesa and 3M, the medium-sized companies all specialise in ever fewer products as a means of better survival.

In the past, this was true of the region-based European companies, which were very focussed on national markets. But with the globalisation of the tape industry, we have seen a big change. From a supplier point of view – of raw materials to tape itself – nowadays your competitor is somebody in China, Taiwan, Japan or America. You're really competing with the global market. It has become a very global business.

When did the globalisation of the tape market really take off?

In this business it started in the eighties. In the U.S., the tape business was always global. Even when I joined Exxon in Brussels, European tape companies had already been conducting business in the U.S. So there was also an exchange of products back and forth between Europe and America.

Asia was not a part of the global tape business at that time in the early eighties however. In the nineties, Asia became bigger, stronger and started to export to Europe at low prices – sometimes at questionable levels of quality, but people began to purchase its products because of the great prices it offered. Now it is acceptable to compete with any Asian country – the Philippines, Indonesia, everywhere they make tape. And of course usually they make it at low cost. And every company has a website these days.

So finding the best tape at the best price is now just a digital click away?

That depends on what kind of tape you're after. Packaging tape is largely sold through tape traders and resellers. The largest volumes are sold through these agents to the consumers. Only at large multinationals such as tesa and 3M do they trade directly with retailers under product names. Tape traders actually have a big piece of the business – they make more money on tape deals than the producers do themselves. Tape producers are always the ones with the smallest margins. If you compare the packaging tape selling price from the producer with the selling price in the super- or brico-market, the latter is five to ten times more expensive than the former.

Do you see the further specialisation of products and globalisation as positive?

As for the trend of product specialisation by companies, certainly, I see this as positive. Companies need to focus on efficiency. If you want to have a broader range of products, you have to place more resources on R&D. This is usually too expensive for smaller companies. As for the globalisation trend, no, I would say globalisation makes life for European companies more difficult, largely because of the competition Asia poses. There are more products coming onto the European market than leaving it. That's a fact. And in the future, this situation will get even worse.

What is your favourite aspect of working in the tape business?

It's exciting. If you compare it with other industries, everyone knows everyone more or less. There's a lot of innovation in the market, and this was the driving force for me when I was working at ExxonMobil: developing new products and bringing them to customers. Seeing how new products fare in the market and creating success for your company. I love the international aspect of the business: travelling, meeting people from other countries and dealing in the cross-cultural tape markets which are similar and also very different. I have never been focussed on any one market; my experience has been completely international. And working within Asia was also a different, interesting experience. I've learned a lot.

What do you think has been the secret of your success? Of ExxonMobil's success?

The secret of my success has been my passion for the tape industry. My experience at ExxonMobil comprised my entire understanding of the tape industry, because we had so many resources there, and I learned a lot. Usually people join large companies such as ExxonMobil straight from university; they learn to do things one way and stay that way. They present products to customers, and the customers may not understand them or even want them. They may not understand how the customer thinks.

My experience was different at ExxonMobil. I had the passion and the resources so I could develop good products and deliver them to market. But I always have been aware of my tape industry background. In my heart, I have always been a tape man. I was never a typical employee of the petrochemical industry. I had no problem with the culture – I adapted very well. They taught me well; they treated me well. I liked it a lot, and this also gave me the possibility to innovate and to work with clients successfully. And my wife, who kept everything so well organised at home with our family, was also one of my secret weapons. She took a lot of pressure off long hours of work, to which you don't mind committing yourself if you enjoy it and if you see something in it.

What do you think has been the most important innovation of the European tape industry in recent years?

For the large volume tapes, the most important innovation has been hot melt technology. That means you can coat an adhesive on a backing like OPP film without any release of solvents or water or anything else. You heat it up, you coat it and it cools down, and it's done. This especially in Europe. The move to hot melt systems is catching on in Asia only now. But then there have been many other innovations like curable adhesives (UV- and EB- for both rubber and acrylic systems), but these technologies are intended more for specialty tapes.

In which direction do you see the tape market moving in the future? Where will it be in 10 years? 20 years?

Who has an immediate answer to this? This is always an interesting question. What certainly will happen is that Asian production will continue to grow much faster than that of Europe and America. You could even think of a scenario in which in ten or twenty years, ordinary packaging tape, except for small quantities in Europe, will be produced in Asia almost exclusively. According to this scenario, companies will think that it is too expensive to produce cheap tapes in Europe.

Europe will focus on producing specialty tapes, because they require considerable R&D resources for which they are willing to pay. Europe and the U.S. are strong in this area. In terms of product types, I think that hot melt technology will probably overtake solvent technology when it comes to investment in the next generation of machinery and production facilities. Most companies will try to get rid of solvent technology wherever possible for financial, environmental and safety reasons. This is another trend.

Do you see the European tape industry consolidating into a few large tape producers in the future?

This is what we at ExxonMobil were always waiting for; that there would be many fewer, large producers with whom we would have to deal. But I don't think this is ever going to happen. The largest tape producer in Europe (~70%), Italy is home to about 30 tape producers, and of those producers over the last ten to fifteen years, the market has been waiting for half of them to go out of business or go bankrupt, and none of them have. Recently one company closed its doors – that's it. There's consolidation going on, but there are still many small tape producers with low-cost production that will survive.

