

RETURN

RECYCLING NEWS FROM TOMRA

Spring/Summer 2000

ULTIMA one-way RVMs
now even better

Introducing TRIO

*An innovative approach to solving the
space limitations of small premises*

INNOVATION

Research and Development at TOMRA



Helping the World Recycle!

Editor's corner

New name, new direction

This issue represents a new direction for TOMRA's corporate newsletter, both in name and in format. The new name RETURN appropriately captures, we believe, the focus of the newsletter and TOMRA's commitment to recycling. This issue also marks the introduction of two new regular features: TOMRA market spotlight, an in-depth look at a particular market in which TOMRA is represented; and, Living our values, a section that will highlight employees who exemplify TOMRA's core values. Each issue will in addition have one of TOMRA's five core values as its general theme, and for this issue we have focused on innovation. We have brought together therefore a variety of articles that take a look at innovation in practice at TOMRA.

We hope you like the changes. As always, we welcome any thoughts or suggestions that will help make RETURN the best it can be.

RETURN is published twice a year, spring/summer and autumn/winter, and is distributed to TOMRA's employees and customers worldwide. An electronic version is also available on TOMRA's website: www.tomra.com.

Publisher: Tomra Systems ASA, Asker, Norway.

Editorial team: Carol Quinn, Andrew Young.

Layout: Nina Jacobsen.

Printed by: Grafia Kommunikasjon AS

Printed copies: 5000

Questions about RETURN?

Contact:

Carol Quinn

Tomra Europe AS

Drengsrudhagen 2

P.O. Box 278

1372 Asker

Norway

Telephone: +47 66 79 92 03

E-mail: carol.quinn@tomra.no

TEMCO 2000 *basks in the beauty of Barcelona*

The beautiful Catalan city of Barcelona, with its innovative architecture and spirit, provided the perfect backdrop for the focus of this year's TEMCO (Tomra Europe Management Conference)— "Growth Through Innovation." This spirit served as an inspiration to the 60 Tomra leaders from 16 countries attending the conference as they worked on developing Tomra Europe's growth targets and strategies for the beginning of the new millennium.

The TEMCO participants get ready to test their sea legs in the "TOMRA Innovation Cup" at Port Olympic.



GROWTH THROUGH INNOVATION

TOMRA managers get down to the business of preparing for growth.



Tomra Europe's president, Morthen Johannessen, presents Team Norway with the well-deserved 1999 Sales Award at the official TEMCO dinner.



Management perspectives

The new millennium has arrived. And for the business units within the Tomra Group, it has brought with it good tidings of continued growth and prosperity. First quarter results for the Group show that our operating revenues have gone up 34 percent compared to the same period last year, going from 436 to 583 MNOK. Our profit before tax increased by 27 percent to 94 MNOK, while our equity ratio was maintained at the very positive level of 66 percent. As we step into the 21st century, TOMRA is well prepared to capitalize on the opportunities that lie ahead.

In this issue of RETURN you will read about some of these opportunities. Opportunities that have been created by the hard work, personal initiative and innovation demonstrated by TOMRA employees around the world. Innovation at TOMRA is the spark that powers our company's success, and has led to the dramatic growth we have experienced over the years. The following pages take a look at some examples of how our corporate culture of nurturing innovation manifests itself throughout the organization.

TOMRA innovation has certainly been a major factor behind our considerable growth in recent years – a growth based on a fundamental adherence to our corporate vision: being “the world's No. 1 provider of

solutions that make it attractive for people to return packaging for reuse and recycling.” By keeping this vision in focus, we have obtained significant growth both organically and through strategic acquisitions.

Our organic growth currently is being driven by our operations in North America, and in particular, California. Organic growth in California during the first quarter rose by 153 percent, resulting from the statewide launch of our rePLANET centers. Growth in Europe remains steady, with the German market continuing its strong performance of last year with a 51 percent growth rate in the beginning months of 2000.

An important event impacting our growth potential in the years to come was the signing of a global supply agreement between TOMRA and the Dutch retail group, Royal Ahold, making TOMRA the exclusive provider of RVMs and related services for a period of three years. Royal Ahold operates more than 7,000 supermarkets, hypermarkets and specialty stores in over 25 countries around the world, serving more than 25 million consumers every week. This agreement provides potential revenues of at least 250 MNOK during the contract period and opens up new business opportunities with Royal Ahold in Europe, USA and Latin America.

On the acquisitions side, TOMRA acquired 50.5 percent of its Swiss distributor, Tomra AG, effective the beginning of January 2000. We welcome Tomra AG to the TOMRA family, and in recognition of this have provided a more in-depth look at Tomra AG and the Swiss market in the TOMRA Market Spotlight section in this issue. Another recent acquisition was that of CAMCO Recycling Inc., a materials processing company with operations in the province of Quebec, Canada. TOMRA's 50.5 percent stake in CAMCO represents our first significant investment in Canada and is part of an overall strategic expansion effort in this market. I would also like to send a warm welcome to our new colleagues in Canada.

The challenges facing the world in the 21st century are many, not the least of which is the collection and recycling of used consumer products. As a worldwide leader in automated recycling solutions and services, TOMRA is playing an integral part in this process. We look forward to providing innovative solutions that help to meet this challenge, and in doing so, also Helping the World Recycle!

*Erik Thorsen
President & CEO*



Push the yellow button! Göran Andersson, ICA Globen, shows off the TOMRA donation installation in his store.

ICA and TOMRA team up nationwide for the Red Cross in Sweden

Based on the success of a four-month pilot program using TOMRA RVMs to raise funds for the Red Cross in 24 ICA supermarkets in Sweden, ICA has decided to fully implement the program throughout the country. A three-year agreement for the nationwide fundraising program was signed on 19 October 1999 between ICA, Red Cross, and Tomra Systems AB.

The program works in the following way: after a customer deposits her containers in a TOMRA RVM, she is given the option of either keeping the deposit or donating it to the Red Cross by pressing one of two buttons on the machine. "The results of the pilot program were very positive," said Mr. Peter Wigstein, project manager of ICA public sponsoring, "and we were convinced that our customers appreciated this opportunity to help support such a worthy organization."

