ICT Spring 2019: AI/Digital Summit

Press release

For immediate release

Luxembourg, May 27th, 2019 **– A new edition of ICT Spring was held on May 21st & 22nd, with more than 150 experts sharing their knowledge and discussing the latest Digital, FinTech and Space trends. ICT Spring, a two-day event created in 2007 aims at facilitating the meeting of minds, encouraging emulation and networking with industry leaders, took place at the European Convention Center Luxembourg, at the very heart of Europe. More than 5,000 professionals attended this two-day conference, during which Artificial Intelligence was one of the burning topics. Experts discussed different topics such as "AI in everyday life", "Unleashing Human potential" and "Tech all over: From trends to fashion".**

AI in Everyday Life

On May 21st, more than 5,000 participants gathered at the European Convention Center Luxembourg to attend a new edition of ICT Spring. This year, Artificial Intelligence was one of the burning topics addressed by international experts. The first morning session was entitled "AI in Everyday Life".

Day 1 of the AI/Digital Summit was opened by Master of Ceremonies **Jean Rognetta**, Editorial Director of Forbes France. He opened his welcoming speech by declaring that it is "an honour and a pleasure to chair the first part of the summit" and went on to say that as a journalist he wanted to "talk about the impact of AI on my everyday life … which is almost nothing" saying that he "represents an industry that is directly threatened by AI".

He then went on to talk about divergence, or the lack of it, and complained that increasingly the tech world is now split between the USA and China. He quoted the statistic that there have now been over 200 Unicorns launched in the USA, 150 in China

Mr Rognetta also spoke about the study by MMC Ventures that suggests that as many as 40% of European AI companies do not actually have AI in their software, and speculated that it would not be much different in the USA.

In closing he pointed out that although AI is now everywhere “except press and journalism”, it is most ubiquitous in marketing (23%) then customer service and IT, each with 16% market share, and before handing over to the next speaker, Bruno Zamborlin commented that the biggest single use of AI is in “Chat Bots” and wryly observed that “Artificial they may be … intelligent they certainly are not!”

HyperSurfaces – Merging the Physical and the Data Worlds with edge AI

Bruno Zamborlin, founder of HyperSurfaces, started his presentation by saying that “We all live our daily lives spread across a physical world and the digital <<data>> world” and that these are “two parallel universes, connected only through little wormholes like touch screens and smartphones”. He then told the audience that he “dreams of completely merging these two universes”.

His vision is of a world of intelligent materials, where every object of any shape or size can become data enabled via its surface … Glass, wood, plastic, panel, steering wheel” can all understand physical interactions between physical (people) and the object

He developed “edge AI” as the technology that allows it to work. Chips are embedded in objects and sensor data is used to record events and process in real time (< 20ms latency) to understand the events.

Mr Zamborlin then showed a video demonstration of a “hyper car door” in which 3 vibration sensors, costing just a few dollars, can detect more than 35 different events when various parts of the door are touched, opened, closed and pointed out that the technology can equally be used for smart homes, smart security, smart shops etc. as the end user defines the event sthat they want to be detected. All of this takes place without WiFi so that the data remains private, and he believes that HyperSurface is the first data company for physical interaction data.

Neurosciences x AI = Superpowers

There followed a very entertaining presentation by **Professor Diana Derval**, Chair and Research Director of DervalResearch, who stated that, before we can talk about artificial intelligence, we have to understand intelligence itself, and posed a simple audience participation question.

“You have a normal bear, a normal monkey, and a normal banana, you must put them in two groups”. It transpires that how we group these three items, and how quickly we group them, demonstrates different types of intelligence and thought processes … and that these different kinds of thought processes have a parallel in the AI world that favour different kinds of AI situations … expert systems, pattern recognition and so on.

Professor Derval related the story of the first autonomous car … that confused a garbage bag for a pedestrian … both of them complex irregular shapes, and suggested that the problem was that the AI system was trying to emulate human thought, when other senses that many animals have … night vision, infra-red may be more appropriate. Why emulate pattern recognition when all you need is a heat sensor?

