



Picture by Gemalto NV

Arthur D. Little Olivier Piou, with your solutions deployed nearly everywhere on Earth, you are a privileged observer of trends. What security issues keep CEOs awake at night?

Piou Security issues (i.e. areas related to securing data, users, transactions...) are no longer the sole responsibility of IT Managers. They now definitely belong to CEOs' and Executive Committees' agendas. In some organizations, these matters have already reached the Boardroom, based on an increasingly clear understanding of the fiduciary duties and risks linked to network intrusions or data thefts.

Not all industries are at the same level of maturity. Governments and banks are the most advanced. Telecom operators also have a good understanding of the risks, but may not yet fully grasp the implications of their Cloud services offerings. External providers of transaction fulfillment services are far less advanced than their positioning on the value chain would let you think. Finally, and in spite of numerous recent events such as data thefts at Target and Home Depot, which led to a sudden rise in awareness levels, retailers still have a long way to go before they fully understand the sensitivity of customer data they handle, such as credit card details of course, but also home information including access codes for example.

Different factors explain why all industries are not yet correctly equipped with digital security. First of all, old habits die hard. And in any industry where entrenched incumbent solutions exist (e.g. buildings access security services), substitution takes time to implement. From a geographical perspective, US corporations are much more aware of their commercial and reputational risks since they were hit the hardest in recent publicized events, and European corporations are clearly behind. Will they wait for scandals to wake up? Companies like Gemalto, often perceived as conflicted when they bring up the matter, have limited power to raise awareness, and unfortunately tend to be called in after a crisis.

Security issues are no longer the sole responsibility of IT Managers.

“We should embrace the future for all the opportunities it holds, and have faith in it.”

Gemalto security solutions and devices, including SIM and payment cards, identity and access credentials, provisioning solutions, and the management of individuals' rights, provide trust and confidence in everyday transactions and are in the pockets of 1 out of every 2 human beings in the world today.

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Arthur D. Little What do you think top management should do to better address security?

Piou To make sure CEOs address correctly the issue of security, it is necessary for them to understand first that security is dynamic: what protects efficiently today will erode, not be sufficient tomorrow, hence maintenance is as necessary here as it is for tangible assets. Three components are then necessary to deploy end-to-end security protocols: identify the users and manage their rights, individually; count and monitor the computers and network boxes that are used by the company; and finally defeat the purpose of intruders by strongly encrypting all data. On that aspect, retailers can learn from Zappos, the shoe selling website, that limited the impact of being hacked as customer data that was stolen was well encrypted. Finally, senior management has to make the best choice between developing security systems on their own or relying on specialists.

CEOs should finally be aware that, with the development of machine-to-machine communication, they will not have to deal with new problems but with an extension of those already identified. Recent cases

show indeed that this Internet of Things is touched by the very same security issues as the Internet of Humans: fridges spamming computers; traffic lights being hacked...

Arthur D. Little You have been quoted several times calling for the development of an international body to manage the Internet. Where do we stand?

Piou Today, individuals use the Web more and more on their smart phones. They do not fully realize that the "Internet age of innocence" is over, that they are surfing only the surface of a very deep ocean that conceals very high risks (see the recent intrusion suffered by JP Morgan) or players that are now rushing into the monetization of users' stolen data.

Neither service operators nor politicians have taken the role of either enlightening the public about the risks or enforcing the presence of for example preloaded anti-virus solutions on mobile phones. An "Internet World Health Organization," sponsored by a recognized active international cooperation body such as the OECD, could have conducted education, best practices development and sharing, and "vaccina-

tion" campaigns, enforcing the deployment of more secured devices.

We are now heading towards a multi-polar world with countries reacting according to their local history. Each builds local regulation, with laws on data ownership as diverse as for gold ownership at the time of the gold rush, when the US considered sub-soil the property of the land owner, while Europe considered it a state property. Political harmonization of regulations is not a viable option with such striking differences, but we can still be optimistic as regulation seems to evolve with awareness, with the European Parliament introducing already for example a "right to forget" on the web.

Arthur D. Little Gemalto offers solutions in areas that are often the "topic of the day" for the media: Machine-to-Machine communication, NFC Transport solutions... What is your view on them?

Piou Gemalto is a technical operator bringing security solutions to clients who themselves market their branded services. The public knows and buys the latter, while Gemalto remains behind the scenes, involved each time there is a need for checking the identity of and granting access rights to an individual, or for enabling the monetization of these rights.

An adequate balance has to be found between security and convenience. And it depends on the situation. Security will be paramount when you want to access, say, a nuclear facility; it is also very strong when

you deal with the issuance of a passport; convenience will play a greater role when you want to enable small transactions, or those which have no monetary implications. Let me share a few concrete examples:

- The US FED or the SWIFT financial services organization turned to Gemalto as potential breaches in their systems could destabilize entire economies. They require much higher levels of security than even those already demanded by banks.
- On the contrary, Public Transportation Authorities' key concern is much more the convenience they can offer to their users, through solutions such as the Oyster card in London or the Navigo Pass in Paris – a simple-to-use contactless universal travel card.
- Machine-to-machine activities will replicate the same variety of situations. Remote metering and connected cars are presently addressing more convenience and productivity than security. On the other hand, e-health home solutions require stricter control of users' privacy.

Arthur D. Little We all expect a lot from these innovations, but will they eventually materialize?

Piou We at Gemalto have a very strong sense of digitalization and its extension into the economy. Unsurprisingly, we are most successful in countries that have themselves understood the importance of

digitalization. Countries like the Nordics or Singapore have seen it as an opportunity to differentiate themselves and project their economies into the 21st century.