During the first four months of this year, approximately 500 TOMRA RVMs in 300 ICA stores have been upgraded with the software and additional yellow donation button which enable the system. The system is made possible via a modem hook-up between each machine and the local TOMRA headquarters. This allows TOMRA to centrally administrate the program on behalf of ICA and the Red Cross.

Up to now, over 700,000 SEK has been donated to the Red Cross through the program. The test project showed that about every tenth customer selects the option to donate, giving five percent of their refund value – without any special publicity efforts. In March, which was the first full month with all machines having been upgraded, a total of 217,000 SEK was donated!



Joining forces for a good cause (from left to right: Peter Wigstein, ICA; Charlotte Petri Gornitzka, Red Cross Sweden; and, Fred Norling, Tomra Systems AB).

For more information about fundraising through TOMRA RVMs, contact Lasse Nagell, Product Group Manager, Promotions, Tomra Europe AS, tel.: +47 66 79 92 02, E-mail: lasse.nagell@tomra.no.

Introducing TRIO

An innovative approach to solving the space limitations of small premises

The TRIO represents TOMRA's latest addition to the Minima family of RVMs, specially designed for small stores with a low volume of returned containers. What distinguishes TRIO from the other members of the Minima family is that it incorporates a newly developed sorting and stacking system within the machine, which can separate refillable containers onto one of three different trays – while taking up less than one square meter of floor space!

TRIO, which was developed by Tomra Systems OY in Finland, made its debut on the market in Germany in April 2000. Asko Pesonen, Managing Director of Tomra Systems OY, commented in his announcement of its release, "the TRIO is the result of our close contact with end customers, the Tomra Group network, and market research. I believe we have come up with an outstanding product which successfully addresses the needs of the marketplace, and nicely complements the product range available in the Minima family."

Whereas the other Minima machines are primarily designed to handle cans and non-refillable PET, TRIO was developed to provide a cost-effective way of handling the return of refillable containers in a minimum amount of space. For larger stores, refillable containers are typically collected behind the machine on a collection table or crate stacking system in the store's back-room. For smaller stores however, which have very little space available for the collection of returned beverage containers, the return of refillable bottles has presented a problem. TRIO's solution to this problem is a unique bottle collection trolley placed inside the machine. The trolley has three collection trays situated on different levels allowing for separation according to bottle type. The trolley is compact and easily maneuver-



able, and the two upper levels can be turned and locked in an upright position after emptying in order to give easy access to the bottles stored on the lower levels.

Says Ilkka Makijarvi, TRIO product manager, "the key characteristic of the TRIO is its flexibility. It is a free-standing machine which can easily be moved should a store wish to change its placement within the store. It hooks up to a standard 230V power outlet, and is available in two widths, 980 or 1180 mm, allowing it to fit easily into the standard distance between shelves. Among the many options available are the installation of a laser scanner for barcode reading, a high quality printer for couponing programs, and equipment enabling the bottle deposits to be donated to fund-raising campaigns."

*For further information about the TRIO reverse vending machine contact Ilkka Makijarvi
Tel.: +358 3 58 33 260;
E-mail: ilkka.makijarvi@tomrasystems.fi*





The new look for the ULTIMA one-way container RVMs ties in with the rest of the products in the ULTIMA family.

ULTIMA one-way RVMs *now even better*

The ULTIMA range of reverse vending machines for one-way containers (T-22, T-32, T-42 and T-62) has been one of TOMRA's most popular and versatile product lines since its introduction eight years ago. Now, to place this product range in an even better position to handle today's demands while providing for the opportunities of tomorrow, several improvements are being introduced this spring.

The improvements consist of three elements: a new main board to increase the machines' memory, a faster printer with improved print quality, and an updated design of the machines' front door decals. The new main board offers the opportunity to equip the machines with additional operational and commercial software options, and the improved printer has the necessary speed and printing quality to support these options. The new decal, in addition to providing a fresh new look, improves user communication by incorporating the containers that are accepted by the machine into the design both pictorially and in text. The new look now also matches the design of the other products in the ULTIMA family, providing better continuity if it is placed in combination with a T-610 for example.

“These changes are going to make this machine series better both for the retailer and the user. A new look, new options, improved functionality – this series is going to exceed our customer's expectations. And most importantly, build upon TOMRA's tradition of excellence in providing a fast, reliable and intelligent means of recycling the diverse range of beverage containers in the marketplace,” says Lasse Nagell, TOMRA product manager.

For more information, contact Lasse Nagell, Product Group Manager, Promotions, Tomra Europe AS, tel.: +47 66 79 92 02; E-mail: lasse.nagell@tomra.no.

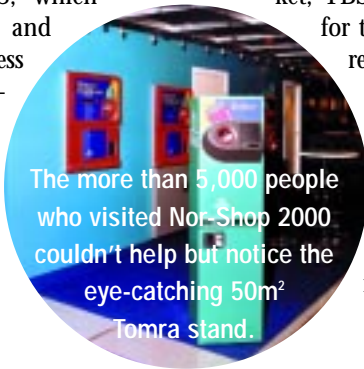


TOMRA BUTIKKSYSTEMER AS

— receives over 20 orders at Nor-Shop 2000

Nor-Shop 2000, Norway's bi-annual exhibition for shop equipment, was held from 29 February through 3 March in Oslo. TOMRA was represented by its Norwegian subsidiary, Tomra Butikkssystemer AS, which signed over 20 orders and acquired numerous business leads as a result of its participation.

TBS focused its sales efforts at the exhibition on small to medium-sized stores, since most large



The more than 5,000 people who visited Nor-Shop 2000 couldn't help but notice the eye-catching 50m² Tomra stand.

stores had already installed new TOMRA equipment during the past year to handle the introduction in Norway of a deposit system for non-refillable containers. As a means of attracting this segment of the market, TBS designed a sales campaign for the exhibition which offered reduced prices on used T-210 RVMs with the purchase of a new T-14. "I am pleased that the offer was so well-received by our customers, particularly since we could extend the life cycle of a number of de-installed



machines while increasing the sales volume on our new machines," said Per Haagenen, managing director of TBS.

TOMRA products exhibited at FMI 2000

"The world's largest supermarket industry convention."