She concluded that the advanced technology in cars may make us think that they are bringing us superpowers, but that this Is quite illusory. As she concluded, “when you develop an AI system, who is the target customer? Different applications need different styles … neural science can help define patterns … the natural world can provide us with other intelligence cues, and perhaps realistically we should strive for Enhanced, not Artificial Intelligence”

Emotion AI for the better relationship between human and machine

Hazumu Yamazaki, CSO of Empath, started by telling the audience the humorous anecdote of how, as a philosophy and literature student, he had never thought about starting an AI company, but then he met the co-founder in a bar and when he was drunk he signed a contract and has been stuck with it ever since! It has been quite successful, and Empath won last year’s ICT Spring pitch competition, as well as a further 8 pitching events globally in 2018.

Empath technology recognizes emotion in voices, primarily joy, anger, calm and sorrow, in real time, and currently its main uses are in robotics and in call centers.

Looking at the case study of call centers, the two important ways in which it is helping are in training operators, and also in providing real time alerts to bring supervisors in to help their staff with customers who are starting to get frustrated, before they get angry

Yamazaki San raised some ethical questions that are prompted out of some more sinister request for the use of Empath technology "Can we use Empath as a lie detector, or to see if our partner is cheating?" He challenged AI companies to challenge themselves … to ask themselves to imagine the worst kind of dystopia that could come about from negative use of their products, and said that "We private companies developing AI should be honest enough to think about the dystopia …."

He gave four standards that he feels AI companies should observe: Think about our own technology and ethics, open up discussion to the public, speculative design as a framework and an artist as a team member. And finally asked "Can you be brave enough to think of a dystopia that you can create?"

Artificial Intelligence for Good

Anita Huang, Project Manager, Perspicace, talked to the audience about her company's WiFi motion and bio detector. She introduced the company motto "AI For Good" and was proud to talk about their relationship with Microsoft as a strategy partner. The technology works on the principle that, like radar, Wi-Fi generates a noise which can be disturbed by objects moving in it. So a person walking, jumping, falling, breathing all create their own pattern of disturbances which can be detected.

Obvious applications of this technology are in monitoring old people in their homes, where any fall, rapid or irregular breathing etc can be monitored and an alarm sent out. It is already widely used in nursing homes. It is also being used by emergency services for detecting people in fire or disaster zones, and for greatly enhancing evacuation efficiency, as well as in smart hotels for energy reduction based on peoples' activities.

Several Chinese white goods manufacturers are also incorporating the technology in their appliances, and Mrs Huang closed by saying that traditional IR and motion devices normally have blind spots … their technology does not, and it is private.

A Round Table moderated by **Jean Rognetta** was organized and brought together **Laurent Rapin** (IoT Advisor, POST), **Prof. Diana Derval**, **Hazumu Yamazaki**, **Bruno Zamborlin**, and **Anita Huang**. Jean Rognetta opened by saying that he wanted to summarize all that was said and to launch a debate. He joked that he was born into a world where all we had to fear was war … now we have to fear a car door! He asked each of the panel to envisage the dystopia that could arise from the use of their technology, and started by asking Bruno Zamborlin "What is HyperSurface dystopia?"

Mr. Zamborlin responded that it is impossible to stop research … but it is our duty is to start a debate about ethics – perhaps his dystopia is to launch products without talking first about the effects that they will have, and he feels that Europe should lead in this. GDPR for example could be a great place to start these discussions with large and small companies, state and individuals. The tech companies' role is to show what AI can do, and it is down to the regulators to discuss how far it can go.

Professor Derval thought that AI Is not inventing anything new, humanity has always had nosy neighbours … but now it's Alexa. Some people are unethical and will try to use new technology in an unethical way, and that AI if wrongly used is just one more weapon.

Mr Rognetta then asked Anita Huang if she could imagine how Perspicace could be used as a technology for bad instead of good. She responded that "our technology monitors people. Some people could use it to detect what people actually are doing in a room, which could have privacy implications. We need to protect the data so that it's not used in the wrong way."

Laurent Rapin stated that the data safety is the first preoccupation of a telecom provider, it must be built into the. GDPR is to protect ourselves, and that POST retains all its data only in Luxembourg

The audience through several questions and observations, had a widespread belief that the AI infrastructure can easily be highjacked for commercial or political reasons, and that this is not a good thing.

