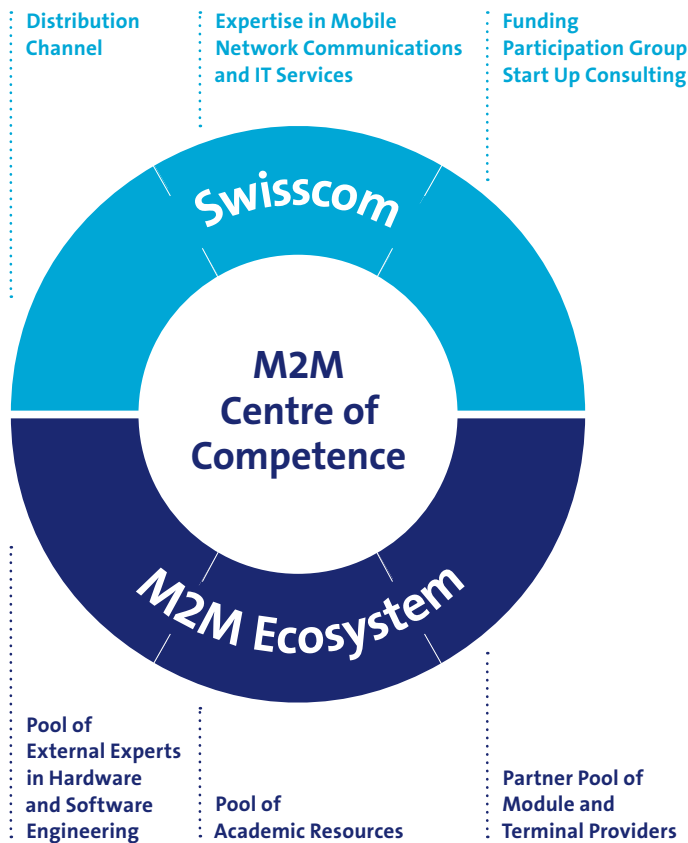




From concept to market:
A look at how Swisscom
supports M2M innovation.

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Swisscom's M2M ecosystem team encounters many small businesses with creative ideas about how to use communications to improve their products as well as people's lives, but they are often uncertain about how to bring a new product to market. M2M technology is becoming increasingly affordable and easy to deploy, but M2M projects still face some particular challenges in the use of innovative technology and the need for scalable computing systems to manage devices and data. Swisscom has extensive experience in this field and can use its expertise to support a good idea every step of the way to a launch.



M2M technology has immense untapped potential.

Machine to machine communication (M2M) has the potential to transform people's lives by creating the Internet of Things. Combining real-time information from buildings, vehicles, energy and transport infrastructure, weather forecasting equipment, smartphones and other devices can improve energy efficiency, revolutionise healthcare, increase the life of equipment and make people's lives easier in a myriad ways.

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People and organisations across the globe are finding new ways to collect and use real-time information and creating new business models in the process. Heating and ventilating systems can now be optimised remotely to reduce energy consumption, and be linked to the Smart Grid to cut electricity use at peak times, thus reducing the need for power generating plant. Real-time information about the performance of equipment, whether car engines or power plants, can be used to schedule preventive maintenance, both eliminating breakdowns and allowing repair crew's time and vehicles to be utilised more efficiently. Companies can develop closer relationships with their customers, improving customer satisfaction and making product development more relevant. Healthcare can be improved through remote monitoring of chronic conditions.

Real-time monitoring generates huge volumes of data that can be analysed to identify trends and produce reports automatically. An M2M product usually includes a cloud computing platform to make the most of the valuable data continuously being received from devices and target the company's activities more precisely. For example, by monitoring the performance of a chiller in an air-conditioning system a routine maintenance call can be scheduled at the first sign of a problem, before an emergency call-out is needed for a breakdown. The data can also generate additional revenue streams: for example, linking data on energy use to the electricity supplier can generate a revenue from «demand response» – reducing usage at peak times.