Do you think the Asia Pacific region will continue with 55% of global production volume? And the Americas and Europe together around 45% of production volume?

I think the Asia Pacific region's production will grow in the future – to much more than 50%. The Americas and Europe will continue to produce about the same volume each, but the Asian piece of the cake will grow. It should be noted that it is difficult to obtain reliable production figures from the few hundred tape companies located in China. The above percentages are based on data collected by ExxonMobil, and these are the most accurate figures we have at the moment. Asia's figures could well be higher already, mainly because of China.

Do you agree that tape production in industrialised regions will continue to grow in line with GDP, while that of the Asia Pacific region (including China), will exceed GDP?

Yes, growth in China's GDP is something like 10%, and the tape industry even more. Tape production in the Americans and Europe will grow in line with GDP.

What will the annual global production growth rate be?

5% seems realistic, taking into account 3–4% in Europe and the Americas and 7–10% in Asia.

Do you think packaging tape will continue to represent the bulk of tape production volume in Europe in the future? Then masking tape?

Yes, this will be the case for all regions in the world.

Do you think solvent technology primarily based on natural rubber (and/or acrylics in the case of specialty tapes) will continue to be the most-used coating technology in Europe with 2.9 billion square meters (52% of total production in Europe)?

No, I don't think so. In the production of packaging tape, solvent technology will be replaced by hot melt-. This gradual process is underway, although very slowly. Currently in the production of packaging tape, about 40% utilises hot melt, 45% solvent and 15% water-based systems. Solvent-based acrylics for speciality tapes will continue, because there are many end-users who cannot use solvent-free systems. Radiation-curable technology products (UV and EB) will also gradually replace existing solvent-based acrylics.

So use of solvent technology will greatly decrease but not entirely. But solvent technology is only a big factor in Europe, not in Asia. Historically in Asia, 70–80% of production has been water-based; in the U.S., 60–70% has been hot melt; and in Europe, most production has been solvent-based. Surprising or not? Three different regions, three different key technologies. As I said, solvent will be phased out over time because of the environmental and safety threats it poses.

What is your view on the use of hot melt technology as related to the globally limited SIS supply in 2005 and the first half of 2006, as well as feedstock supply constraints in 2006? Do you think natural-rubber-based solvent coating will continue to fill the gap in Europe?

If that happens, yes. You have those companies which make natural-rubber, solvent-based tapes, and they keep their lines working. They have their hot melt and water-based lines and keep these open too. All large and medium-sized companies utilise all three technologies but focus on one.

All I can say is that this SIS supply problem comes up every 5–7 years, and in most cases it's related to the natural rubber crisis – if the natural rubber price goes up or the supply runs short. Tire companies are the biggest users globally. They start to buy isoprene; this means that the isoprene producers in Russia prefer to sell polyisoprene rather than isoprene for SIS. Consumption of SIS has not gone down recently, but the market for natural rubber has sufficient supply and the price is not low but of a satisfactory level. And so there's sufficient isoprene on the market for SIS producers at the moment.

Do you see raw materials availability on a global level characterised as a balanced supply-demand situation in the future? And specifically for Europe?

It will be very much a balanced supply-demand situation. What will be a challenge in the future is to procure raw materials for tackifier resins, because they are produced from the steam cracking of crude oil, and as companies increasingly tend to use gas, fewer crackers processing crude oil will not be sufficient in delivering the needed raw materials any longer.

Especially in Europe, Shell in the Netherlands is one of the major suppliers of raw materials for making resins, and it announced that it is shutting its Rotterdam plant down next year, and we need to see how this will affect the market. In Asia there is growth, and they may profit from this situation. On the other hand, the rest of the players are global companies and they buy their raw materials all over the world. Transportation costs are not really an issue anymore (for example, between Europe and Asia).

But finding the raw materials when you need them might be an issue in the future, although I believe there won't be any real shortages. From time to time the market may experience a shortage crisis such as SIS – although maybe not as new capacities have been built up in Asia. But ultimately I think the supply-demand situation for raw materials will remain balanced. The above problem may not happen again.

In your view, how important is the exchange rate of the (currently weak) U.S. dollar versus other currencies important to your business and the European tape industry in general?

Yes, it's important and currently in favour of Asia again, because the market in Asia is based on the American dollar. This makes imports for us cheaper and exports more expensive and therefore more difficult for European tape producers to render. You can already see how difficult it is for us to export to the U.S. The weak dollar of the last year has had a big impact on European trade. Trade with the Middle East, Eastern Europe and Russia has decreased because of the rate of the euro against the dollar. Now Europe is buying more from Asia than ever before because of the strong euro. So this has had a negative effect on the European tape industry.

What do you think are the implications of REACH (and any other environmental legislation) on ExxonMobil? On the tape industry in general? How often did you deal with REACH and other legislation in your daily work?

