



The invention's actual birthday cannot be exactly pinpointed, but we take it to be the day of the first successful test casting on the 6th of November 1968.

## 40<sup>th</sup> year anniversary

“What to do with upward casting?”, was the heading in an Outokumpu internal report, compiled by Pori Foundries Manager and one of the inventors of the technology, Mr. Timo Lohikoski in 1973. What they decided to do has made UPCAST<sup>®</sup> the market leader in upward continuous casting.

The report handled the topic at length, including the technology's opportunities and advantages. “This method has so much potential that it deserves in-house development. From now on it will be treated as a valuable technological innovation”, read the conclusion. It seems that other know-how and equipment can also be sold by means of this technology. The report also suggested that “Sales and development of upward casting technology should be made into it's own business unit.” And that is exactly what was done!

### So where did it all begin?

At the end of the '60s many commercially available casting methods were in use at Outokumpu's Pori Plant for copper and copper alloys. The casting directions were downwards, horizontal or something in between. The cast products were large in cross-sectional area and required numerous downstream steps in further processing. From this rose the question; How to cast rod or tube that is closer to the size

of the final product? Search for the answer led to many discussions and trials began in earnest. The development culminated with the first successful upward test casting in 1968. A few years later the decision to install the first production line was made and the L-line was installed at the Pori Foundries in 1971, casting Cu-OF rod in 19-24 mm diameter.

Until 1993 the L-line was the largest capacity UPCAST<sup>®</sup> line in Pori Plant and after numerous upgrades and modifications remains in operation to this day. Although the first line cast Cu-OF rod, copper alloys were very much part of the development work from the start. In fact the second production line, commissioned for an outside customer in 1972 was for copper alloys.

### UPCAST<sup>®</sup> – spreading it's wings

At least partly, the internal report can be credited for the establishment of the JAVA-unit (later renamed Outokumpu Castform Oy) that developed upward casting technology and began it's commercialization. The unit's work proved fruitful very quickly and in the '70s, altogether 21 lines were sold, of which seven were for Cu-OF copper and 14 for copper alloys. In 1983 deliveries totaled 50 and landmark of 100 commissioned lines was crossed in 1993. Strong sales of copper alloy lines was seen as such a big threat

to Outokumpu's own production that limitations were set. As can be imagined, this raised tough internal conversations as well as a bit awkward situations with customers-to-be.

### UPCAST<sup>®</sup> technology remains in knowledgeable hands

Coming to the 21st century, Castform Oy responsible for upward continuous casting business activities was part of Outokumpu Copper Products division. When Outokumpu first decided to divest it's copper business followed by the announcement of the new owner to close down or sell technology companies, Castform Oy management was willing to take a financial risk to ensure continuity of the business – UPCAST OY was formed to continue UPCAST<sup>®</sup> business activities. UPCAST OY has now been operating for over two years and has received 15 new orders.

– Our aim is to keep developing the technology and our way of operating. We want to remain the market leader and wish to be known for our reliable, high-quality technology and outstanding customer service. We are now on our own but also free from restrictions that haunted us in the past, concludes UPCAST OY's Managing Director Jukka Lähteenmäki.

**Wherever. Better.**



## CASE: Ta Win Industries (M) Sdn. Bhd. – large business ambitions

Ta Win Industries (M) Sdn. Bhd. (from hereon referred to as Ta Win) manufactures enameled copper wires to overseas and local customers.

The company was founded in 1989. Its factory was set up in Malacca State of Malaysia where also the UPCAST® installation is running. Malaysia and Taiwan are the company's production and distribution centers with cooperation from bases in Hong Kong and China. Ta Win bases its operations on a concept of strict quality control. UPCAST OY was the perfect partner to choose as their quality values match those of Ta Win. Managing Director, Mr. Chen Hsi Tao confirms, that reason for choosing an UPCAST® line in the first place was the highly developed technology behind it. Fulfilling customer requirements in a cost-efficient way as well as continuous efforts to improve their quality oriented concept have been the bedrocks of making Ta Win

the enameled wire supplier for many international companies.