The analogy can easily be made between the development of digitalization and that of some technologies now widely used like electricity or aviation. First comes the phase of scientific discovery (the Wright Brothers' flying machine), followed by the appropriation by states of these nascent technologies for strategic purpose (creating air forces), and only then by the progressive deployment and standardization of the technology for usage in everyday life (secure air transportation as a common way of travelling).

What is uniquely fascinating with digitalization is that it opens a new world. This has been made possible by the invention of the analog-to-digital converter, the bridge between the two worlds. It allowed us to optimize with embedded computer systems and handle complexity levels that no analog technologies could have managed. You can now go back and forth between the real world (analog) and the virtual world (digital) to simulate and optimize it. And we use it every day, in the CDMA technology of our mobile phones for example.

The more digital the world becomes, the more traditional players must adapt, as new economic rationales appear. If you consider the acquisition of WhatsApp for \$17 billion, you will not find any justification of this price in its traditional tangible assets, such as plants, mines or infrastructure... And new risks will continue to appear with the proliferation of digital applications and usages. But I am confident that adequate solutions and regulations will be developed to protect end-users as we move along that path, just like you can safely and easily use electricity or fly in a commercial plane today.

Arthur D. Little But has digitalization really brought convergence?

Piou Convergence between service providers did not occur in the analog world (your credit card did not become your multi-application support, including your loyalty programs or transportation passes) because the induced legal complexity was too high compared to the convenience that would have been created for the end-user. Moreover, the card itself was cheap, so there was a limited economic incentive for banks, retailers or public transportation authorities not to continue to use different cards.

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On the contrary, business convergence is greatly facilitated by their digitalization. With the emergence of mobile phones as the main digital user interface device, convergence curiously did not bring the same legal issues. End-users do all the work when they accept the terms and conditions for use, when they download a new application.

Whatever the final configurations, Gemalto will use its accumulated expertise to provide the appropriate security solutions. It will remain "invisible" to the man in the street, as they are usually not interested in understanding the technical aspects of their

phones, be it related to the connectivity solutions they use (GPS, 3/4G, NFC...) or the security solutions.

Arthur D. Little What are your personal learnings from merging Gemplus and Axalto in 2006?

Piou Already at the time of the merger, we anticipated that things would be easy, for the simple reason that the two companies were sufficiently similar for the teams to quickly understand each other. Creating Gemalto provided the opportunity to unite two complementary strengths: entrepreneurial creativity and robust processes.



Picture by Gemalto NV

One piece of advice that can be shared in terms of making a merger a success is to deal with the critical human decisions internally, and thoroughly. You should not externalize managerial choices, but take your time and meet with the people you will be working with, day in, day out. You should also be prepared to help people from each "side" to become at least 60% like their counterparts, not just 30% or 50%. This is the solution to creating lasting unity within the merged entity.

Arthur D. Little What pieces of advice would you share more generally on success?

Piou To remain the leader within any given industry, the first rule should be to continually innovate, accept that you need to question yourself regularly and organize your own self-obsolence. We understood that a long time ago within Gemalto and it has driven our capacity to reinvent ourselves time after time in terms of technologies deployed and solutions offered. Agility is

not only a fashionable word, it is a necessity, especially in technological and digital environments.

Arthur D. Little You chose to participate in the 34 "industrial recovery initiatives" launched by the French government last year, and delivered your action plan for "Contactless services." What lessons can you derive from such an initiative, both on cooperation between industries, and between Public and Private Sectors?

Piou In order to prevent collusion, regulations forbid industrials to discuss transverse issues. States and standards committees are therefore the only bodies that can gather the different players to share their vision and build initiatives together. In the specific case of France, this initiative by the government has proved to be very productive.

Contactless solutions have been delayed in France because, without a clear industrial strategy at government level, the impetus

was left to a range of scattered players. And Paris, the city with one of the most ancient public transportation networks, was lagging behind initiatives like Octopus in Hong Kong. The work conducted within the Contactless initiative enabled participants to reach rapid agreements that would otherwise have taken years or never happened due to competition laws. A shared vision is also a good way to avoid potential maverick actions further down the road, and provide a good return on investments.

The resulting detailed Contactless action plan will allow an easy-to-understand common base (e.g. a unique €20 threshold for PIN-less contactless payments), thus will help accelerate the adoption of contactless services, not only in the field of financial transactions but also in public transportation and administrative procedures. This avoids confusion, favors usage and generates substantial income and savings for the Government.

Arthur D. Little To conclude, what would you say are your proudest achievements?

Piou I must admit family remains the key value for me, above all! But regarding Gemalto, two achievements clearly stand out in my mind. First, we have been able to create an international firm, with a very strong spirit. Second, we had the courage to make decisions that went against the prevailing current, and have been proven right by history. Back in 1995, observers were saying we were digging our own grave when we introduced multi-application cards. They saw us as endangering our volumes, whereas in fact we opened the door to new applications... and therefore more volumes!

Arthur D. Little What are you expecting from the future?

Piou Looking forward, while the Internet remains still a frontier to cross, many new challenges (space travel, nanotechnologies, bioethics...) await us in both our professional and private lives. Let's tackle them!



Olivier Piou (1958)

Chief Executive Officer of Gemalto NV

Olivier Piou conducted the merger of Gemplus and Axalto which formed Gemalto in 2006, and has been its CEO since then. Before that he

was CEO and Board member of Axalto (2004-2006), which he introduced to the stock market, and President of Smart Cards with Schlumberger (1998-2004). He previously held a number of positions with that

company across technology, marketing and operations in France and the US (1981-1998). He was a Board member of INRIA, the French national institute for research in computer science and control (2003-2010), and President of Eurosmart, the international organization representing the chip card industry (2003-2006). He is a Knight of the Legion of Honor in France. Olivier Piou also is member of the Board of Directors of Alcatel-Lucent SA.

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