This affected my former employer and continues to, because it involves spending a lot of money on registering all the products. In terms of the tape industry: for the producers of volume tapes such as packaging tapes and masking tape, it's not a problem because they get their products registered through their raw materials suppliers, and the tapes themselves don't need to be registered.

It is more difficult for specialty tape producers who utilise many ingredients, including ingredients from outside Europe, even in small amounts. It can be difficult, because they may no longer be able to obtain the ingredients if suppliers decide not to produce them or register them anymore. In these cases, the specialty tape producers would be responsible for registering the ingredients themselves, with perhaps grave consequences to companies, products and formulations. This issue mainly concerns specialty tape producers, but these also include large companies such as Nitto, tesa, 3M, etc.

In your view, what will be the European tape industry's greatest challenge in the future?

In addition to complying with current and future legislation, the greatest challenge of each tape company will be remaining competitive in a global market. That will be a great, great challenge. Updating their businesses to find ways to be competitive with Asia, for one. The problem is with packaging tapes, volume tapes, masking tapes – not all masking tapes but the large volume production of masking tapes – you don't necessarily have any significant market advantage because of your large quantities. So the only thing you can do to distinguish yourself from the competition is concentrate on offering better service. Consistency of product is still an advantage of some companies. This and simply superior service.

In today's tape market, you are competing with any one of thousands of companies globally – not only Chinese, but Taiwanese, Indonesian…. The two huge Asian tape producers, one in Taiwan which makes more than a billion square metres a year, and one in Indonesia which is not much smaller, export to the rest of Asia, the Americas and Europe. Those companies go, go, go – that's why it may not be worth it anymore to produce all of Europe's packaging tape within Europe. European (or any) companies contact Asian companies which solely supply jumbo tape (rolls coated at up to 2-metre widths) to these European-based companies, which could become mere slitters, finishing the tape by slitting it into various sizes. It's not happening this way at present but there is a fear within the European market that this could happen in the future.

If you could change one thing or wish one thing for the tape business in general, what would that be?

I would wish for the European tape industry that for once tape producers would reach a position in which they would maintain higher prices independent of each other without compromising competition. So that one company wouldn't do this just to attract business, but that industry-wide prices would be of an acceptable level for the good of the entire industry.

"Downstream from the tape producers, there is so much money made, from the distributors to the end-users, and the tape producers deserve a larger piece of the pie."

I'm not saying they should actually agree on prices, because of course this is a free market. But let me utilise the example of fuel stations. If one company feels the need to increase its prices, within 24 hours all the other locations follow suit. No one station tries to take advantage of this by not changing its prices, up or down. It will probably never happen, but if the managers of the tape industry could independently accept that they would like their prices to change, we would see higher margins for the producers, and it wouldn't be so hard to survive. Downstream from the tape producers, there is so much money made, from the distributors to the end-users, and the tape producers deserve a larger piece of the pie.

What has your relationship with Afera been like?

I became involved with Afera after joining Exxon in 1981. At that time I joined Afera's Technical Committee directly. It was not so easy. Back then there weren't so many suppliers involved with Afera – mainly tape producers. And then in 1996, I became Chairman of the TC. This was very special, not because I wasn't working for a tape producer but a raw materials supplier, rather that I had ten years' background in tapes, I was elected Chairman, and I am still that today after 12 years. I've spent a lot of time on Afera, because I love the organisation and the industry, and ExxonMobil allowed me the freedom to do this. It's an ideal way to stay connected to the larger business-scope of tape and to meet everyone involved in it.

In your view, what have been the most important moments, or milestones, in Afera's history?

One key milestone: Afera was managed by a French regional rubber association, and its management was too clubby, inefficient, and unprofessional. Then in 1998, Afera was moved to Lejeune Association Management to take on a more professional management structure, and from there, it took on the role of working with the outside world in a more professional way. Advertising, Committees – all of its initiatives have a much more professional feel now and are better-controlled. And this works very, very well. From day one, this was a big positive change in Afera´s history. Afera probably would have ceased to exist if this move had not been pushed forward at that time, mainly by the Members of the Steering Committee. I was also involved in initiating this move.

Another milestone: We launched the Technical Seminar, which is held every second year; also the Tape College, which is held in alternating years with the TS. And most recently, at the end of last year, Afera achieved ISO certification of three key test methods. This was a very big move for global TM harmonisation in an industry which is international while also fragmented. Thickness was approved as an EN method in January 2008 and is on its way to ISO certification too.

Other milestones include the improvement of the structure and size of the Annual Conference, the number and quality of papers presented there, … this combination of a sizable working programme with an appropriate leisure programme, additional documentation … L.A.M. has made it a very worthwhile event to attend. The number of participants grows every year. There are also many small milestones, but these are the key ones.

Has Afera benefited ExxonMobil directly in any specific way?

It has, yes, because the Afera meetings and Conferences are a very good platform on which to meet your customers, and this is certainly a big advantage. It also bolsters the reputation of Member Companies by exposure in the Association's magazine and on its website.