"AI does not exist"

Luc Julia (VP Innovation & CTO Samsung Electronics) opened by remarking that "The AI that exists today is not the way that it is portrayed in Hollywood, I want to talk about the limits of AI"

He spoke initially about how AI first became a reality in the summer of 1956 in Dartmouth University in the USA with the mathematical modelling of a neuron … then a network of them … then a brain.

Mr Julia went on to say that the first mistake was calling it AI as it had nothing to do with intelligence. The first big realization of this came in 1961 when the early pioneers realised that they could not teach their network to understand natural language, and although through increased computer power greater feats of "intelligence" were demonstrated, they were not really intelligent. So when, in 1997 Bobby Kasparov was beaten by a machine in chessit was not through intelligence, but through algorithms … chess is rule based, with about 10**50 possible moves … the computer could store and analyse all of these moves and could therefore beat Kasparov because it had all the moves, not because it was intelligent.

In 2014 the Go world champion was beaten by the computer Deep Mine, which has a possible 10**762 moves. Deep Mine had 1500 CPUs and 300 GPUs… basically an entire data centre just to play Go, and burned an incredible 440 kw of electricity per hour while the human world champion was burning a mere 20 watts per hour. The machine had to be 20000 times more powerful to beat the human, mainly because the techniques that the machine is using are not the techniques that the human brain is using.

Another example of this lack of underlying intelligence is recognition of objects. To achieve near perfect recognition of "a cat", a computer needs about 40000 example pictures, and still gets confused by a Picasso … a human brain needs just two images .. again, it is down to the difference between rules and intelligence.

In closing, AI is about what exists today … no creativity, no invention, … just rules and data and recognition. AI today with current techniques (mathematics and statistics) cannot innovate … AI is about following rules … innovation is about breaking rules.

Unleashing Human Potential

After a well-deserved lunch, Day 1 of the AI/Digital Summit continued with the afternoon session, dedicated to “Unleashing Human Potential”. It was opened by Master of Ceremonies Marc Sniukas, Director- Strategy Regulatory & Corporate Finance, Deloitte who got straight to the point in welcoming the first speaker, Marcus Willand, Associate Partner MHP to talk about “AI in Mobility”.

AI in Mobility

Marcus Willand represents Porsche, so comes from the perspective of a motor industry manufacturer, and told the audience that he wanted to talk about challenges in mobility in the future. He broke down the analysis into four sections, starting with what is happening in the market.

He said that there are a lot of new players coming in. for example Uber, and huge levels of investment in the autonomous driving market. He cited Google’s Waymo operation, and its Chinese equivalent Baidu Appollo and made the startling revelation that in the future, the profits in the mobility market will come not from vehicle sales, but from the vehicles’ digital platforms. When you take a ride in an autonomous car you have time to consume digital services, and the technology driving these platforms is the AI from the autonomous car. This puts a lot of pressure on traditional car manufacturers and demonstrates the importance of controlling the added value chain for mobility, and the mobility eco-system (insurance, cities, startups, OEMs)

Second is the vehicle itself … so much data is now being generated from our journeys that AI is being used to reduce the useful data directly related to the driving from all of the rest of the data. Following that Mr. Willand talked about the mobility infrastructure, traffic flow and the use of AI to model how a city lives and breathes, for example an app to show how the traffic will evolve over the next hour. Additionally, AI tools can help to anticipate electricity consumption and even allow electric car drivers the opportunity to sell energy back into the grid.

Finally, there is the customer herself. Research done in Stuttgart on digital ways to access mobility without a car discovered over 40 alternatives, which is very inefficient, so now a proposed bundled package will allow customers to buy virtual transport “tokens” either by

subscription or ad hoc to be used in any form of transport from bus and taxi to car hire, and also to locate and pay for parking spaces in the city.

Mr Willand closed by stating that if companies want to take advantage of these new opportunities, they have to change their mindsets.

Intelligence enabled banking

Benjamin Schultz, from Deloitte, spoke on the challenges that the traditional banking industry has to maintain profits in an increasingly diverse and client-centric market where information, data and data management will be key paradigms for banking in the future. He maintained that embedding these paradigms in the core of the banking business model can have a great impact on profit.