This paper describes the process of bringing a new M2M product to market, using the example of the Limmex emergency watch. Swisscom believed in this product, and it was a good fit with the company's strengths, so they backed the project throughout development and launch. Although it had taken a while for the founders to get initial financing, once Swisscom became involved in its development the watch was launched within two years and the company continues to support the product as its market grows.

Swisscom can help make the most of an M2M idea.

There are many situations in which real-time information can be used to create a new product or service. It can be used to streamline processes, tailor a product or service more closely to the user's needs, or to help avoid potential pitfalls. The best ideas come from people who really understand both the potential user's situation and how the technology can improve it.

In the case of the Limmex emergency watch, the idea came from a conversation over coffee. The founders were already working with a tele-medicine product and were in contact with the councillor heading the police and emergency departments in Zurich. She told them that, almost every day, elderly people are found dead in their homes because they have had a fall, a heart attack or a similar problem. She thought there should be a system that made it very easy for an elderly person to raise the alarm, wherever they might be.



The Limmex team responded to the challenge by investigating why the existing tele-alarms and emergency phones were not preventing these deaths. For the tele-alarms, where the user wears a pendant with a call button, they found three main problems:

- > these only work in the home and people are also concerned about the fifty per cent of falls that happen outside the home
- > the fixed wire installation requires a technician and causes many false alarms because of technical problems
- > people find it stigmatising to wear such a visible device.

With emergency phones there was a different problem. Seniors tend not to keep the phone with them when they are at home, so the phone was often out of reach when it was needed, either on the kitchen counter or the bedside table.



The team came up with the concept of the emergency watch; something the owner might be happy to wear all of the time.

The right team is key to a successful product launch.

Any new product team needs people with the right skills who work together well. At this early stage, good teamwork and personal chemistry are vital. If the team lack skills or knowledge in a particular field, they must then find sources of help and advice to enable them to move forward.

There were three founders of Limmex: an electrical engineer, a watch expert who had designed over 100 watches and an economist and former management consultant. They tested their business plan at a competition organised by ETH Zurich technical university and the management consultants McKinsey. The business plan won a place in the top ten, which gave the team the confidence to found a new company in order to develop their idea into a product.



Seed funding can come from government schemes to support innovation, angel investors, potential partners and crowdfunding sites on the Internet. In the initial stages, Limmex had support from two charitable foundations that aim to help the elderly (Hatt-Bucher-Stiftung and Age Stiftung) as well as the Swiss Government (CTI).

«In Switzerland if you are looking for mobile phone expertise and it's really important for you to talk to the best in class, that is Swisscom. For us, it was really important to have the operator with the best coverage.»

Pascal Koenig,
Limmex
co-founder



For Limmex, Swisscom was the ideal technology partner.

Swisscom often works with partners who have limited technology expertise and both helps them to find technology partners and provides support in developing the communications solution using Swisscom's own engineers. In Limmex's case, they turned to Swisscom for help with mobile connectivity, but found that Swisscom's M2M team could offer much more. The Limmex team already had technology skills and had started by working on the technical aspects of the project. In addition, they gained expertise in micro-electronics and acoustics from Phonak, the world leader in hearing aids. Limmex also required outside expertise in radio-frequency engineering, to make an antenna for a small device containing a lot of metal, and they had found that in an English company but Swisscom was able to help them improve the antenna.

It was a little daunting for a small startup to approach such a large organisation, but this proved not to be a problem. «We got in touch with Swisscom innovation and they were able to put us onto the right people.»

«The speaker has the sound quality of a hands-free phone. They did a lot of user testing to check that this worked for emergency calls.»

Olivier Thyès,
Head of Product
Management,
M2M Centre
of Competence,
Swisscom



Swisscom helped create a good user experience.

A successful product works reliably, does what customers expect it to do and gives them a good experience – every time. The big technical challenge in developing the Limmex watch was miniaturisation. Phonak helped Limmex to get a good acoustic in a tiny little watch and Swisscom helped with the testing.