Afera also offers the opportunity to present papers at Afera conferences, like what ExxonMobil has been doing every year for more than 10 years now with its much-anticipated market analysis paper. Until Afera's recent market surveys, this was the only reliable data we had on the tape market, a market study which we've been conducting anonymously through ExxonMobil for more than 20 years. So this is good for Afera but also benefits our company by bolstering its image as a major player in the industry.

Of course your company has also benefited Afera too. Of course, I have given my time as an ExxonMobil employee to Afera – countless hours in fact. There were the many times I went to the U.S., often for Afera-PSTC matters, combining this with ExxonMobil business matters in the same area. Always paid for on company expenses, so of course Afera benefited from this. The contacts and experience I have through ExxonMobil, of course, have been utilised for Afera´s benefit, but that's why I am here. It has been a symbiotic relationship.

What do you think of Afera's possible expansion of its geographical borders to accommodate one or more regions such as the Middle East, Africa and/or India?

I am very much in favour of Afera's expansion to the Middle East, Africa and even India, but there are not too many players for which it would make sense to become Members of Afera. And my fear is that because of the distance, even if you expand, you won't be able to place enough resources on that. You can expand, recruit new members, inform them on what's going on – but I am not sure that anything significant will come out of it.

We see already how difficult it is to expand to Eastern Europe: They are all interested, but nobody shows up to any of the meetings. They don't want to spend the money. Same as Turkey: They tried very hard to recruit members for Afera, and there was interest and some joined, but nothing really happened in the end. As soon as there's money involved, interest often diminishes. And in the Middle East, there are very few tape companies. China is too far away, you have a language barrier and they have their own adhesives association already.

I think the only thing we can do with China and Taiwan is try to develop a relationship with them such as that which we have with the PSTC and JATMA. We need to build up that relationship so we can co-operate. But to expand Afera, it should be limited to the Middle East, Africa, Eastern Europe and maybe Russia. I am not saying what I would like to be saying but what I believe to be realistic. Generically I am in favour of expansion, but there will be many realistic obstacles to overcome. We could also say that we might expand to the U.S., but they have their own association, language and education.

What has Afera done for the tape industry?

All you have to do is to look at its daily work – on test methods, the Technical Seminar, the Tape College, the papers which are selected for presentation at the events, the work on REACH. Afera has spent a lot of money on consultants for the working groups for REACH alone over the past five years. Because of upcoming regulatory issues, Afera will play a great role in the industry with regard to these. Lobbying in Brussels – it's all for the tape industry. That's a big advantage for the industry.

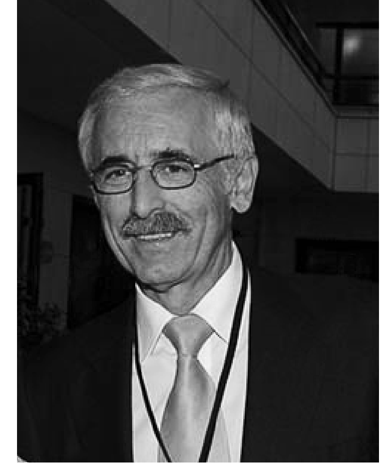
Afera, the PSTC and JATMA have agreed to form a World Tape Forum. What is your view on this?

I think it's basically a good thing to do. The challenge that I see is that each organisation is a leader in itself. I worked for an American company for 25 years, and it is a fact that whenever an international group comes together, the Americans see themselves as the natural leaders, by culture and education. So my reservation is that a World Tape Council would be very much dominated by the U.S. I've worked very well with the PSTC for many years. I suppose it depends on the people who become involved in this initiative – if they individually have international experience and outlook. As an industry insider, I have been working with the PSTC on test methods for the last 15 years, and they like to get in there and take the lead on things.

A World Tape Council is a good idea, and it should build upon the co-operation we already have. It should improve this co-operation, and the input and activities should be balanced among the members. I think the organisation should act as a co-ordination group for global matters, but the real work would then be done in the regions. It could not work any differently. It's a good idea, but it needs to be worked through very well to make it balanced among the members.

AFERA CAPTAINS OF INDUSTRY INTERVIEW SERIES

PETER RAMBUSCH: AFERA STEERING COMMITTEE REPRESENTATIVE (CENTRAL EUROPE), OWNER & CHAIRMAN OF CERTOPLAST



How did you start working in the self adhesive tape business?

I started in 1976 with 3M as Marketing & Sales manager in the tape business. Afterwards I worked with Coroplast for 10 years as Managing Director, and since 1991 I've been the co-owner of certoplast.

What is your educational background?

First I was an officer in the army. Then I studied marketing and advertising in Hamburg, and then I went to Berlin to study economics.

So you had no idea you would end up working for the self adhesive tape business?

No, in Berlin I had a job in advertising with Kaiser Aluminum dealing in selling high-voltage cables for approximately five years between my two courses of study.

So how did you make the crossover to the tape business?

That's a funny story. A 3M guy noticed my technical experience when I was at Kaiser Aluminum and later asked me if I wanted to join 3M to work on adhesives and tapes, so I did. At the time, I wasn't quite finished studying for my economics degree in Berlin. I had already started working for 3M in Neuss, and I had to fly back to Berlin to sit for my last examination.

