Sweden – the natural base for "Internet of Things"

Maria Zamkova

Maria Zamkova from Fenix Legal KB updates on the innovation in Sweden, after being labelled No 2 in the world last year, and highlights the Internet of Things as a key cause of the increased growth.

"Creativity and innovation flourish in Sweden" said Mr Mikael Damberg, Minister for Enterprise and Innovation, Mr Morgan Johansson, Minister for Justice and Migration, and Ms Susanne Ås Sivborg, retiring Director General of the Swedish Patent and Registration Office (PRV) in a debate article, published in the Swedish newspaper Svenska Dagbladet on January 3, 2017.

In the March/April 2017 edition of *The Patent Lawyer Magazine* we noted that Sweden, according to the 2017 Bloomberg Innovation Index, has climbed to No 2 of the world's most innovative economies after South Korea, but patent activity was only ranked as No 6 on the list.

The Swedish government has a special project, investing SEK 80 million (approx EUR 7,9 million) for the years 2016-2019 to increase the awareness of intellectual property in Sweden. And now we see the positive result of that project.

Swedish businesses saw a record number of their European patents approved in 2017. The European Patent Office (EPO) approved 2903 applications from Swedish businesses 2017, which is 9,1% more than 2016, and 50% more than 2015. The Swedish telecommunication giant Ericsson was the tenth most active applicant at EPO 2017, with 1 373 patent applications.

According to a press release published by PRV on February 9, 2018, the number of granted patents in Sweden also increased with 16% (1031 patents, compared to 2016 with 866 granted patents). At the same time, PRV notes that the number of patent applications filed at PRV has decreased, but that Swedish companies kept their patents alive longer than before. The life expectancy of a patent 2017 is 13.3 years, compared to 11.5 years 2010.

Mr Stefan Hultquist, Head of Unit at PRV, states in the press release that "the fact that more patents are granted and live longer, while the number of patent applications becomes less, signifies a maturation process where Swedish companies are seeking fewer and more strategic patents".

The most active Swedish technology for patent protection is digital communication (30% of the applications), followed by transportation, medical technology, telecommunication and civil engineering.

According to Mr Hultquist the "Internet of Things, telecom, and self-driving vehicles are the hottest areas for patent applications right now".

One example is Scania CV AB that got a patent granted for "Platooning orchestrator", which is defined as "a method and a platooning orchestrator for coordinating arrival of a set of vehicles to a merging point at a predetermined time period, where the set of vehicles is planned to form a platoon" (Appl No 1651160-2). In other words: Trucks are driving in a column and only the first vehicle has a driver, but the three rear lorries are careless. Scania got 295 granted patents in Sweden last year and applied for 243 new ones.

Another example is Svenska Cellulosa Aktiebolaget SCA, with a granted patent for a sensor that is put into toilet paper rolls at airports and measures when the paper is over. In this way, cleaners can be more effective.

Unmanned Aerial Vehicles (UAV) is another trend, but not the construction itself, rather how they are applied in, for example, different measurement methods, such as monitoring forests down to the smallest trees.

It is no coincidence that this type of technology is the focus of Swedish patent applications.

Résumé

Maria Zamkova

Maria is CEO at Fenix Legal KB (Stockholm, Sweden). She has a Master of Industrial Design and is a patent and registered EUIPO trademark and design attorney. Maria is an expert in European Patents, assisting national and international clients in IPDD, and is a frequent lecturer in "IP and business strategies". Maria's email address is mz@fenixlegal.eu

The Internet of Things

"Internet of Things (IoT) Sweden" is a strategic innovation programme, located at Uppsala University. The programme was founded on September 15, 2014 by the government research councils Vinnova (Sweden's innovation agency, with the vision to strengthen Sweden as a country of research and innovation), the Swedish Energy Agency (a subordinate to the Ministry of the Environment and Energy), and Formas (the Swedish Research Council for sustainable development). IoT Sweden identifies, analyses, and monitors IoT projects with the goal to reach maximum effect for Sweden as an innovative society.

IoT Sweden co-operates with a number of Swedish companies and universities and it gives results. Some examples of ongoing projects are:

LoV-IoT, Air and water monitoring with IoT: In today's cities, people and sensitive nature are subjected to noise levels and levels of pollutants in both air and surface water that, in some cases, are over set limits. The City of Gothenburg is now developing an IoT platform to which sensors are connected to be able to keep better track of pollutants and inform the public.

Smart property services with IoT: In Umeå, in the north of Sweden, environments are now being created to test IoT solutions for smart property services. Sensors are being installed at Umeå Municipality, Umeå University, and the County Council. Sensors at the University Library's study workstations give students the opportunity to directly see where there are available places to work, without having to go around looking. Sensor data will also be used to plan maintenance in new ways, so that only premises that have been used are cleaned, instead of doing it according to a predetermined schedule, and they will also be installed in public premises to show citizens where activities are under way and to attract visitors.

IoT's in healthcare in Skellefteå (IVoS): In the city of Skellefteå, new solutions are created by using IoT devices in the homes of elderly residents. The devices are used to discover events that may require attention. The IoT device's sensors send data to the technical platform, which processes data from several different IoT devices into information about activities. If there is a deviation from the regular pattern, relatives and/or municipal healthcare staff are notified, with the aim of creating more secure housing.

IoT is also a reason why more and more Swedish industrial companies choose to take home their production from abroad. Last year, the Swedish government launched the new industrialization strategy "Smart Industry - a New Industry Strategy for Sweden", focusing on the areas of digitization, sustainability, competence, and innovation.

Efforts on robotics, climate-smart industry, and an upgrade of high school programs are the main ways for the government to assist both those companies that move their production back to Sweden, as well as to increase the knowledge of how to streamline the production for small and medium-sized enterprises and subcontractors for re-sellers.

In an interview of December 6, 2017 with the Swedish magazine Ny Teknik ("New Technology"), Minister Damberg presented the project and concluded:

"Sweden is ranked five in the world in robotic density. We want to defend or even better improve that position".

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