Tomra North America was on hand to present TOMRA's range of products and services at what has become the world's largest annual trade event of its kind, the Food Marketing Institute (FMI) Supermarket Industry Convention and Educational Exhibition in Chicago, Illinois.

Taking place May 7-9, FMI 2000 featured over 1,100 exhibitors from around the world, showcasing every imaginable type of food product and the latest within the supermarket outfitting industry. The presence of thousands of supermarket wholesalers, retailers, and industry professionals provided a great opportunity for TOMRA to highlight its unique solutions for handling the return of used beverage containers.



TOMRA's booth at the exhibition contained installations of the T-22, T-32, T-42 and the T-600 reverse vending machines. TOMRA's rePLANET recycling concept, which is currently undergoing full implementation in California, was also highlighted.

This is a convention that has truly become the happening of the year for the worldwide supermarket industry, and TOMRA looks forward to participating again next year. Look for TOMRA at next year's FMI show, May 6-8, 2001 in Chicago. Check out FMI's website at <http://www.fmi.org/> for more information.



TOMRA CEO Erik Thorsen

– receives *Director of the Year* award

Erik Thorsen has been named by the Norwegian business magazine, Økonomisk Rapport (Economic Report), as Norway's Director of the Year for 1999.

TOMRA's CEO received the award for his innovative management style and consistent delivery of impressive results for a company that has gone from the edge of bankruptcy in the mid-1980s to being a successful worldwide corporation today. In making its decision, the award jury also cited Thorsen's long-term perspective in managing the company and his contribution toward raising the standard of leadership in Norway. The award is the oldest of its kind in Norway, having now been given out for the 22nd time.

The award was announced in the magazine's 25 May issue, with Thorsen and TOMRA being featured both on the magazine's cover and in the accompanying five page article containing an interview with Erik Thorsen.

The title of the article was "The Growth Winner," referring to TOMRA's strong performance record over the past 15 years. The



article begins by highlighting some TOMRA milestones, focusing on TOMRA's ability to overcome adversity in 1986, making a strong comeback and successfully re-entering the US in 1992, and the company's strong growth throughout the 1990's.

If you are interested in receiving an English translation of the article, please contact Ragnhild Ringheim, Executive Assistant, Tomra Systems ASA, tel.: +47 66 79 92 01; E-mail: ragnhild.ringheim@tomra.no.

Update: Eco-efficiency

The benefits of recycling to the environment are clear. But what are the environmental and economic effects involved in producing and using recycling systems themselves? A recent TOMRA study sheds some light on the issue.

The study, part of TOMRA's ongoing program to optimize the eco-efficiency of our recycling solutions, looked at the environmental and economic effects of TOMRA recycling systems for PET and aluminum beverage containers in two US states, Connecticut and California. Additionally, the environmental impact associated with the manufacture and operation of

the T-42 reverse vending machine was also investigated.

According to Solveig Steinmo, project engineer R&D, "as TOMRA becomes more involved in the various stages of the recycling process, it is important that we increase our system-oriented expertise in order to improve the efficiency of the total recycling chain. This project was undertaken therefore as a means

of furthering our knowledge of systems analysis and Life Cycle Assessment (LCA)/Life Cycle Cost (LCC) methodology, and applying this knowledge throughout our organization.”

LCA research is a means of examining the environmental impact of a product (or service) as it moves through its life cycle, all the way from the acquisition of raw materials to its disposal in a waste management system (see also Investing in the Future, TOMRA news, Autumn 1999, for further background on LCA). For this study, primary focus was placed on the recycling phase of the container life cycle. With regard to the T-42, the life cycle which was studied included the following phases: production, assembly/transportation, a ten-year period of operation, and waste management.

With assistance from the Østfold Research Foundation and The Norwegian Research Council, the TOMRA project team collected the study data during the period October 1998 to December 1999 through both telephone and face-to-face interviews. Assessment of the data yielded a number of key conclusions, including:

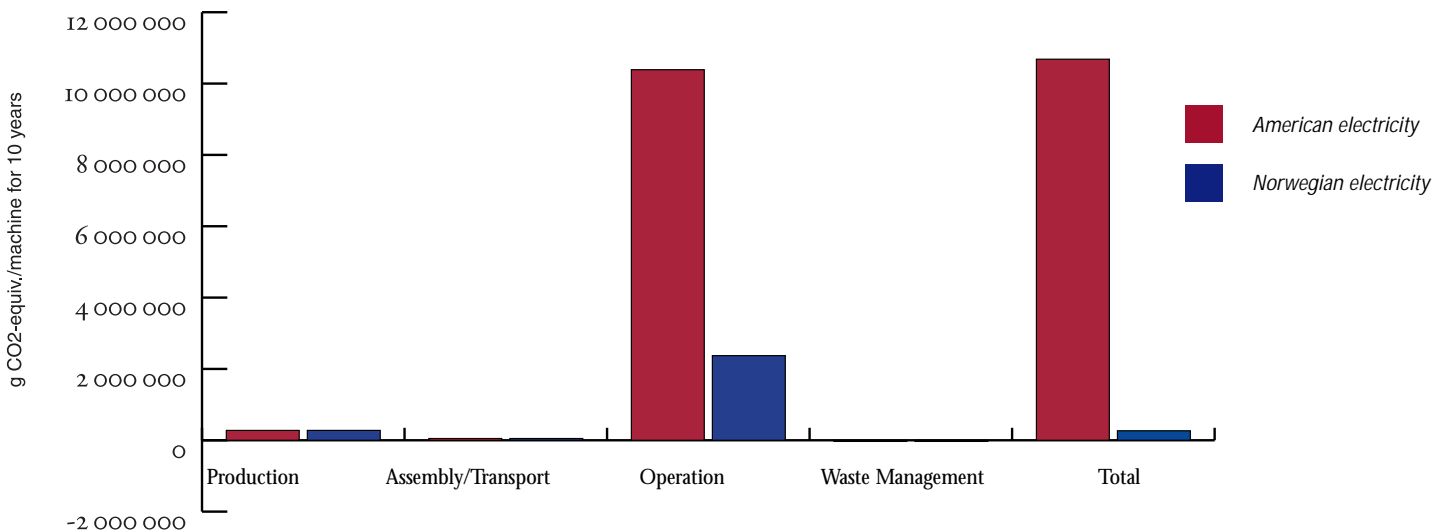
- For both PET and aluminum containers, the most environmentally “damaging” part of the life cycle is the process of obtaining raw materials for production. By using recycled material, the extraction of raw materials is avoided and thereby provides substantial environmental savings for both material types.
- The production of electricity in the US is based on fossil fuel, a major contributor to the greenhouse effect. By reducing energy consumption requirements or choosing renewable energy sources, greenhouse gas emissions can be significantly reduced.
- The level of energy consumed by a reverse vending machine, particularly with regard to the stand-by function, is a focus area for improvement.
- Consumer behavior is also an important issue to address. Driving patterns associated with the delivery of materials for recycling can potentially to a large degree adversely affect the environmental benefit derived from recycling PET and aluminum cans. Thus, it is important to maximize efficiency by making recycling a natural part of people’s shopping patterns.
- Increasing the efficiency of material transport from point of collection to processing is another target area for improvement.
- The energy consumed in reclaiming PET is high, with the extruding process being the most energy intensive.