In the banking paradigm shift that is increasingly being pushed by alternative on-line financial solutions the traditional revenue stream is at best stagnating, but in reality is shrinking. With the increasing shift towards these other financial solutions such as open banking, the cost income ration of > 60% does not compare favourably with the significantly less than 50% enjoyed by digital platforms, and higher efficiency levels are required.

The move therefore is towards more automated decision support. As an example, Mr. Schultz informed the audience that a typical KYC (Know Your Client) analyst can handle about 25 reports per day, whereas an AI based KYC automated process can handle 25 thousand per minute. He does not however expect bank employees to be replaced by AI solutions, rather that there will be a change of emphasis towards employees being used more for their decision making skills.

Our Future with AI

Calum Chace, a best-selling author and sought after speaker on AI spoke to the audience about his vision of our future with AI. He made reference to the often quoted “fact” that our mobile phone carries more computing power than NASA had available to send a man to the moon, and pointed out that this fact is massively out of date. He claims that today, a good quality

toaster has more computing power than NASA had available in 1969, and applauded the bravery of men who were willing to risk their lives supported by something as intelligent as a toaster.

He also subscribes to the theory that Moore's law of exponential growth in computational power is not yet exhausted, and anticipates that in the very near future we will be able to have an intelligent conversation with Siri, and that autonomous cars will be here soon as well. He anticipates a significant change in the job market as many skills become redundant, such as truck driving. There are over five million truck drivers in the USA alone, and once autonomous trucks become the norm, that number will be slashed. Additionally, the escape route to a call centre job will also be increasingly difficult to take, as more and more of the tasks there are handed over to AI based systems and bots.

Mr Chace believes that, assuming Moore's law continues to apply and that in 30 years computers will be one million times more powerful than they are today, then there is no reason why such jobs would not be replaced by AI solutions.

He observed that not having a job does not necessarily undermine the feeling of self-worth of a person, and cites the well off retiree, and the landed gentry, as two examples of a class of citizens who are extremely happy not to be working, which leads him to the conclusion that we need to make everyone rich to avoid the existential despair of having their jobs taken away by machines.

The Challenges and Opportunities of the EU in a Global Digital Economy

Cecilia Bonefeld-Dahl is Director general of the largest tech representative body in the world, with over 35 thousand affiliated organizations, and she describes DIGITAL EUROPE's goal as being to foster a business policy and regulatory structure on behalf of its members through building a stronger Digital Europe where scale is vital – if Brexit finally happens only 5% of the world's Unicorns will be in Europe – and the areas that Europe needs to concentrate on would include cyber security, privacy, AI and digital sustainability rules, along with work on inclusion, green growth, innovation, trust, leadership and an agile missions based policy.

She particularly feels that governments are not awake enough, and are not reacting quickly enough, to the rapid changes in the skills required by the workforce of tomorrow, and observed that we can fly to the moon but we cannot reprogramme our curricula to train our kids appropriately. As an example 52% of our workforce will need to do some retraining in the next 5 years.

Ms. Bonefeld-Dahl asked how will it feel to be a human being in 2040? She feels that we cannot roll back progress, that we cannot say “we want to remain human, you go digital” … it’s too late … Europe will lag behind the USA and Asia unless we leverage the power of the Digital Single Market. She believes that Europe needs to move faster, otherwise it will be too late, and that business must drive it as governments are too slow to react.

A Round Table on the topic "Unlocking Human Potential" brought together **Calum Chace**, **Dr. Jakob Mainert** (Cognitive Scientist, author about Human Intelligence) and **Marc Sniukas.** Dr. Mainert was interested in talking about 21st Century skills. He sees that intelligence breaks down into three steps … perceive, interpret, act and believes that machines are getting closer and closer to achieving these skills, but only in stable environments. In more dynamic environments we need to unleash human potential and he has a methodology for distinguishing which tasks are better done by humans, and which by machines

Calum Chace continued his slightly dystopian view of the future by stating his opinion that while in the next 5-10 years there will be greater churn in the job market with bits of jobs disappearing, in 30 years, humans may well be unemployable.