### Smooth cooperation

When asked about benefits of being in cooperation with UPCAST OY, Mr. Chen highlights UPCAST OY's often praised customer service. – We at Ta Win find cooperation with UPCAST OY very smooth indeed. He continues – Technical services as well as a wide range of spare parts are available and deliveries arrive on time.

One of the unique characteristics about an UPCAST® line is its upgradability. To meet customer's changing production requirements, UPCAST OY can offer

modernization and upgrading service for their equipment. UPCAST® at Ta Win was installed in 2000 and will soon be upgraded. – We intend to increase the production capacity to cope with increasing demand, Mr. Chen calculates.

### The future looks bright

Overall Ta Win has been satisfied with their UPCAST® line and customer service offered by UPCAST OY. Mutually beneficial cooperation of these two companies then will most certainly continue into the future. Ta Win has successfully developed markets in Asia and South East Asia and is preparing itself to grasp more overseas business opportunities.

## CASE: PT GT Kabel Indonesia Tbk. – three decades of experience

Company products carry the well-known brand names of KABELMETAL and KMI Wire and Cable in domestic and overseas markets, respectively. PT GT Kabel Indonesia Tbk. has been producing quality wire rods as well as power- and telecom cables since 1972.

The company currently holds a wide segment of the domestic market. – We are one of the qualified suppliers of power cables to the state owned electricity company as well as to the recently privatized telecommunications company. In addition to these, the company is also a major cable supplier to private sectors in oil, mining and various other industries, COO Mr. Lie Thwan Hian tells us.

– Quality of the rod has met all our expectations and the end product has been received well by our customers, Mr. Lie Thwan Hian recognizes the merits of the investment. – It also strengthens our competitiveness by reducing cost in the rod premium and improves our waste efficiency, he continues with his praise.

### Benefits and future targets

Other benefits of the UPCAST® system include its high automation, ease of operation and maintenance. For example, inductor replacements take just a few days. To conclude Mr. Lie Thwan Hian summarizes: – More than 13 years running, without a single accident or major break in production are proof of reliability of the UPCAST® line itself and good support from UPCAST OY.

– Requirement for copper rod has been steadily increasing in the last four years. To meet our target, we will upgrade our cooling water system in order to increase our casting speed, Mr. Lie Thwan Hian describes future targets.



COO Mr. Lie Thwan Hian on the left and Rod & Wire Production Div. Manager Mr. Aditya Utama on the right.

### Product range and standards

Currently, the company produces more than 2 000 different types of cables at a capacity of 25 000 tpa with an export market comprising of approximately 40 countries around the world. The product range includes: OF Copper rod, Aluminium & Aluminium Alloy rods and LV Cu & Al Power cables to mention a few.

Standards awarded to PT GT Kabel Indonesia Tbk.: ISO 9002, ISO 14001, ISO 9001, ISO 9000:2000, OHSAS 18001 and SMK3 (Indonesian Health and Safety Management System).



## Three days of fact and festivities

In September 2008, the 5th UPCAST® User Meeting was held in Finland. Almost 40 UPCAST® technology users, from 15 countries were present. UPCAST® 40th year anniversary celebrations gave additional sparkle and glamour to the event.

On the agenda this year were the UPCAST® process, services and maintenance as well as upgradings. Guest speakers from Hitachi, Outotec, Maillefer, Danieli, RUSS-Elektroofen and Threesixty Parkgate Technology Ltd gave lectures on various conversation raising topics. Probably topic that was of greatest interest was the one given by Ms. Kaisu Keskiäho on the possibilities of casting aluminium rod. This new exciting application requires still some development work before it's overall feasibility can be determined.

### Positive feedback

General and private discussion between UPCAST OY personnel and participants were very rewarding considering future cooperation. – The feedback so

far has been positive, one of the event organizers Mrs. Virpi Salminen sighs contently after a day and half of the event was behind them.

Of course the User Meeting is about much more than just lectures. Probably the most memorable moments were when the entire UPCAST® family spend time together away from the conference facilities. First evening was spent at the Suomenlinna Sea fortress on an island just off Helsinki.

### Glamorous Gala Dinner

After the second day of lectures participants enjoyed traditional Finnish sauna and prepared for the UPCAST® 40 Year Gala Dinner. At the Gala everyone enjoyed music, good food and drink, performances

and of course great company. Mr. Seppo Pietilä gave a presentation on UPCAST®'s 40 year journey so far.