There were some important decisions to be made at the start, one of which was to use a SIM card to connect directly to a mobile network, rather than another technology such as WiFi, or a bluetooth link to a smartphone. The need for global coverage, outdoors as well as indoors, and to work when the phone is not to hand made the SIM the obvious choice.

Swisscom was able to help the Limmex team find a SIM with the right form factor to fit inside the watch.

«They were one of the first companies to use our SIM chips, which let them reduce the thickness by one or two mm, important for an elegant watch. And then we assisted them with testing the antennas and the acoustics. They'd started designing for the 1800 MHz band and we recommended that they switch to 900 MHz for better indoor coverage, so we worked on the re-design of the antenna.»

Another important decision was whether to include GPS location to find someone who was not able to talk. This was ruled out because a long battery life is key to the success of the Limmex watch. GPS would be an additional continuous drain on a battery that must also power both the watch and the alarm call functionality.



«I'm so happy now that its all cloud based, we can steer everything from the cloud. If you press the button you are connected to the cloud and there are so many services that we can add over time with that and that is really a key strength of Limmex.»

Pascal Koenig,
Limmex co-founder

«We were involved in the analysis of the call set up and routing – going through multiple countries presented challenges – so we made quite a lot of recommendations for them on the network side.»

Olivier Thyes, Head of Product
Management, M2M Centre
of Competence, Swisscom

Swisscom pushed Limmex to design processes at the start.

All products need processes to support them: order processing, shipping, invoicing, complaints handling etc. M2M products often have more complex processes than most and tend to involve large numbers of devices. Managing these devices, knowing where they are, collecting data from them, updating software and firmware, is a major task in itself. Swisscom's Connectivity Management Platform provides Limmex with a device management system that is scalable enough to manage large numbers of SIMs. It can be used to manage the device settings, define the countries in which the watch can be used and set up alerts for specific events.

Pascal Koenig: «Swisscom very much pushed us to think end-to-end and design these processes up front, from the first time a potential customer looks at your website up to the time that they terminate the contract with you. They helped us a lot to optimise that; and there are so many details. We now have 10k users and you need something to manage the connections efficiently, otherwise you need five people just to look at the bill. Platforms are really important to an efficient management of the connections.»

The Limmex team initially thought that the watch would be a very intelligent device, but quickly realised that it would be much more practical to put the intelligence in the cloud. Entering the numbers to be called, setting up the calls and managing the device itself is all done using the web interface.

The Limmex watch is unusual as an M2M product in that it handles a lot of voice and, at the time, traditional voice operators did not have affordable services that could handle calls from around the world and forward them automatically. Limmex uses a hosted VoIP platform that gave them the ability to start small and grow as required, while always having global reach. Despite the fact that Limmex was using a competing voice service, Swisscom was able to help with the call routing.

Swisscom know how to price services combined with hardware.

An M2M product includes both hardware and a service, so there is a spectrum of choices for setting prices. For example, there can be a one-off payment that includes the service for the life of the device, or the device can be free and the cost recouped from ongoing service charges. Different options may be appropriate in different circumstances depending on the type of product and the market being targeted. The free device option may prove difficult for a new company because of the impact on cash flow, while the single up-front payment eliminates ongoing contact with the customer, which could otherwise be valuable in the future. These are decisions that Swisscom has been making since the mobile phone market began, so they are well placed to advise on these matters.

«We had discussions because there are phones out there just for emergencies so we looked at how they priced the watch and how to fit it into the marketing scheme.» Gerhard Schedler, Head of the M2M Centre of Competence, Swisscom.

«To get such a product into the market is always tougher than you think in the beginning, so it's always important to have a partner that can help with marketing. For us it's an emergency watch rather than a phone so we decided to resell it at Quing.com where we sell our smart home solutions. It's a very good product for this area.»



Gerhard Schedler,
Head of the
M2M Centre
of Competence,
Swisscom

After extensive discussions with Swisscom, Limmex chose to combine an initial payment with an ongoing service charge. The watch is available with two options:

- > the basic option in which the user can define up to 10 numbers belonging to friends and family that will be called one after the other until someone answers
- > the premium service in which the user defines three numbers and the call is routed to a help center if those are not answered.