Marc Sniukas asked Messrs, Chace and Mainert what they are most looking forward to in the future. For Dr. Mainert it is a release of energy and time, and for Calum Chace, it is autonomous transport

AI Landscape in Luxembourg – Dr. Emilia Tantar – Head of AI & Big Data BIL

After a short break, **Dr. Emilia Tantar** (Head of AI & Big Data, BIL) took the stage to talk about the AI landscape in Luxembourg. Dr. Tantar is a researcher and since 2017 has been a member of the European AI Alliance. She analysed how AI is affecting the financial services sector and

talked about leaner faster operations, tailored products and advice, ubiquitous presence, smarter decision making and new value propositions.

In referring to AI startups in Luxembourg she referred the audience to the websites of LuxInnovation's Fit4Start programme and Luxembourg House of Financial Technology (LHoFT) and also spoke about the CSSF as Luxembourg's AI data regulator.

Who's going to make money in AI?

Simon Greenman (Co-founder and partner, Best Practice AI) started by asking the audience if they were ready for another AI goldrush, and went on to observe that in the California gold rush of the 19th century, the real money makers were the equipment and clothing suppliers. Drawing a comparison with the AI gold rush, he went on to say that soon every inhabitant of planet earth will be generating approximately 1.7 megabytes of data per second, that Google AI software is now all free through TensorFlow and posed the question … so who is going to extract economic value from it?

The estimate is that by 2025 the chip manufacturing market will be worth $59 billion, AI and cognitive services $77 billion, enterprise AI solutions (IBM, SAP etc) will be worth tens of billions, and according to Gartner, by 2022, AI derived business value will top $3.9 trillion across all sectors. There is also a race at country level, with Taiwanese venture capitalist Kai-Fu Lee having described China as "The Saudi Arabia of data".

A new Breakthrough, Ensemble AI and its Applications

Tony Lee (CEO and President Saltlux Korea) opened by asking what is the difference between human and artificial intelligence? He cited the example that for small data, for example highly accurate face recognition, a human needs about twenty pictures, and that an AI system needs about 100,000. He went on to discuss embodied cognition, neuroplasticity, collective intelligence and the DARPA "explainable AI" model of deep explanations, interpretable models and model induction. The overall conclusion was that hybridizing the knowledge models would more or less double the accuracy.

Mr. Lee closed by reminding the audience of Albert Einstein's famous remark that "The computer is incredibly fast, accurate and stupid. Man is incredibly slow, inaccurate and brilliant. The marriage of the two is a force beyond calculation".

Responding to Fake News – AI, Media and the Post-Truth era

Katrina Fok (Marketing Managers Spectee Inc Japan) opened with an anecdote about how she had been watching the David Attenborough documentary series "Our Planet" and thought that such incredible footage could not all be real. She researched it and found conflicting answers from different sources. She then posed the question "How much time are we all going to spend checking whether all information is real or not?"

Ms. Fok then spoke about how Spectee was founded in 2011 after many rumours in the wake of Fukushima, particularly fake news about foreign looters which greatly hindered the rescue effort to the extent that additional lives were lost because of it. She summed up the organization in the formula Social Media minus Noise = Spectee.

Their platform uses AI based solutions for frame by frame image analysis, continuity analysis, text analysis and sentiment judgement, image sharpening, posting patterns, image cross checking against data archives to verify the truthfulness of a story, and they are in partnership with Associated Press and more than 90% of the Japanese news market.

AI as a commodity for your new generation applications? Start today! by Thomas Friederich General Manager Earthlab Luxembourg

Thomas Friederich's quick fire French language presentation referred to AI as the fourth industrial revolution after steam, electricity and automation, and claimed that all sectors are affected, including farming, health, transport, and that the widening of AI is facilitated by exponential growth in data storage capabilities, processor speed and cheaper prototyping across all markets.

David Hogan (Enterprise Senior Director for EMEA, NVIDIA) moderated a Round Table on AI Policies which featured **Marc Sniukas**, **Cecilia Bonefeld-Dahl**, **Gail Kent** (Director Data, European Commission – DG CONNECT Luxembourg), **Steven Dewaele** (Director EU Policy and strategy Huawei) and **Jean Diederich** (Partner, Wavestone). Marc Sniukas opened by asking "How do we prevent robots and AI from killing us?"