This project has established an important basis for further environmental/economic research by TOMRA. “We are now in the process of developing a model for measuring eco-efficiency in the recycling chain, which we will first test on different types of collection systems. This is part of the research program entitled ‘P2005,’ which is partially funded by The Norwegian Research Council,” says Solveig Steinmo.

RETURN’s Update section will follow the progress of this and other TOMRA environmental projects. Stay tuned.

Contact Solveig Steinmo (tel.: +47 66 79 92 53; E-mail: solveig.steinmo@tomra.no) for further information about TOMRA’s Life Cycle Assessment research. To learn more about TOMRA’s environmental engagement in general, contact Aleksander Mortensen, Quality and Environmental Manager (tel.: +47 66 79 93 63; E-mail: aleksander.mortensen@tomra.no).

Global Warming Potential (GWP)



Global warming potential for the life cycle of a T42 machine. This figure shows that the highest contribution to greenhouse gas emissions for a TOMRA RVM comes from the operation phase of its life cycle, primarily as a result of electrical usage and gasoline consumption related to the servicing of the machine. As seen in the figure, the use of average American electricity contributes much more to global warming than the use of average Norwegian electricity. The reason for this is that 70 percent of American electricity is based on fossil fuel carriers, while 90 percent of Norwegian electricity is based on hydropower.

TOMRA's new intranet solution, Tellus has arrived!

Up until today, the process of sharing information has taken place by mail, fax, phone, or more recently, E-mail. While these means of communication can be effective, they can also be rather inefficient when it comes to the use of time and money. E-mail has offered a quick and relatively inexpensive means of conveying information, yet often presents a problem in that it can bog down a network system with all the various file documents and pictures that are often attached to the messages.

With an intranet system, these problems are a thing of the past. An intranet system is basically a smaller, private version of the Internet, allowing access only to specified users. In TOMRA's intranet system, Tellus, one can create sections which all TOMRA employees can access and others that allow

access to a limited group only (special projects, for example). The advantage of Tellus is that it gathers all relevant information that in the past has been placed in drawers, bookshelves, or local networks, and puts it in one place. With Tellus we have a central archive, a contemporary news source, a project coordinator, a corporate directory and policies, and on-line communication medium all rolled into one!

A new age has dawned for the way we communicate — TOMRA offices worldwide get ready to hop aboard TOMRA's new information superhighway: Tellus!

What's in a name?

Tellus, a name proposed by Richard Brown of Tomra European Services (Norway) in a

naming contest held during September of last year, contains several layers of meaning. First, Tellus is an acronym which stands for Tomra ELectronic Library and User Support. On another level, Tellus is the name of an ancient Roman goddess of the earth, and serves as the astronomical designation for our planet as well. Finally, there is the literal meaning of the two words, Tell us, which communicates the message of information sharing.

How will Tellus improve TOMRA?

Tellus is, in short, a one stop source for the information needs of the TOMRA employee. Its format is similar to that typically found on the Internet, containing various information modules arranged in a menu system. The main menu in Tellus for the Tomra Group contains 17 headings and another 62 sub-headings, providing a wealth of easily accessible information that will enable TOMRA employees to be more efficient and provide even better service to our customers.



All TOMRA offices should be connected to Tellus by the end of June 2000. An energetic schedule will then follow to teach TOMRA employees how to use this new tool. Once all TOMRA business units are connected and familiar with the possibilities of the system, our way of doing business will be significantly improved.

In addition to Tellus, TOMRA has created a separate intranet system named ServUs which is designed specifically to handle the needs of TOMRA service organizations worldwide. ServUs localizes in one place all the information that TOMRA service personnel need to effectively perform their jobs – product and service manuals, technical reports, software updates, etc. And, since ServUs can be accessed via a modem out in the field, technicians have all this information available at their fingertips anywhere they happen to be.

The combination of these two intranet solutions will allow TOMRA employees to get the information they need, when they need it. It will contribute to a more efficient way of working, thereby increasing TOMRA's capacity to provide value to its customers. Finally, in keeping with our corporate profile, these systems will help the company to further minimize its impact on the environment.

To find out more about TOMRA's intranet solution, contact Kurt Misje, Manager Information Systems, Tomra Systems ASA, tel.: +47 66 79 92 52; E-mail: kurt.misje@tomra.no.



This is how the Tellus home page looked on 22.06.00.



The finance section will keep TOMRA employees up-to-date on important TOMRA financial information.



Looking for information about TOMRA's local business units? Check out the local company information section.

The TOMRA team in Poland (left to right):
Marek Wojnecki, Salesman; Jerzy Kruczek, Director;
and Pavel Boratynsky, Service Technician.



Update: Poland

TOMRA 600 wins gold medal in Warsaw

The jury has spoken: The T-600 reverse vending machine is highly prized in Poland, winning two top prizes at shop exhibitions in Warsaw at the end of last year.

In October 1999 the T-600 won the gold medal for best product at the XVII Warsaw Grocery Fair. In November the industry continued its warm reception of the T-600 by bestowing upon it the top prize at the Shop Expo-Gastronomia for its ecological, innovative and aesthetic excellence.