You've known the tape business since 1976. What changes have you seen take place?

I've seen a lot of changes. First, the demands upon tape are more sophisticated now than ever. Back then, market demands centred mainly on electrical tapes made of PVC. Specifically at 3M we had some specialty tapes such as acrylic foam and other similar products.

Now we offer many more specialty tapes: Automotive to affix license plates and chrome siding/detailing. Household double-sided tapes to mount hooks and mirrors on walls. And higher technology tapes for cable harnesses (the electrical roads to transport electrical energy inside cars). In the latter segment we are facing higher standards, such as increasing temperatures up to 150°C and even higher, noise reduction and protection against different media such as oil, diesel, gasoline and so on. We therefore need a highly sophisticated tape with UV-cured acrylic hot melt.

So there's a more pronounced technical aspect to tapes, and the demand for these is higher. And the glue has changed. At that time we only had glue based on solvents and water-based acrylics. Hot melt technology was virtually unknown.

Do you see the changes as positive?

Yes, absolutely. For the tape market, more submarkets are captured with the increased specialisation of tapes. And we can solve more of our customers' problems. The change from solvent to hot melt is absolutely qualitative to see: decreased pollution of the environment and less investment in equipment because you don't have to recapture the solvent. certoplast has not used solvent for 13 years now – only hot melt and water-based acrylics. I took the company over 17 years ago. The first four years we had some production using solvents, but then we phased that out in favour of the more modern technology of hot melt. Till now, we've had hot melt PSAs, UV-curing acrylics and water-borne acrylics, these three types.

Why did certoplast make the change to hot melt? Was it the pressure of (impending) environmental legislation?

To be honest, investment in hot melt equipment is significantly less expensive than that of solvent, because you do not need to recapture any solvent. This is a very expensive, energy-intensive process. So when at the crossroads of future production choices, we went for the new, more modern, less pollutive, less expensive option. Hot melt techniques and specifications are constantly increasing and improving in development. The high end at the moment is UV acrylics, such as hot melt.

What is your favourite aspect of working in the tape business?

The wide variety of usage by customers and product development directly with customers. Certoplast deals 70% with the automotive industry, so we are constantly modifying our products and developing new ones. And the global aspect of the business is very interesting. We set up a company in China four years ago. Tomorrow I leave for India to put a company representative in place, and we'll see how that goes. So I enjoy this business because it keeps you young.

“For the tape market, more submarkets are captured with the increased specialisation of tapes. And we can solve more of our customers' problems.”

It is also satisfying to know that my son will be my successor at certoplast. René Rambusch is currently finishing up his PhD in economics at university. He worked for a consulting group for years in Munich, and he speaks perfect Spanish and English. He'll finish his PhD in the second half of this year, and then we will decide if he'll join certoplast directly or if he'll go into production for a year. Currently he is a consultant, who sees everything from the outside-in. If he is running an SME like my company, he'll have to see things from inside-out as well.

What do you think has been the secret of your success? Of certoplast's success?

Our main success is that we are a middle-sized company, very flexible, and we put emphasis in R&D and meet the demands of our customers very quickly and efficiently with solutions to their problems. If a medium-sized company is a good run, it is faster and more flexible than a multinational. Absolutely. Decision-making is much faster. If I receive news from the market, and I think it's favourable, I can decide immediately to refocus all R&D on that particular area. If a sales manager of a multinational receives the same news, he has a large bureaucracy to push through, writing many memos, briefs and reports, to produce the same result in (re)positioning, if at all. So flexibility as a medium-sized company is key to certoplast's success.

What do you think has been the most important innovation of the European tape industry in recent years?

The change to using hot melt technology in the production of all different types of PSAs on the market.

In which direction do you see the tape market moving in the future? Where will it be in 10 years? 20 years?

I think the tape market will expand, demand will grow and the industry will develop the solutions to meet increasing demand. The tape industry is well capable of this. New demands will arise, and new solutions will be found. Let me give you one example: According to a new German environmental regulation, all roofs of buildings must be insulated on the interior to increase energy retention. This calls for the development of a new class of tapes – namely acrylics or UV acrylics to fill the gaps between two layers of film – to meet this requirement. This is a new demand for a high-tech tape driven by a market which has to conform to, among other factors, legislation.

Do you see the European tape industry consolidating into a few large tape producers in the future?

No and yes. This is a double-sided coin. In some areas, outfits will consolidate into large multinationals. This depends on the level of globalisation. If you have SMEs with good R&D and which mind their costs, this is a very, very good place to grow. With 52 employees in Germany, certoplast is a medium-sized company, and we act globally. We have a branch in China, where we have 14 employees. The company is well-organised, well-run and keeps its costs in line with those of multinationals. There is a market segment for SMEs. They just have to meet the challenge to stay cost-efficient and well-controlled with modern equipment and lean production. And then they'll have their part in the market.

Do you think the Asia Pacific region will continue with 55% of global production volume? And the Americas and Europe together around 45% of production volume?

It depends on the growth rate. Not only China – Asia is growing up to 10% a year – China's GDP about 8%. For example, Germany reduced its growth forecast from 2.3% to 1.8% – this is small growth. If Europe continues with this growth level, that will be considered small.