Cecilia Bonefeld-Dahl felt that regulation was the key, and saw AI as being a positive thing, stating that it is not so much that there is a risk of "bias" in AI, it is more the other way round … AI can avoid bias and is a great tool for risk analysis.

Gail Kent was then asked what she is doing to improve access to data. She said that this is very important for the Luxembourgish Government as it makes for a high profile for Luxembourg DGs. She spoke about how the Open Data Directive will enter into force in June and referred to the need for a fairer data market, higher supply of data and that the Digital Single Market is imperative. She mentioned that the international aspect is also very important, with Japan, Canada and Singapore among others all approaching the commission about using the same standards.

Jean Diederich believes that there is a mix of contradictory policies leading to policy chaos, for example GDPR v the typical data fortress mentality of the banks.

David Hogan said that Luxembourg is doing a fantastic job with AI Lab, and the sector needs government leadership as industry can be very secretive, although it doesn't have to be policy driven.

Marc Sniukas remarked that while Europe is spending 30 billion dollars on AI, China is spending 300 billion dollars and asked how do we recover that lost ground?

Cecilia Bonefeld-Dahl suggested that it is not even worthwhile to try, the Chinese are already too far away, but that Europe needs to improve and stop having 28 separate markets.

The Age of AI Innovation

Day 2 of the ICT Spring 2019 AI/Digital Summit was opened by Master of Ceremonies Sabinije von Gaffke, moderator, communications expert, content creator and TV host. The session took place on May 22nd, at the ECCL and was entitled "The Age of AI Innovation".

In her welcoming speech she shared that “As an impact diplomat and social entrepreneur this is at the core of my professional interest”. She has been looking at how technology for good can help solve some of the ethical challenges related to AI and feels that trust not only anchors our culture but has also become a competitive advantage.

Ethical AI and Fairness Tool

Öztürk Taspinar (Senior Manager, Digital Lead BeLux, Accenture Digital) opened with an anecdote. He said that how typically on a Sunday he plays board games with his young kids. One Sunday they lost the dice, and he started to show his kids how he could make a dice from a piece of card. His six-year-old daughter asked “Why are you doing that Daddy, just ask Alexa to throw the dice”!

He then went on to draw an analogy with the adult world in pointing out that this is the way that AI aware organisations and individuals have been thinking for the last few years.

Mr. Taspinar wished to assume that the audience is largely aware of what the challenges of AI are today, and proposed instead to talk about the next step … shifting day to day activities to the “human plus machine environment”.

Basically AI is driven by data and algorithms, and is already deeply integrated in our lives. In 2020 (that’s next year!), 85% of our interactions will be managed by AI. This is an exciting and uncertain future, and Mr. Taspinar asked the audience to think about the unintended consequences that AI could bring. For example, Amazon discovered that owing to the skew of historical data, their AI algorithms prefer male employees. In the same way AI credit risk prediction also carries inherent bias, but it is not necessarily the algorithms that are to blame, it is the data.

Either way Mr. Taspinar sees an anthropomorphism of AI, where there is a shifting of the consequences of decisions from human to machine

He finished by urging the audience to consider the digital traces that they leave every day, and how this could affect their own data and their own algorithms.

The Six Superpowers of AI

Gary Bolles, Chair for the Future of Work at the Singularity University, first asked how will AI impact on the future of work and reflected that we are on the cusp of a great shift in the way that people work. The Digital Work Economy. He believes that being on the cusp of a big shift places extra responsibilities on us.

Mr Bolles continued in saying that the next generation will be expected to resolve some of our biggest challenges … cure cancer, live longer, mine asteroids, but we need to understand how do we create one of the most abundant economies ever in an environment where AI takes over more and more of those tasks that we traditionally call work?

He spoke of the three alternative scenarios of: Dystopian analysis – lots of tech, lots of unemployment – and AI ushers in a huge opportunity where there won't be enough workers to support all of the new tasks that will be created. He then went on to say that in reality, there will most probably be some kind of a hybrid situation where many traditional skills will no longer be required, but that there will be an abundance of new jobs which in many cases will suffer from a lack of sufficiently skilled workers to fill them.