Despite the accolades Polish shopkeepers are giving TOMRA's flagship RVM, market

conditions in Poland remain a substantial challenge for TOMRA's local distributor, Inter Commerce. According to Jerzy Kruczek, Director of Inter Commerce, "we are working hard to position the T-600 and other TOMRA products in the Polish market, yet we face a number of challenges including the lack of organized deposit systems, low labor costs, and the increasing share of one-way containers. But we see a number of developments on the horizon that could have a positive impact on our business, such as the investment in

Poland by major international chains that already use TOMRA equipment in other countries."

Inter Commerce, a well-established company known for its expertise in the area of shop outfitting, has served as TOMRA's distributor in Poland since 1998.



rePLANET has just completed its first promotion campaign for 2000. The successful promotion named "Bring a Bag – Get a Bag," gave away a free, reusable recycling bag to customers who turned in a coupon along with 30 gallons or more of California Redemption Value (CRV) containers.

rePLANET

promotion gets in motion

The four-week campaign was communicated to consumers via Sunday newspaper inserts and the Stater Brothers direct mail program. Thirty-six centers participated in the program and overall volumes increased significantly!

The next promotion for rePLANET is going to be called "Recycling Rewards." Customers who return 48 CRV containers will receive a coupon for \$1.00 off groceries at Stater Brothers locations. The machines will automatically print a coupon after the threshold has been met. This program will be promoted through retailer circulars, local radio and Pizza Hut Box Tops.

TOMRA now has 61 rePLANET centers up and running in California in the Inland Empire and Orange County areas, thanks to the support of four major supermarket chains: Ralph's, Food 4 Less, Vons and Stater Brothers. By using various promotional and marketing techniques, TOMRA is achieving its objectives of attracting a larger audience to the rePLANET concept.

Stay tuned for future promotional programs!

For more information about the rePLANET concept, contact Amy Esposito, Marketing Manager, Tomra North America, tel.: +1 203 455-5000, ext. 5043; E-mail: Aesposito@tomra.com.

TOMRA enters Colorado *with King Soopers*



King Soopers, a major supermarket chain in Colorado, is introducing its customers to TOMRA RVMs in a pilot program being undertaken in four of its stores in the Denver area.

Although King Soopers has had a material collection program in place at its stores for the past 15 years (aluminum cans, newspapers, cardboard, plastic and glass), the materials have been collected manually at their customer service counters. By utilizing the advanced technology afforded by TOMRA's reverse vending machines, King Soopers' customers will now be offered a fast and convenient way to return their recyclable materials. For King Soopers, the TOMRA machines will provide a more efficient, cleanly, and cost-saving way to handle the return of recyclables.

The program was launched on 23 May in four stores in the Denver area. Some of the elements used to promote the new recycling procedures were "greeters" and in-store marketing elements.

Greeters, who were used during the first two weeks of the kick off, demonstrated the machines to customers and distributed stickers to children. In-store marketing elements such as posters, shelf talkers, bag stuffers and machine decals are also being used during the 90-day test program.

The program also represents a major step forward for TOMRA in that Colorado is a non-deposit market. This exciting breakthrough is due to the hard work of Steve Maher from Tomra Pacific and Robert Lincoln of Tomra North America.

For more information about the King Soopers program, contact Robert Lincoln, Executive VP Sales and Marketing, Tomra North America, tel.: +1 203 455-5000, ext. 5023; E-mail: Blincoln@tomrana.com.

JURASSIC PARK decals *a success at Tops Market*

Tops Market of Buffalo, New York wanted to find a way that would entice more customers to use the reverse vending machines in their stores. After several discussions with the marketing department at Tomra North America, a positively prehistoric plan emerged.

Tops wanted a new look for the front of their RVMs that would create a fun atmosphere for parents and their children. The solution came in the form of a decal picturing a scene of dinosaurs taken from the movie Jurassic Park that would cover the entire front of the machine. Further, to make the scene more dynamic, Tops developed a triptych design that covered three machines side by side. A separate single machine design was also created.

The first prototype was tried out in one of Tops Market's new locations in December 1999. The test consisted of seven machines and was very well-received by the store staff, customers and children.

When another Tops Market franchise owner saw the installation of the Jurassic Park decals, he wanted to do the same at his store. This led to a second prototype being installed in February 2000 on six machines.

Tops Market has 60 locations throughout New York and is now in discussion with TOMRA for full production of the concept on 300 ULTIMA RVMs.

For more information, contact Amy Esposito, Marketing Manager, Tomra North America, tel.: +1 203 455-5000, ext. 5043; E-mail: Aesposito@tomrana.com.



Research & development:

The heart of TOMRA innovation

In the area of research and development, innovation is the name of the game. And for a technology-based company like TOMRA, innovation is essential in order to remain competitive. The technological innovations being developed by TOMRA's R&D department have placed TOMRA far ahead of the competition, positioning TOMRA as the world's leading provider of automated systems for the collection of used beverage containers. RETURN recently sat down with two individuals who are at the heart of TOMRA innovation—Andreas Nordbryhn, Chief Scientist, and Sjur Dagestad, Chief of Innovation—and talked about the process of innovation at TOMRA.



RETURN: Andreas, you have been with the Research and Development department at TOMRA now for some fifteen years. How has your department changed over the years?

AN: Oh, the R&D department has changed a great deal, as has the whole company. When I started in 1984, the R&D department consisted of perhaps 15 people. We are now up to 81, and are based in three different countries. The nature of TOMRA back then was much more informal—we were a relatively small company and could be productive without a large degree of structure. This had certain advantages for us in R&D as creative processes are not really encouraged by structure and can in fact be suppressed by too much structure. An unstructured environment has distinct disadvantages as well, but I think we were able to come up with some pretty impressive products in the free-flowing atmosphere that existed in the years after I first came to TOMRA. Today, the R&D department is characterized by a high level of professionalism, with an outstanding group of highly innovative, intelligent people who possess a variety of special skills. The development process is now of course very structured, something which was absolutely necessary as the company expanded and became the international corporation that it is today. But creativity at TOMRA is by no means gone as a result, it is just that now we recognize where creativity should and should not be encouraged in the various phases of product development.