Do you agree that tape production in industrialised regions will continue to grow in line with GDP, while that of the Asia Pacific region (including China), will exceed GDP?

Yes, maybe more so in the future. I think a lot of American and European companies are moving to China. Look at Ford, General Motors, Audi and VW – they have production lines in China. At the moment, they produce mainly for the Chinese market. I know that GM produces engines for the Canadian market in China. So in that case, its export is in addition to its production for the domestic market, so growth is higher. And don't forget India. India is at a starting point in industrialisation. To enter this type of market, we aren't currently setting up a local company but have established a company representative. And like we do in Germany and the rest of Europe, we respond to our customers' needs. For example, Tyco produces harnesses in India, and we deliver the tape for these from either Germany or China.

Do you worry about replication of your tape products in the Chinese and Indian markets?

No, you have to produce a product which has a competitive advantage – is specialised and has characteristics which are not so easily reproduced. In China, one of our big customers discontinued buying our product in favour of that of a local supplier nearly a year ago. But now they're back. Our product is simply of a superior design and quality and we offer flexibility and better service. The worst thing you can do is enter into a price war with local producers. You'll lose every time. You have to focus on offering superior quality, service, development – then you'll carve out a good market share.

Do you think packaging tape will continue to represent the bulk of tape production volume in Europe in the future? Then masking tape?

We don't produce packaging tape, but in my opinion it will go two ways: The cheap ones are often produced in Asia, but the high-tech tapes will have their future in Europe. The cheapest tapes will be produced all over the world.

Do you think solvent technology primarily based on natural rubber (and/or acrylics in the case of specialty tapes) will continue to be the most-used coating technology in Europe with 2.9 billion square meters (52% of total production in Europe)?

The use of solvent technology will decrease in the future. It will still be used for some special applications in the coming years, but hot melt technology will become more widely used.

What is your view on the use of hot melt technology as related to the globally limited SIS supply in 2005 and the first half of 2006, as well as feedstock supply constraints in 2006? Do you think natural-rubber-based solvent coating will continue to fill the gap in Europe?

I would say no. The SIS problem will increase, because all of our raw materials are limited. Therefore we have to find alternative solutions. Maybe in the future SBS may be better, I don't know. At the moment you cannot use SBS for our specialty tapes; we have to use SIS. Oil is expensive, so SIS will be expensive. We all have to face higher costs. That means we have to be more efficient in utilising materials: Maybe better adhesive or better tack, and lower grammar (the amount of glue put on the tape), and then you can compare the price increase. But that is not only in terms of SIS.

On the other hand, you can use UV acrylics. These are hot melt but not based on SIS. At the moment, producing UV acrylics is more expensive, but maybe if the demand increases, the costs will decrease in this area. So I think we will continue using hot melt, because if you go back to solvents, you'll need new coaters, and you'll have to recapture the solvent, and that means higher investment costs. If you have an old solvent coater, you can reengineer it, but a new one for this technology, as opposed to the equipment required for hot melt, is not so easy to come by.

Do you see raw materials availability on a global level characterised as a balanced supply-demand situation in the future?

Yes, we will face every part of this problem, and I think we won't be seeing the very low prices we had years ago for raw materials again. The truth is we have to face increasing prices, because obviously the earth's oil supply is limited. We'll have to pay more for the materials on offer, or we'll have to develop better alternative technologies, as I said before, so that we can reduce the amount of glue we put on tape. If this glue has a higher tack/adhesive, then we can save a little on the amount of glue, thus saving on costs.

In your view, how important in the exchange rate of the (currently weak) U.S. dollar versus other currencies important to your business and the European tape industry in general?

This is a difficult question, because there is more than one answer. If you are an exporting country – Germany, for example – your products produced in Germany will be more expensive. That's a fact, but the other side of the coin is if you buy raw materials on a dollar basis, then you save money. So there are two bases of the raw material price. If the dollar is as weak as it is now, perhaps prices will balance themselves out, but if the dollar grows stronger, we'll run into problems, as raw materials will become too expensive.

In my opinion, at the moment the possible increase of oil prices for Europe and specifically Germany would be offset by the low dollar. We pay 50% less, only according to the rate of exchange of the dollar. With an exchange rate of 1 to 1.55 or more, you save more than 50%, but how long will this go on? Oil prices won't drop – we're only saving because of the exchange rate. If the dollar were to become stronger, raw materials would become more expensive, but our products would become more competitive on the world market. So currencies do indeed affect our business.

What do you think are the implications of REACH (and any other environmental legislation) on certoplast? On the tape industry in general? How often do you deal with REACH and other legislation in your daily work?

For the last five years, I have been dealing with environmental legislation issues on a daily basis in my business. This is because I have been working within our (German) industry association IVK and Afera on these issues. On the one hand, REACH is a good thing, because it strives to preserve the environment and protect human

"… we have to switch to concentrating on educating the next generation as best as we can. I would like to see in all of Europe, but especially in Germany, quality education that leads to jobs that stay in Europe, thereby improving the 'brain drain' situation we have now."

health. On the other hand, how does it help if Europe is doing this and the rest of the world isn't? In that case, the European Chemicals Policy is a disadvantage, because it is an indirect restriction on our competitiveness against Asia and the U.S., wherever you are doing business in the world. I have conflicting feelings about this.

