



**2008 European Wireless Power Transfer
Excellence in Technology Award**



“We accelerate growth”

2008 European Wireless Power Transfer Excellence in Technology Award

Award Description

Frost & Sullivan's Technology Implementation Award is bestowed upon a company which makes effective and an innovative use of an Existing Technology which has resulted in innovation(s) that have or are expected to bring significant contributions to the industry in terms of adoption, change, and competitive posture. This award recognizes the quality and depth of a company's research and development program as well as the vision and risk-taking that enabled it to undertake such an endeavour.

Research Methodology

To choose the award recipient, Frost & Sullivan's analyst team tracks innovation in key hi-tech markets. The selection process includes primary participant interviews and extensive primary and secondary research via the bottom-up approach. The analyst team shortlists candidates on the basis of a set of qualitative and quantitative measurements. The analysts also consider the pace of research and technology innovation, and the significance or potential relevance of the innovation to the overall industry. The ultimate award recipient is chosen after a thorough evaluation of this research.

Measurement Criteria

In addition to the methodology described above, there are specific criteria used to determine the final rankings. The recipient of this award has excelled based on one or more of the following criteria.

- Significance of the creation of a new opportunity in the industry, and across industries (if applicable).
- Potential of the opportunity created.
- Competitive advantage of innovation vis-à-vis other related innovations.
- Impact (or potential impact) of implementation of the technology on company or industry mind share and/or company bottom line.
- Robustness and Scalability of the innovative implementation.



The 2008 European Wireless Power Transfer Technology for Material Handling Technology Implementation Award goes to Conductix-Wampfler AG, in recognition of its efforts in the development of a broad spectrum of Inductive Power Transfer (IPT) technology based applications. IPT is offered in two versions (IPT Rail and IPT Floor) perfectly matching needs from different application sectors. Therefore, it has been already implemented in sectors such as material handling systems in industrial, automotive, building architecture, recreation resorts area among others. The applicability and successful implementation of the technology across a broad spectrum of domains, signifies its robustness and reliability when compared to competing solutions.

Company Background

Founded in 1959 and merged in 2007 with Delachaux group based in France, Conductix-Wampfler AG has emerged a leader for mobile energy supplies and data transmission systems. The headquarters of Conductix-Wampfler division related to the Inductive Power Transfer Technology IPT is in Weil am Rhein, Germany. Conductix-Wampfler AG group consists of 15 companies with several partners being present in Europe, North and South America, Australia and Asia Pacific Region. Having about 1100 employees across the globe, the group generated sales of nearly 204 million in fiscal 2007. Currently, they specialize in solutions for energy and data transmission systems, material handling systems and buffers (such as rubber, cellular and hydraulic buffers) for a broad spectrum of applications.

Technology Relevance in the Market Place

Traditional solutions used for transferring energy to material handling systems use wires. However most of the wired material handling systems has certain physical limitations in terms of travelling speeds and dimensions - and most of the limitations result from the mechanical design features related to wires. Moreover, there is a need for alternative solutions to make the existing products more versatile and lower the cost of maintenance. It has been found that one of the ways to solve the problem is to use wireless power transfer technology for certain applications. By using wireless power transfer, the devices' movement and speed limitations related to wires are omitted. Due to lack of mechanical contact the technology can be used under critical ambient conditions. Moreover, mechanical wear and tear is eliminated leading to lower maintenance cost.

Companies that offer solutions based on wireless power transfer focus mainly on industrial or transport applications such as overhead and conveyor trolleys, pallet transportation systems etc. Most of the wireless power solution providers are able to offer solutions only in limited operation areas such as implementations only in the area of sensors. Offering wireless power transfer for only one type of solution limits them to a specific group of customers.

How the Technology Works

Conductix-Wampfler has gone a step further by widening the scope of solutions for its customers', thus enabling them to select the product which perfectly matches their needs. Their range of product offerings is based on the principle of Inductive Power Transfer (IPT) technology. It uses inductive coupling between primary and secondary coils that are

separated by a distance. The primary site creates 20 kHz alternating current, and with this 20 kHz alternation a magnetic field is formed around the cable. This field is inducing in the secondary site occurring in a second coil. Using some power electronics, the induced current can be modified in order to create a reliable power source for supplying motors or other devices on vehicles for material handling systems.

Based on IPT principle, Conductix-Wampfler has developed IPT system in two versions: IPT Floor and IPT Rail, supported by the iDat unit. iDat enables transfer of data that serve not only for guiding the vehicles along the pre-determined travelling path, but also for the positioning of the vehicles on this path. The IPT Rail system is offered for rail guided vehicles. Its large mechanical tolerances and the lack of moving parts allow achieving higher travelling speeds and easy transfer at switches. IPT Floor is mainly dedicated for the areas where the vehicles can move freely, without having any obstacles on its travelling path. Moreover, when it is combined with the iDat there is no need to use expensive and unwanted mechanical guidance slots.

Another aspect making the IPT solution very attractive is the safety. The IPT bases on pure magnetic field which is not distributed very far to the ambient. It uses the two-wire transmission line enabling smaller eddy-current and proximity effect losses. IPT based systems are characterized by magnetic fields that are at acceptable levels, complying with all safety standards. The high level of safety is one of major factors driving the implementation of the technology in numerous solutions in industrial automation and entertainment equipment. This can be attributed to the refinement and enhanced functionality seen in IPT based product designs developed by Conductix-Wampfler AG.

Business & Partnerships

Both the IPT Rail and IPT Floor solutions are already well proven from the technological point of view and have been accessible as product for several years. The company focuses mainly on wireless power transfer to material handling systems, thus covering tremendous range of application areas. Their IPT technology can be used in the areas such as automation and process control applications which include automated production facilities, cranes, robots, in the automotive (electric cars and buses), for shipyard manufacturing and loading, train (for railways), building architecture (lifts, automated doors and others), mining, and for entertainment equipments such as roller coasters.

First industrial installation based on IPT has been provided in 2000 at BMW plant (Germany). The system has been improved continually and as a result Conductix-Wampfler has successfully carried out a couple of hundreds of implementations worldwide. Some of the most spectacular solutions made possible with the IPT technology are vehicles deployed on the water ride in Walibi World in Netherlands and Legoland in USA; the Electrified Monorail System for Mitsubishi Motors (Australia), KIA Motors (Slovakia); IPT System - elevator in tower Operator at Expo Exhibition (Germany) and also automated guided vehicles in DAF (Netherlands) and GM (China).

Conclusion

Hence, Frost & Sullivan recognises Conductix-Wampfler AG with the 2008 European Wireless Power Transfer Technology for Material Handling Technology Implementation Award for its efforts in the development of a broad spectrum of Inductive Power Transfer (IPT) technology based applications.

About Best Practices

Frost & Sullivan Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.



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