Indoor location is not a dream anymore

The integration of additional data coming from new sensors will be part of the next evolution and innovation in indoor location technology, says **Christian Carle, CEO and co-founder of Pole Star**

In 2002, when Pole Star was launched, indoor location technology was just a concept and products in this field were non-existent. At that time, could you foresee such a fast growth for the segment?
Jean Chenebault (as co-founder) and I came from the space industry. I belonged to THALES group (former ALCATEL SPACE) where I was in-charge of the GNSS programmes and in particular the GALILEO programme. In the course of the preliminary studies made with the European authorities, it appeared to me very clearly that GPS and GALILEO will not be able to offer continuity of the location service between "open sky environment" (where GNSS systems work perfectly) and the dense urban areas and the indoor environment where the signals are at least weak and sometimes simply not unavailable. It also appeared very clearly that mobile devices were going to become essential in our daily life. The PND market was just beginning to grow and Microsoft and Nokia had already gauged the potential of the cellphone market. It was a tough decision but our vision was good. I remember the reaction of several people when we presented our project (in 2001): "An indoor GPS? It is useless!"

Your first launch came in 2008 with NAO Campus. How did the company sustain itself in the initial years?
We did a lot of R&D. We had the concept but we didn't have the solution. We benchmarked a lot of technologies and solutions before designing our own solution. We worked a lot on the regulation issues related to the GALILEO programme for the European authorities as well as for some big international companies. We helped them design their systems related to GNSS activity.

**How do you see the demand shaping up after the NAO Campus launch?**
We were the pioneers. It was an opportunity but also a risk. We spent a lot of time and effort to find the first customers (ear-

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ly adopters). The risk was to work for the future competitors. But we were the first to offer a validated viable solution for Windows mobile in 2008 and then Nokia in 2009, Android in 2010 and iOS in 2012. We opened the doors to a new market. We signed big contracts. As a result, a lot of companies decided to enter into this market. Now, there are newcomers arriving in the market every month. We also see a lot of start-ups disappearing every month. Our unique and large portfolio of customers demonstrates that our technology works well and that indoor location is not a dream anymore. The only limit is the imagination. NAO Campus is as simple as GPS to use.

Which are the geographies where NAO Campus is available? What are your expansion plans?

Our business model is based on a setup fee and an annual licence fee. Our customers are the venue owners or managers. Thanks to the maturity and the scalability of our solution, we are able to offer a new model based on the ILAAS (Indoor Location as a Service). We plan to offer this solution across the globe. To achieve this objective, we have designed and implemented a set of tools and features such as the NAO Cloud platform and the Blind Crowdsourcing technology. We have more than 150 venues which have been covered by
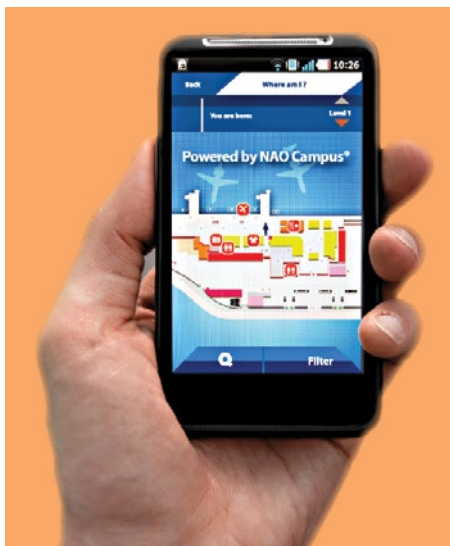
our technology in more than 20 countries. We will target more than 3,700 venues by 2014, 10,000 by 2015 and more than 18,000 by 2016.

You have said Indoor location apps are now mainstream for iPhone and Android devices, covering about 80% of the smartphone market already. But these services are not available in the developing countries. What are your plans for emerging markets?

We follow the market trends and expectations. Portability of our solution is not an issue. In the course of our compatibility programme, we are working closely with OS providers, device vendors and analysts to follow the market trends. Our customers will decide what and when! We delivered our Bluetooth Low Energy- based (BLE) solution for Android devices long before the release of Android with BLE open API. We were the first to achieve that and it was a market driven decision.

What are your other big products?

We have recently announced the Blind Crowdsourcing technology: a disruptive innovation that automates the implementation and the maintenance of indoor location services, lowers costs, and drastically accelerates the worldwide expansion of the service area. The beta release was demonstrated privately to some key partners and customers in early June. The full operational implementation will be completed by the end of the year.

How does indoor location technology improve efficiency and security in organisations?