### Final day and final words

REKA Cables in Hyvinkää offered a plant tour on the last day. Participants also absorbed Finnish culture with a visit to the former home of the world famous composer Jean Sibelius. Private discussions between users and UPCAST OY personnel provided a fruitful ending to the meeting.

– On behalf of everyone at UPCAST OY we want to give a warm thank you to all participants and we look forward to seeing you again in a couple of years time, Mr. Jukka Lähteenmäki thanks.

## Engineers on a well deserved break



Tuomas Rajaviita,  
Project Engineer

Juha Jaakola,  
Field Engineer

**With four almost simultaneous new commissionings and an upgrading, the first half of 2008 has been very busy indeed.**

It has required meticulous planning to coordinate working schedules in changing circumstances, so that all new start-ups received the best possible service. We must also always remember that starting a new production line is a two-way street where the customer's organization plays a vital role.

At times like these with high copper prices, cathode supplies are based on just-on-time principle and material through-put times must be minimized. This is where our modus operandi really comes to its own. By testing all equipment thoroughly before shipment, lines start producing on schedule without hiccups. Also both our new stepless power control system and double loop inductor have proved to be reliable and easy to operate.

Cooperation is the cornerstone of successful projects. Our goal is a satisfied customer.

### Latest commissionings

**HAMEDAN WIRE AND CABLE CO., Iran**  
Capacity • 7 500 TPA

**GAMAKABEL PLC, Bulgaria**  
Capacity • 6 000 TPA

**SYRIAN MODERN CABLE, Syria**  
Capacity • 15 000 TPA

**ANONYM**  
Capacity • 8.000 TPA

**NIGDELIOGLU METAL, Turkey**  
Capacity • 12 00 TPA

**ELUMA S.A., Brazil**  
Capacity • 6 000 TPA

## Introducing UPCAST OY personnel – the project management team



**Esa Pohjola**, Manager of Project Implementation since 1999, is responsible for completion of client orders, supporting start-ups and handling warranty related matters. In Esa's

17 years at UPCAST OY, project management has moved towards a direction, where every member of the team answers for a particular area of a project. – We have gone from being part of a large, rigid organization to a small dynamic company that concentrates solely on its own product, Esa describes.



**Maarit Hämäläinen**, Project Implementation Secretary, joined Outokumpu Castform (now known as UPCAST OY) in 1994 to substitute a close friend of hers who went on maternity

leave. 13 years later she is a permanent fixture of the team keeping in contact with clients and other parties during projects. She supports the entire team by taking care of administrative tasks.

According to Esa, it has been great to witness how UPCAST OY clients have also lived through these changes and how our partners and subcontractors have actively developed their operations according to our client needs. Cohesive spirit within the project team has made it all possible.

Our ambitious future aim is to develop the UPCAST® product and our overall operations as well as find new applications, so that we can continue to meet our client needs in this fast paced world we live in.

Esa's spare time is spent doing woodworking or by the lake with his family fishing and hiking all year round.

– I enjoy the diversity of my job. Every day and each client is different and all countries have their special ways to consider. – The second best thing about my job, are my colleagues, Maarit smiles.

Every new project is a challenge in itself. – My personal goal is to develop in my job, which is possible now that we are working independently from Outokumpu, Maarit believes.

Any spare time this busy mother of two gets is spent on the golf course.

## Events and exhibitions



**The All China - Wire and Cable Industry Trade Fair 2008**  
Shanghai, China,  
23 - 26 September



**Wire and Cable India 2008**  
Mumbai, India,  
20 - 22 November



**The International Wire and Cable Trade Fair in Russia**  
Moscow, Russia,  
12 - 15 May 2009



**International Wire and Cable Fair for Southeast Asia**  
Bangkok, Thailand,  
13 - 15 October 2009

## UPCAST OY Contacts

We offer superior technology and service to old and new customers worldwide.

**UPCAST OY**  
Kuparitie 10, P.O. Box 60  
FI-28101 PORI, Finland

Please note, our e-mail addresses are:  
firstname.surname@upcast.com  
www.upcast.com