

## HOW TO BUILD A HUB

The strategic policies aiming to boost Luxembourg's economy focus on different areas of activity, but all are dedicated to the pursuit of excellence. In the field of IT, things are no different. The country already builds on a strong tradition in this area, as reflected in outstanding capabilities and powerful infrastructure. *FOCUS* spoke to Jean-Paul Zens, director of the Media and Communications Department at the Ministry of State, and to François Thill and Pascal Steichen from the Ministry of the Economy and Foreign Trade, to find out how far the country has come, where it is seeking to go in the future, and why top-flight expertise in ICT security is central to this process.



That Luxembourg would position itself at the forefront of ICT development should come as no great surprise. Indeed, the government department of which Jean-Paul Zens is a director was set up in the mid-1980s when the decision was taken to invest in a company providing satellite services.

Luxembourg has always cultivated a taste for new technology. "If we look back in history", says Mr Zens, "one of the first commercial radio stations in Europe was launched here. At the beginning of the 1930s, Luxembourg was thus already a player in the media world thanks to RTL. Foreign investors chose Luxembourg because commercial radio was not allowed in their own countries". RTL developed from radio to television, but with that came the problem of frequencies: TV has a much shorter range than medium- or long-wave radio, and the government had to take this into account or face the prospect of losing its media sector. That was when the satellite proposal came into play. And then the internet came along...

"We had to assess how to transform this country from a media hub into an internet hub", continues Mr Zens. "Ten years ago we started travelling around to see what we would have to do, what kinds of concepts we would need to maintain our USP (Unique Selling Proposition). As a small country, we cannot have a global presence in the digital economy. We had to choose what we would do to specialise". A first step in this direction was the attempt to attract some blue-chip companies to the Grand Duchy. It was successful: "We got AOL, then Amazon.com, iTunes, PayPal, eBay... Skype was created here. In the past five or six years we have succeeded in positioning Luxembourg on the map as a country that is known internationally for playing a role in e-commerce".

### Developing services

Mr Zens believes that the next step for Luxembourg is to "deliver more concretely" as economies across Europe develop. "The European economy is more and more service-based, and within the EU, Luxembourg's own economy is the most service-driven of them all, especially because of the financial sector". The more an economy is service-based, the more dependent it becomes on IT. This is a simple but salient fact. "This creates opportunities, but it also creates risks. The opportunities arise because we are highly advanced in using IT", he says, adding that "the financial sector has been using it for years, and other industries are catching up, or have done so already. IT is the lifeblood of their productivity and keeps Luxembourg's financial sector competitive. Per capita, this country has the highest number of IT specialists in the EU. That is an indication of the importance of IT, but also of our levels of innovation and development".

This sheer dependence on IT is where Mr Zens sees the risks involved. Expertise in securing IT is available, but the more data is exchanged, the more vulnerable you can become. "This risk, this vulnerability means we have to invest in research into ICT security, reliability and trust". Indeed, the University of Luxembourg is already taking this into account, studying the construction of secure networks and datacentres and developing software that tackles spam. It is also advancing the know-how needed to fight cyber-attacks. Mr Zens remarks that perception of the risk is becoming more prevalent. If Luxembourg wants to play a major role in the development of the digital economy in Europe, we have to choose particular areas of expertise that define our pole of excellence. One such area is in security, resilience and trust regarding the internet".

To that end, the government has declared that one of its seven priorities for investment in the University focuses on IT in general, and on the institution's Centre for Security, Reliability and Trust in particular. "We believe that security and trust is an underdeveloped segment of the European research field", Mr Zens points out. "This country can position itself as a strong player in IT risk management. The University already enjoys strong Europe-wide recognition



Jean-Paul Zens, Director, Media and Communications Department, Ministry of State

when it comes to security, and we expect that we will be able to attract researchers from the top level to come and work in Luxembourg. We are constantly building up elements supporting our vision to create a major internet hub in this country".

### Boosting technology

Over the past six or seven years, work has been carried out to reinforce the connectivity between Luxembourg and the other major internet hubs in Europe and around the world. "Teralink and LuxConnect are examples of these developments. They connect us to the best possible networks in terms of speed and latency, enabling us to exchange data amongst ourselves and with the world. Once that data is here, it must be stored in a secure way. This is why we've built state-of-the-art data networks



and centres over the past years. Most of these are Tier 4 – the top level. We have the infrastructure to keep data in a spirit of trust and reliability, as we have been doing in the financial world for many years. We want to carry that trust over from finance to data”.