Is the U.S. getting any closer to similarly strict legislation?

The U.S. certainly has fewer regulations than we do in Europe. But the U.S. is a country that doesn't live on exports. The U.S. exports less than Europe does, so REACH isn't a problem for them. If you don't import or export to Europe, you don't have to deal with REACH. REACH only affects formulations that are imported – these must be registered under REACH. Tapes are considered articles which can be imported and exported without restriction. That means if we produce our own adhesives or import the materials with which to produce them, they have to be registered – that is, each of the ingredients.

In your view, what will be the European tape industry's greatest challenge in the future?

1– Dealing with the raw materials situation: limited quantities, higher prices. As in the example of the decreasing supply of SIS. Finding fixed energy costs, because our production lines are very dependent upon energy costs. *2*– Reducing fixed and variable costs. Otherwise we won't be competitive within the Asian market, because their labour costs, taxes and environmental costs are lower than they are here. *3*– Increasing emphasis in R&D to make better products, using raw materials more efficiently. And *4*– continuing to increase the protection of our environment. We will face all of these issues in the coming years.

If you could change one thing or wish one thing for certoplast or for the tape business in general, what would that be?

Personally, I would have started my own business ten years earlier. As for the tape industry, we have to switch to concentrating on educating the next generation as best as we can. I would like to see in all of Europe, but especially in Germany, quality education that leads to jobs that stay in Europe, thereby improving the 'brain drain' situation we have now.

What has your relationship with Afera been like?

My first meeting with Afera was in 1983 in Vienna. Then two or three years later, I became a Member of the Steering Committee. Since then, I have remained a SC Member, have been Afera President two times, and I was one of the main initiators in moving Afera's Secretariat from Paris to Lejeune Association Management in The Hague. This together with Emilio Angeli and Lutz Jacob. Prior to the move, we had noticed that Afera was not thriving in terms of its Membership numbers or level of funds, so we researched the causes and found that the organisation as it was managed in France was not optimal. So we transferred Afera to Lejeune's management, and since then Afera has grown in its success year upon year. The number of Membership benefits has certainly multiplied.

In your view, what have been the most important moments, or milestones, in Afera's history?

Apart from Afera's move to The Hague in 1998, working on test methods to achieve European and global harmonisation. This program has really expanded since Afera has partnered with L.A.M. Also, the launching of Afera's Technical Seminar and the Tape College, both events which are held every other year. Of course, the next important milestone for Afera will be held in October 2008: the 50th Anniversary Annual Conference in Florence.

Has Afera benefited certoplast directly in any specific way?

As I mentioned before, certoplast is an SME. To buy knowledge, to know how to comply with regulations, you have to spend a lot of time and money. If you are a Member of Afera, you can get all these forms of information directly from the Association, and it greatly benefits you in your daily work.

What do you think of Afera's possible expansion of its geographical borders to accommodate one or more regions such as the Middle East, Africa and/or India?

"The optimal scenario in my opinion is to install regional branches of Afera to serve the local markets – they know the local mentality and rules – and then to co-operate directly with these associations in terms of technical data, specifications and test methods."

We have to face this issue. We have to try to co-operate with associations which already exist, such as the PSTC in the U.S. and JATMA in Japan. We are currently trying to find out what exists in China. There is an adhesives association there but not one directly focussed on tape. But maybe under this umbrella there is a tape association too. We are talking with the Middle East, Turkey, Dubai and the Emirates, and we want to talk to the Indians.

I think to pursue globalisation in an effective manner, it is very important to have: *1*– Guidelines. And if an association like Afera were established in every geographic area of the industry, we would be more likely to achieve the acceptance of guidelines. *2*– Test methods, so that all people would have to follow these test methods. *3*– Standards of quality. *4*– Better technology, so that competition in the future is not 'price tag competition', but it's about who has a better product, who has a better service.

To obtain these, we have to grow to co-operate with other organisations, and I think this is a realistic aspiration for Afera. We've already forged close relationships with the PSTC and JATMA. I don't see any reason why we can't do this on a new level in parts of the world where the market is expanding. The optimal scenario in my opinion is to install regional branches of Afera to serve the local markets – they know the local mentality and rules – and then to co-operate directly with these associations in terms of technical data, specifications and test methods. We must do this for better and earlier competition – honest competition.

Afera, the PSTC and JATMA have agreed to form a 'World Tape Council'. What is your view on this?

I would call it a 'world tape forum' in which these independent tape organisations work together. Using the word 'council' – I don't think that will ever be realised. That would be like forming a world government. Obviously, we are very far away from that reality. But if we are different independent organisations in all these countries and regions, and we work together within a forum two or three times a year, then we'll be moving in the right direction.

How long to you plan to stay directly involved with Afera?