RETURN: Sjur, you are the new kid in town, having joined TOMRA in April of this year. What were some of the things that attracted you to TOMRA?

SD: One of the things that attracted me the most was TOMRA's reputation for innovation. Having grown up here in Norway, I have heard about the Planke brothers and their success in building up TOMRA over the years, and have always had the impression that TOMRA was a very progressive and innovative company. I have also had the opportunity to get to know Andreas because we work in the same field and usually attend the same seminars and the like, something which further strengthened my impression of TOMRA. And when Andreas approached me about this opportunity, I was very eager to get on board.

RETURN: There is a quote by Albert Einstein which I think captures the essence of the concept phase of product development. When asked what single event was most helpful in developing the Theory of Relativity, Einstein replied, "figuring out how to think about the problem." What are your thoughts about this phase of product development?

SD: Well, I have an example that I think relates to this. I have been involved in sculpting as a hobby for some years and have had some of my work exhibited in galleries. In the beginning I was working out of my garage and had very little equipment. Over the years however I have invested a good deal of money into building up a pretty good workshop and have amassed quite a lot of tools. In the end I discovered that although I had quite a fancy workshop, it was in fact killing my creative process. You could say that in the

beginning I could do almost everything with nothing. My focus was entirely on the problem I wanted to solve. I ended up trying to fit my work in with this machine and that machine and so on, and so while I actually had the capability of doing more things, I was creating less. The sculptures I made when I basically had nothing were better I think than those I created when I had all sorts of tools to help me.

RETURN: The focus shifted toward using the tools rather than on the process of discovering what you wanted to express?

SD: Yes, that's right, and maybe that was what Einstein was getting at—that the trick was to focus on the problem and not the tools.

RETURN: Andreas, you mentioned before that structure can in a sense be an "enemy" of creativity. Are there any other factors which you might describe as enemies of innovation and creativity?

AN: I would say perhaps the worst enemy is focusing on making incremental improvements to a product. If one continually tries to improve a product step by step by step, you will end up placing all your resources in product improvement, not advancement. Certainly, optimization of a product is important, but if you concentrate too much on taking the next step instead of making the next leap, you will never really be able to get ahead of your competitors.

SD: You know when companies copy each other's products it doesn't bring the world any further. I think one of the challenges we face here at Tomra is not to fall victim to our own success. Being the industry leader in reverse vending technology, we have to be careful of falling into the trap of just copying what you already have and putting it into new applications. It is important not to get locked onto one way of thinking about a problem.

RETURN: How do you avoid falling into such a trap?

SD: One of the ways is bringing in people to a problem that have not worked on it before, get a fresh perspective. TOMRA has been very good at doing this, like for example one project we are working on now that requires a whole new problem-solving approach, and half of the project team members on this are new to TOMRA.

AN: Another approach and one we have had good experience with is collaboration with research institutions. Again, this approach utilizes the same principle that Sjur mentioned, that of getting a fresh perspective on a problem. I have worked at a research institute myself prior to coming to TOMRA, and I know that with the right kind of inspiration you can get a lot of good ideas with this kind of collaboration.

RETURN: The field of research and development may be the only place where a high failure rate is not only accepted, but is preferred. I am referring of course to the percentage of new ideas created in the concept phase that do not receive any further development. What is the percentage of ideas that make it past the concept phase at TOMRA?

AN: Actually, I think the percentage has been too high. We need to invest more time and resources on the creation of ideas, and this is one of the main reasons we have brought in Sjur, so that we can place a greater emphasis on this aspect of product development. We want to be more vigorous about the process of creating ideas.

SD: In my previous job we budgeted each year for the creation of 200 ideas, 50 of which would be developed into prototypes, and of these, two products would be made. So right from the start we acknowledged that 96% of our investment in the development of product prototypes would result in failure. But this is how you spur further creativity and innovation. An investment in innovation requires an investment in failure.

RETURN: How do you go about choosing which ideas are worthy of pursuing further?

SD: You could actually say that in the concept phase you have two ways of deciding whether an idea is good and should be further investigated. One is based on analysis, whether the facts support the idea, and the other is the gut feeling. Sooner or later though you have to pick one of the ideas and set up a project framework. Then you create a specification for the product and a set of frames for it to go through. A project without frames is like a train without rails—it's not going to go anywhere, and if it does, chances are it is going to crash.

Want to read more about this topic?

A considerable body of literature is available on the ways innovation and creativity can be incorporated into the product development process. Here are some recommendations:

- The Circle of Innovation, Tom Peters (Alfred A. Knopf, 1997).
- Serious Creativity, Edward de Bono (Harper Collins Business, 1996).
- Creativity as an Exact Science, Genrikh Altshuller (Gordon and Breach, 1988).
- Jamming: The Art and Discipline of Business Creativity, John Kao (Harper Collins, 1997).
- Building an Innovation Factory, Andrew Hargadon and Robert I. Sutton (Harvard Business Review, May-June 2000).



Sjur Dagestad, Chief of Innovation (left) and Andreas Nordbryhn, Chief Scientist (right)

TOMRA Research & Development Department

- Operations in Norway, Finland and USA
- 81 employees (55 in Asker, 16 in Heinola, and 10 in Stratford)
- Holds approximately 30 active patents worldwide
- Four department sections: Recognition, Machine Control, Processing, Verification, and Information Systems (this last section is not formally within the R&D department).
- TOMRA core technologies: man-machine interfaces and mechatronic systems design; mechanisms for compaction and material handling; sensor design and image processing; and, central operations software.
- Director: Connie Kormeseth, VP, R&D



Turn your recycling refund *into a new stereo*

In the effort to make it more attractive for people to return packaging and help the world recycle, Tomra Europe and Neckermann Business Services (NeBus) have teamed up to offer you more for your refund money.

In March of this year, a partnership agreement was signed with NeBus to further develop the Retour Plus® loyalty concept. This loyalty concept offers customers the opportunity to place their deposit refund into a Retour Plus® account versus receiving it on a standard receipt for reimbursement. In effect, Retour Plus® serves as a savings account for a customer's deposit refunds, which can then be withdrawn at a later date or used to purchase items from a catalog. There should however be little reason to withdraw the savings as cash, since the catalog features brand name items from a wide variety of categories such as small electronics, home/gardening, toys, and many others—at prices that are among the lowest on the market.