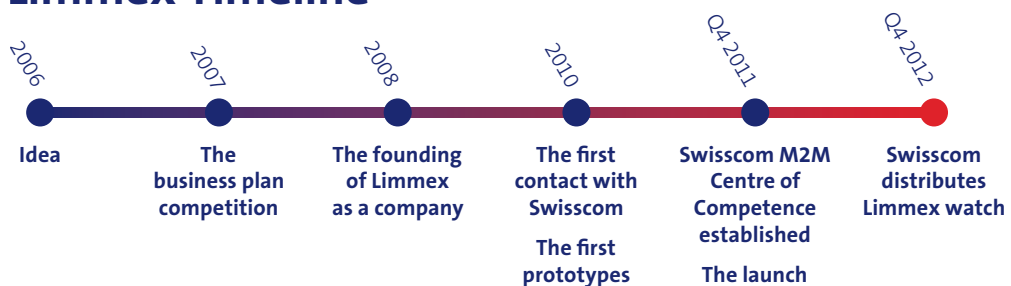
Pascal Koenig: «Our reasoning was that it was an elegant, nice watch and we want to get something for that and then it's important to us to have access to the customer, so not a one-time payment because we want to keep in close contact with the customer and that is one of the assets we have, to have tens of thousand of customers, so we decided to go for something in between – up-front plus monthly.»

When Swisscom first became involved with Limmex, one of the founders' main concerns was how to make the business model work. They needed to be able to offer their customers an attractive price while paying for the connection to the SIM card at all times and in any location. However, Swisscom has roaming agreements with more than 540 operators, more than many larger mobile operators, which made it possible for Limmex to offer global functionality.

Swisscom provided access to its own distribution channels.

One important advantage that Swisscom is able to bring to an M2M product launch is the use of its established sales and distribution channels. Limmex experimented with a number of channels including Swisscom's various retail outlets, as well as watch retailers, pharmacies, hospitals and electronics retailers.

Limmex Timeline



A phased roll-out allows the market to be tested.

Pascal Koenig: «You need to start in a rather small area and really try to find out how it works and be very, very close to the end customers and really understand the product. The first production lots are usually not optimal, especially with a complex product, and you need to optimise the hardware and the service behind the product and from there start to scale.»

Limmex has achieved a turnover of millions of Swiss francs since it launched the watch in Switzerland in the fourth quarter of 2011. After that first meeting with the councillor in Zurich, it took two years of considering the business plan before the team committed to the idea and the company was founded. Once the company started working with Swisscom, progress was swift. The watch was launched to industry acclaim after two years of intensive work on the technology and the processes behind it.

Limmex launched the product in Germany towards the end of 2012, and is now rolling out to France and Holland, with Swisscom as a connectivity partner. Limmex is also talking to organisations in the UK and Scandinavia about developing a market in these areas. Pascal Koenig: «We need to be really careful about this roll out process. Someone said we could sell 10k in Turkey and you are tempted to go into discussions and to follow up, but the service component is rather complex and you need to think about it very carefully.»

Continuous innovation is essential.

However successful the initial launch, it is important to keep thinking about new ideas and to find new ways to please your customers. The market is always changing and competitors will try to emulate any success. With Limmex, Swisscom is involved in discussions about future products, such as different form factors.

Swisscom is always looking for new innovators.



The M2M team at Swisscom is keen to work with other companies that have ideas for innovative products. The company has set up a dialogue forum that takes place twice a year at which the M2M team invites partners in the M2M space to present to other customers. The event is supported by a magazine and by on-line forums where M2M partners can talk to each other. When choosing an M2M partner: «... at the end of the day, its really important to have a close connection and a team that you trust and is quick and flexible. What I always liked about Swisscom is that you have people who really want

to support you and are flexible to support you. I very much like the current M2M team, they are fast and they really want to open us up to whomever at Swisscom can help us.» Pascal Koenig