In addition, the government’s broadband plan will enable all residents and businesses to have very high speed broadband. From 2013, internet access with 100 Mb speed will be available to 80% of the population. This is far beyond

the benchmark in Europe. In 2015, a quarter of the population will benefit from service upgrades to 1 Gb. As Mr Zens points out, data consumption will only continue to increase, and access must be available across the board and across the territory, irrespective of where the internet users are located. “Upload speeds have to be much better. This is vital across Europe, not just in Luxembourg. We, however, are being very proactive and looking at this very closely”.

The development of Luxembourg as a hub in the digital economy will thus be founded on technological advancement, security and trust, but there is also a programme in place at the regulatory level, whereby “flexibility will be a priority in terms of regulation for players in the digital economy. Our achievements in the past should serve well in the future when it comes to our credibility, especially when compared with larger countries”.

### SMILE and the whole world smiles with you

“Security made in Lëtzebuerg” (SMILE) is an Economic Interest Group created by five public sector partners pursuing a shared goal: that of establishing a coordinated and diversified group for ICT security and thereby creating a centre of excellence. It was founded in May 2010 by the Ministry of the Economy and Foreign Trade, the Ministry of National Education and Vocational Training, the Ministry for Family Affairs and Integration and the associations SIGI and SYVICOL. SIGI is Luxembourg’s Intermunicipal Association for IT Management (Syndicat Intercommunal de Gestion Informatique), and SYVICOL is the country’s Association of Cities and Communes (Syndicat des Villes et Communes Luxembourgeoises).

*FOCUS* asked François Thill and Pascal Steichen at the Ministry of the Economy and Foreign Trade for details. The mission of SMILE, says Mr Thill, the president of this initiative, is to act as a platform for coordination, advocacy, communication, media and technology, while integrating services, infrastructure, platforms and skills among existing partners. Activities are organised in four main areas: awareness-raising and education activities, in the context of the “Cyber Awareness and Security Enhancement Structure” (CASES) initiative; incident response and threat analysis services, provided by the Computer Incident Response Center Luxembourg (CIRCL); research and development; and standardisation and normalisation.

### Spreading the word

CASES is an information platform set up in 2003 by the Ministry of the Economy and Foreign Trade as part of the implementation of the first pillar of the master plan for security of systems and information networks. The activities of CASES tie in with several European initiatives dedicated to awareness and prevention in the field of ICT security for individuals and businesses. They include BEE-SECURE, a Luxembourg project of campaigns, fairs, workshops and training events that are designed to help youngsters and citizens to benefit from the advantages of the internet without facing unnecessary risks. Initially focused on individuals and on the younger population in particular, the CASES platform now extends to raising awareness in both corporate and public organisations.

### Dealing with threats

As our reliance on information technology increases, so does the importance of services like CIRCL. Luxembourg with its thriving financial services sector, an early adopter of new technologies such as cloud computing and high-speed internet, has a particular interest in assuring quick response to any potential threats, according to Mr Steichen, the president of CIRCL. In this small nation, the risk of a cyber-attack on one financial institution would be a threat to the reputation of the country as a whole.

Parallel to and in close cooperation with CIRCL, whose constituency is local government and the private sector, the government, together with the National Centre for Information Technologies (CTIE – Centre des technologies de l’information de l’Etat) and the Ministry of State, provides substantial investment and resources to the new governmental CERT covering the governmental services as well as large scale incidents within operators of critical infrastructure.

The recently created “Cyber-security Board” was set up by the Luxembourg government to focus on strategic activities. Representatives of six national administration offices meet in order to improve coordination.

The activities of SMILE in the fields of standardisation and normalisation include encouraging organisations to align to the international standards of best practices, such as the ISO27000 family of standards, as well as contributing to the development of standards and legislation, both nationally and

internationally. Research and development remains an objective of high importance for the SMILE group, which promotes and participates in a variety of research programmes on ICT security, in partnership with international and national actors such as the University of Luxembourg and the country’s public research centres.

One of the highlights of this work is the organisation of the 2011 edition of the annual international conference “Hack.lu”, scheduled in September. The event is intended as an open conference that will provide the various actors in the computer security world with an opportunity to discuss security issues, privacy, information technology and their cultural and technical implications for society. ♦



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