It's a win-win situation for the consumer.

Retour Plus® can be promoted either as a stand-alone card, or in combination with a store's own loyalty card program. This gives retailers the flexibility to choose the system that works best for them, while affording consumers an added benefit in their choice of where to shop.

NeBus is part of the Neckermann group and is engaged in three areas of business: loyalty, database, and mail order. Mr. Remco Zweedijk, Sales and Marketing Manager of NeBus, comments: "our experience in managing loyalty programs in combination with TOMRA's expertise in the recycling business will provide convenience, added value, and savings to retailers and consumers. Our early test results show that the program has proven its success with retailers and that consumers value the opportunity to turn their deposit refund into useful new products."

For more information, contact Lasse Nagell, Product Group Manager, Promotions, Tomra Europe AS, tel.: +47 66 79 92 02; E-mail: lasse.nagell@tomra.no.



Retour Plus®:

Save your deposit refunds so they can save for you!

Veteran TOMRA colleague bids farewell to the long and winding road

Christof Vojtechovsky, Tomra Austria's salesman extraordinaire for the past nearly twenty years, is bidding adieu to the well-traveled road and going into retirement. Christof's drive and determination over the years has resulted in personal sales of between 150 and 200 machines a year, something which has required a lot of time behind the wheel — taking him some twenty times around the world in the amount of kilometers driven!

We wish Christof the best of luck in his new role in life, and hope that he will have the chance now to see the world at a much slower pace. His experience, devoted service, and good humor will be missed by all at TOMRA.



Tomra Europe welcomes new Senior Vice President Operations

André P. Løvestam joined Tomra Europe as Senior Vice President Operations beginning 1 May.

André will have the overall accountability for product management, area management/business development, and the sales and marketing activities in Europe.

Since 1989, André has worked for Orkla, which is one of the leading branded consumer goods companies in the Nordic region with annual sales in excess of four billion USD. His last position was Managing Director of Orkla's snack business with 400 employees and annual sales of almost 100 million USD in more



than 10 countries. He also served on the boards of Orkla's confectionery, biscuits, detergents and personal products businesses, as well as Orkla Asia (1997-1999). Prior to this, André served as the Marketing and Sales Director of Orkla's detergents business.

André has a Bachelor of Science degree with Honours in Management Sciences from the University of Manchester, Institute of Science and Technology in England. He is 33 years old, married and has three daughters.

TOMRA welcomes Cees M. Petersen, Director of Global Business Development

Cees M. Petersen (46) joins TOMRA as Director, Global Business Development as of 5 June 2000.

Cees Petersen will be joining Global Business Development (GBD), a new organizational entity established during the third quarter of 1999 and now consisting of Greg Garvey, Pål Bråthen and Klaus Røiri. The team is responsible for conceiving, nurturing and developing business opportunities that can be defined as strategic in size or nature. In markets where these criteria are met, GBD is responsible for defining and executing TOMRA's entry strategy in cooperation with the company's established business units.

Cees holds a BSc and an MBA in International Marketing and Finance. He has a varied background in senior management positions within the fast-moving consumer goods sector (Cote d'Or/Jacob Suchard, Mars Inc., Old El Paso Foods),

and joins TOMRA from a position as project manager in Coca-Cola Netherlands. At Coca-Cola, Cees was in charge of a major Dutch initiative within non-refillable packaging and logistics that was aimed at optimizing the value chain.

Cees will be located at TOMRA's office in Holland, Tomra Systems B.V. in Apeldoorn.



TOMRA Market Spotlight:

SWITZERLAND

The Swiss market

Like most markets, Switzerland has developed a system that combines a number of different means to achieve national targets for the removal of recyclable materials from the general waste stream. In the Ordinance on Beverage Containers of August 22, 1990, the Swiss government defined the nature of container recycling in Switzerland, setting up a mandatory deposit on refillable bottles and a restriction on the amount of one-way containers that are not recycled.

Switzerland's largest supermarket chain, Migros, is the only retailer in the country that has instituted a deposit on one-way PET bottles – achieving a return rate of 95 percent. All other retailers provide collection bins for the return of non-deposit PET bottles either in front of or inside their retail outlets. The return rate achieved by this method is 70 percent, which while considerably lower than the deposit system, is still relatively high compared to other non-deposit markets. This is due in part to the generally high environmental consciousness in Switzerland and the fact that each household must pay a rather high fee for each garbage bag collected.

Tomra Systems AG

The evolution of Tomra Systems AG can be traced back to TOMRA's first step into Switzerland in 1980 with the signing of a distribution agreement with Ondoco SA. In 1998 Ondoco merged with the Halton distributor Supralog AG (which had been in operation since 1988) to form Tomra Systems AG. With Tomra Systems ASA's purchase of a 50.5 percent stake in the company effective 1 January 2000, Tomra Systems AG officially became a subsidiary within the Tomra Group.

Key achievements

One of the most significant achievements for Tomra Systems AG was the signing of an eight-year lease agreement with Migros Vaud in August 1999, resulting in 80 percent of all its stores being equipped with TOMRA machines.

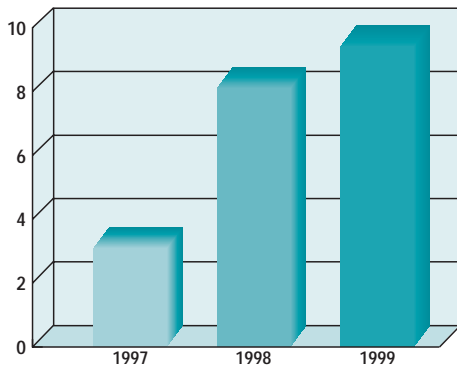
Another important collaboration between Tomra Systems AG and Migros was the introduction of the TOMRA Retourette store design concept as the standard for the Migros Aare store chain. A typical Retourette installation offers a complete design package that includes not only reverse vending machines, but also collection bins for other recyclable materials formed in the shape of various animal figures that amuse children while educating them about the importance of recycling. Says Tomra Systems AG managing director Sven-Erik Carlson, "the added value that TOMRA can offer a store owner through various options such as Retourette and RVM couponing or donation programs, for example, really set us apart from the competition. I am confident that a lot more Swiss residents are going to be benefitting from such programs in the near future."