After the election next year, I will stay on for another two years, and then it is my hope that my son will take over my position on the SC.

AFERA CAPTAINS OF INDUSTRY INTERVIEW SERIES

ANTONIO RIGHETTI: FOUNDER & CEO OF NAR

How did you start working in the self adhesive tape business?

In 1960, at 24 years old, I started working in a company that both traded and printed self adhesive tapes.

How has the tape business changed since you first started working?

As in all industrial sectors, there have certainly been many changes. Unfortunately, I cannot say that they have always been favourable, but generally they have not been too negative. I would say that besides production processes, the one aspect of the business that has really evolved has been products distribution systems.

Do you see the changes as positive?

I consider them generally positive. However, this opinion is based on the assumption that a company's projections are mid-to-long-term, as they are catalysts for evolution and improvement.

What is your favourite aspect of working in the tape business?

The evolving dynamics of production technologies.

What do you think has been the secret of your success?

Of Nar's success? Perseverance, enthusiasm and the capability of involving our team members.

What do you think has been the most important innovation of the tape industry?

The most important innovation has surely been the possibility of making use of all the adhesives technologies in recent years. These were already well-known but not available with the same facility and flexibility as in recent years.

In which direction do you see the tape market moving in the future? Where will it be in 10 years? 20 years?

It is difficult to forecast over such a long period. In the short run, the topics discussed will include alternative energies and new materials. However, I do not see important changes coming about in the next five years.

Do you think the Asia Pacific region will continue with over half of global production volume of adhesives? And the Americas and Europe together with just under half of production volume?

I think there will be a greater balance; I mean that the Americas and Europe will try to curb the Asian expansion rate.

Do you agree that tape production in industrialised regions will continue to grow in line with GDP, while that of the Asia Pacific regions (incl. China), will exceed GDP?

One may agree with this assertion. On the other hand, in Asia's GDP the industrial component is higher than that in Europe's GDP.

Do you see the annual global production rate of around 5% continuing at that level?

Yes, it is now possible to forecast this, even though the estimate could be altered by destabilisation elements, such as socio-political factors in some countries.

Do you think packaging tape will continue to represent the bulk of tape production volume in Europe in the future?

Certainly. I do not see advantageous alternatives to the use of the packaging self adhesive tape. This will continue to represent the predominant production volume in the years to come.

Do you think solvent technology primarily based on natural rubber (and/or acrylics in case of specialty tapes) will continue to be the most-used coating technology in Europe with 2.9 billion square meters (52% of the total production in Europe)?

"An unbalanced euro-dollar exchange rate also damages our sector. I confirm the great importance the exchange rate holds and therefore the major attention which should be paid to this factor."

With the current balances between cost levels and the installed production capacity, I think this will still be possible for a few years. Anyway, the solvent coating plants generally work close to their maximum capacity. A technical substitution or a potentially higher market request could be met mainly with hot melt or water-based installations.

What is your view on the use of hot melt technology as related to the globally-limited SIS supply in 2005 and the first half of 2006, as well as feedstock supply constraints in 2006? Do you think natural-rubber-based solvent coating will continue to fill the gap in Europe?

The crisis of SIS availability has been overcome. Anyhow, this negative situation which moreover was sufficiently compensated by the other technologies in 2005–2006, could recur for SIS as well as for other raw materials. Capacity and flexibility in using the various technologies will therefore become increasingly important.

Do you see raw materials availability on a global level characterised as a balanced supply-demand situation in the future?

I think so, as this is naturally desirable.

In your view, how important is the exchange rate of the U.S. dollar versus other currencies to your business and the European tape industry in general?

An unbalanced euro-dollar exchange rate also damages our sector. I confirm the great importance the exchange rate holds and therefore the major attention which should be paid to this factor.

“The most demanding challenge will be to produce well at competitive costs, for instance compared to Asian costs, while maintaining the European quality level of products and services.”

What do you think are the implications of REACH (and any other environmental legislation) on the European tape industry?

I certainly agree on legislation that involves the European states in such an important, sensitive issue. The adhesive tape sector could be particularly damaged, in some cases, by extra-European competition which should be made to conform to common standards.

In your view, what will be the European tape industry's greatest challenge in the future?

The most demanding challenge will be to produce well at competitive costs, for instance compared to Asian costs, while maintaining the European quality level of products and services.

If you could change one thing or wish one thing for the tape business in general, what would that be?

My wish would be to have significant, harmonised regulations amongst the manufacturing companies, and in this Afera could actively contribute.

What has your relationship with Afera been like?

Excellent. My company has been a Member of Afera for a very long time.

Has Afera benefited your company in any specific way?

It has definitely contributed to improving industry culture, technique and knowledge, as well as widening international outlook, which is also one of Nar's traits.

In your view, what has Afera done for the tape industry?

It has already done a great deal. In my opinion, greater collaboration of all the self adhesive tape manufacturing companies would institutionally improve and strengthen the tape sector.

What are your views on the formation of a World Tape Forum?

It should be the greatest goal of the European tape industry. Globalisation is a current topic and a World Tape Forum would certainly add an array of advantages to the global tape industry.