People-tracking is a key for big events and public gatherings. Our solution was selected for a big international exhibition in Paris last June: The Paris Airshow. NAO campus was used to ensure the security of the officials and delegations coming from all over the world. Our solution helped the show organisers manage and locate private security staff inside and outside buildings. It also optimised emergency response time by alerting and guiding the nearest security agent to the emergency scene.

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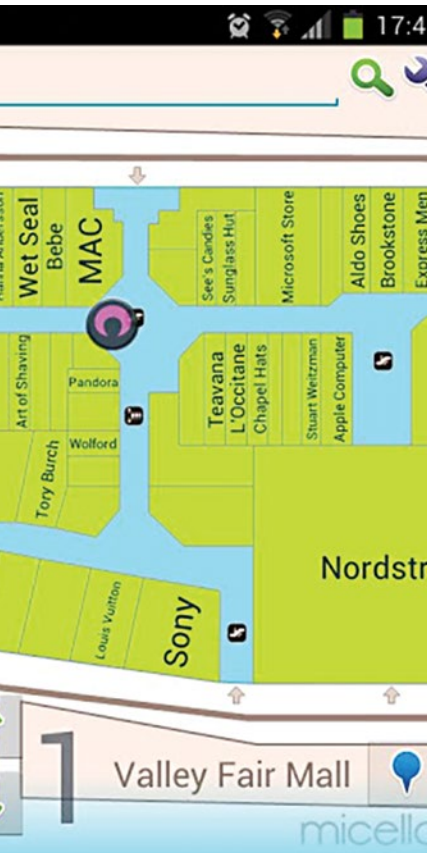
Screenshot of the NAO Campus

How can indoor location help real-time retailers score on the onslaught of e-commerce?

In a digital world, where 'showrooming' becomes the norm – with shoppers coming into a store to look for a product, then checking the price online and eventually buying it from a website – retailers are struggling to find ways to compete with e-commerce sites. E-commerce sites have been able to precisely target customers by using advanced behaviour marketing analysis and targeted messaging. However, indoor location has disrupted the status quo, giving the brick-and-mortar retailers an upper hand over digital commerce. With indoor location technologies, it is now possible to know when a customer is inside a building, just like an e-commerce website knows when an Internet user is on its homepage. Store owners are now able to offer unique incentives to shoppers, bringing a strong value added component to their digital and CRM strategies, which enable more efficient location-based marketing, sending consumers the right message, at the right place, at the right time.

How do you think Pole Star stacks up against the competition? Even a lot of big ticket companies like Nokia and Microsoft have not been able to solve the indoor puzzle yet.

A proprietary solution dedicated to only one type of devices does not answer the question. The core location technology is just one part of our solution. The way we fuse technologies together is unique. It has given us the capacity to expand and deliver a seamless QoS worldwide. Most of the companies in the market are looking for venue owners for a proof of concept. They want to test and validate their prototype. They don't have "real customers". They don't know what it means to deliver a solution and to guarantee the compatibility, the scalability, the level of performances, and the maintenance. We have a unique experience and we focus our efforts to deliver exactly what the market is looking for. Our strategy is to share our experience with our partners and customers. We have standardised our offer and interfaces

(API). We have simplified the way we integrate NAO Campus into a mobile app. We joined recently the In-location Alliance to share our vision and experience with the entire business ecosystem.

ABI Research predicts that the indoor location technology market will reach $5 billion in revenue by 2017, representing over 200,000 installations of infrastructure equipment, including Wi-Fi hotspots, Bluetooth antennae and so on, and over 800 million branded app downloads. Your comments?

We expand our coverage almost every day and we receive new requests every day. Indoor location is not just a nice feature to have anymore. It is a "must have" for most of the mobile applications dedicated to indoor environments. The trend is clear. But the blue spot on a map is not the end of the story. Indoor location technology is an enabler to create value.

Which are the other potential areas of applications for indoor location technology?

Pedestrian navigation, mobile digital guide for museums, mobile commerce, mobile marketing, mobile advertising, indoor location analytics, lone worker protection, people/child tracking, healthcare, emergency services, people security, visitors/passengers management and also home automation, are some example where indoor location can play a vital role.

What innovations do you foresee in the indoor location market over the next 10 years?

The integration of additional data coming from new sensors will be part of the next evolution/ innovation. The next phase of innovation will reduce the dependence of any kind of infrastructure whether it is Wi-Fi or BLE. We will keep focusing on R&D. We plan to surprise the market with our solutions. The smartphone will not just remain a mobile device. It will become a hub to connect a lot of equipment. The future generation of cameras and processors is going to transform the smartphone into a third eye. All this will open large rooms for innovation in the indoor location technology field.