- **Population**
7.1 million
- **Languages**
German 65%
French 18%
Italian 12%
Romansh 1%
other 4%
- **Religions**
Roman Catholic 48%
Protestant 44%
other 8%
- **Area**
41,285 sq. meters
(15,940 sq. miles)
- **Capital**
Bern
- **Largest cities**
Zurich (336,800)
Geneva (172,800)
Basel (168,700)
Bern (123,300)
Lausanne (114,200)



Tomra Europe president Morthen Johannessen (left) welcomes Tomra Systems AG managing director Sven-Erik Carlson to the Tomra Group.



Tomra Systems AG annual operating revenues in millions of Swiss Francs

Looking ahead

Carlson has identified several other potential growth areas for Tomra Systems AG. "TOMRA's added value solutions are an important element in our growth strategy – helping our customers increase their competitive edge by maximizing the value that can be achieved in the collection and recycling process. This includes saving costs, improving customer service and the company's profile in the community, as well as the opportunity for increasing sales."

One of the big challenges that Switzerland faces, points out Carlson, "is how to handle the recycling of one-way PET containers, given the huge variety of PET bottles on the market and the high number of low-volume collection points. We look forward to working with the industry to find efficient solutions to this challenge."

Market Overview

Legal framework

Verordnung über Getränkeverpackungen, (Ordinance on Beverage Containers)

This legislation was passed on 22 August 1990 (latest revision 14 January 1998), and covers all containers for mineral water, carbonated soft-drinks, and beer.

- Mandatory deposit on refillable bottles (0.6L bottle and smaller, 0.20 CHF; >0.6L, 0.50 CHF per bottle).
- Sets maximum tonnage limits for the amount of material that is not recycled per year. These limits are currently based on a total consumption of 1.6 billion liters, and have been set at 16,000 tons for glass, 6,000 tons for PET, and 500 tons for aluminum. An amendment to this legislation currently being considered calls for percentage quotas to replace the defined tonnage figures.

Defining elements

- Has Europe's highest per capita consumption of one-way PET bottles, making up 50% of the used beverage container flow.
- Two non-profit organizations have been established in order to handle the collection and recycling of one-way containers: IGORA (aluminum cans), and PET-Recycling Schweiz (one-way PET).
- Floor space very expensive – has encouraged the utilization of the basement for accumulation systems.
- Three main languages – presents a challenge with regard to documentation and service.

TOMRA RVM returned container rates

- Migros: 90% soft-PET, 10% glass, virtually no crates.
- Other stores: 50% glass, 50% refillable PET, large number of crates.

TOMRA products currently in use

- Retourette system
- RVM donation program (UNICEF)
- T-600
- T-22
- T-2020

Other players in the market

- Trautwein GmbH (Bottlecomp)
- EM-Gerätebau GmbH (Flaschomat)
- MRV GmbH (RA7)

Tomra Systems AG contact information

Tomra Systems AG
 Erlenwiesenstrasse 2
 CH-8604 Volketswil
 Switzerland
 Telephone: +41 1 947 55 00
 Fax: +41 1 947 55 10
 E-mail: info@tomra.ch

LIVING OUR VALUES:

Personal Initiative
INNOVATION

Enthusiasm

Fighting Spirit

Integrity

These five concepts stand at the center of TOMRA's value structure, representing what TOMRA refers to as its core values. And since the foundation of TOMRA more than 25 years ago, our business has been built on our employees' commitment to these underlying values as they work to fulfill the goals and strategies of the company.

As a means of recognizing this commitment, RETURN now presents the Values In Practice (VIP) Award – an award recognizing TOMRA employees who in an exemplary way demonstrate TOMRA's core values.

The VIP Award will be presented twice a year and reported in this column. Selection of the award winner is based on the nominations received by the RETURN editorial team, and will correspond with the core value that is serving as the theme of the issue in which the award is being presented. Since Innovation is the theme of this issue, we provide here an example of TOMRA innovation in practice – and an excellent example of employees who are Living our Values!

The first VIP Award for excellence in demonstrating the TOMRA core value of innovation is presented to:

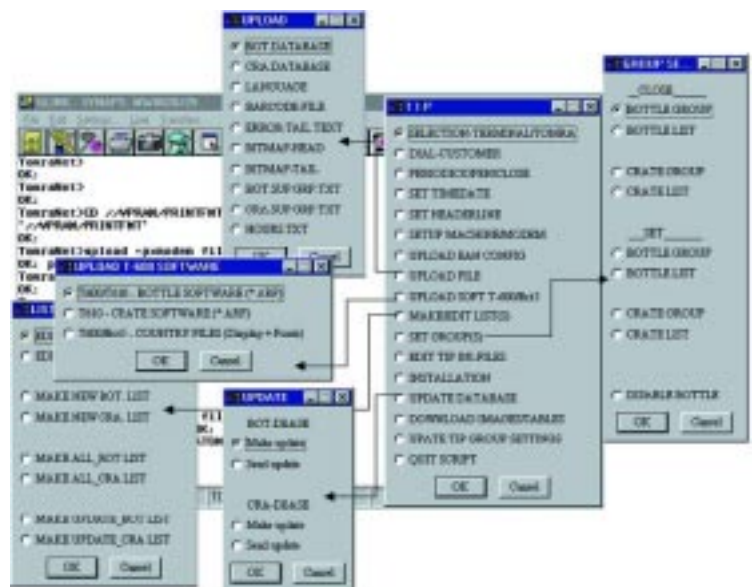


Roman epitomizes TOMRA core values with his enthusiasm and innovation.

**Roman Postl, Product Expert,
Tomra Austria GmbH**

While Roman has been involved in many innovative efforts during his years at TOMRA, one in particular deserves special recognition—TIP (TOMRA Installation Program).

TIP, a software program that was designed and implemented by Roman, serves to automate the installation of our reverse vending machines. This software employs guided routines that make it simple to use, allowing a person even with basic PC knowledge to install our machines. Based on G-LINK communication software, TIP is easily adaptable and has increased tremendously the quality of the machine installation procedure.



TIP makes it easy to navigate through the installation process!