The question then came back to the title of the presentation, as Mr. Bolles asked "How can we help humans to have superpowers to help solve the problems of tomorrow?" He defines six superpowers: Discover – as a child, nobody gave you the user manual of you … you discovered yourself by trial and error, and hopefully sometimes by trial and success. AI tech can be that user manual and help you to discover your own unique capabilities / Enhance – we increasingly use AI tech to enhance our skills, for example, if we need help on a topic when creating an Excel sheet, we no longer need to go to a manual, targeted help is just an F1 click away / Develop – through AI enhanced technology such as augmented reality glasses, a complete beginner can build new capabilities on the spot for example in fixing a problem in a car engine / Understand – use technology to help us in real time to deconstruct problems in order to be able to solve them more easily / Collaborate – use AI solutions to meld <u>your</u> unique

skills with others – globally and instantaneously / Extend – we can extend our capabilities with embedded chips etc.

Mr. Bolles closed in remarking that each of us has a unique set of superpowers, we need to think of how to leverage them to help others to develop their own superpowers

How to build an open AI Nation

David Hogan (Enterprise Senior Editor for EMEA, NVIDIA) started with the question "What are we doing as nations in our adoption of AI?". In almost every market sector the use of AI is part of core business .. radiology … AI evaluation of scans is hugely valuable against a backdrop of a reduction in skilled radiologists .. we can go on … industrial inspection, safety on oil rigs are driven by AI, Smart cities, autonomous cars, biopharmaceuticals, retail and financial are all increasingly reliant on AI.

So the question is, whose technology will we be using? Will our nation be a leader or a follower? In Europe it will not be based on investment, as the Eu invests less than 10% of what China does in AI research. So talent needs to be retained, and to do that, we need to become AI nations.

This can be done through **Innovation Platforms** (significant computer power is required to allow companies to upscale from proof of concept to production, and this platform needs to be available at an affordable price), Research collaboration (governments cannot make their countries into AI nations on their own, they need to work with researchers and universities and the public sector) and **Industry solutions** (need to be encouraged and supported by governments).

Chinese AI Startups Applications Cross Sectors

James Chou (Managing Director & CEO, Microsoft for Startups for Greater China, Japan & Korea, Chair of Technology and Innovation Committee of American Chamber of Commerce) started by introducing Microsoft for Startups, which gives free help, including financial, to startups throughout the world from one of 8 Global Scaleup Programs. China is the only country that hosts TWO of these GSPs.

Their criteria mean that although only about 2% of applicants are accepted, they quickly grow and although Microsoft invest on average about $1 million per company, the 332 companies they have supported in China are now worth a collective $37 Billion

Mr. Chou went on to talk about how China has quite deliberately tried to become a dominant force in technology through a national strategy which is based on three tiers of **Internet +** (digital transformation) **One Belt, one Road** (global interaction) and **Mass Entrepreneurship & Innovation** (all local governments receive national funding to support local entrepreneurs).

This allies with a rapid product iteration and innovation approach which can be simplified into Copy, Improve, Become market leader, which is turning China into entrepreneurial heaven for many innovators

Luxembourg. as a Test Market for Digital

Thomas Kallstenius, CEO of the Luxembourg Institute of Science and Technology, started by inviting the audience to take part in a thought experiment "Imagine that you are a turkey on a sunny October day, all looks great, you are being well fed, well cared for … then on Thanksgiving you have a BIG surprise!"

This is the problem with a lot of AI scenarios … it is very dangerous to try and predict the future based on the experience of the past. A way to do this is to look for market "transitions" and then force business disruption with game changing innovations.

Digital Lëtzebuerg was created to capitalize on Luxembourg's small size and create a digital twin of Luxembourg … a technical test bed of an entire country, a nationwide living lab in which real time, closed loop, cross correlation, AI learning scenarios can be applied to test them in a virtual real world.

All of this needs a high performance computer resource, security, data analytics and strong decision support, and the goal is to use what comes out to try and create a better Europe, or even a better world.

Some of the scenarios being tested work on smart buildings, resources management, energy systems, mobility and logistics, sensor technology, industry 4.0 and regulation, and using AI based solutions, achieving one data analytics platform to serve all these different use cases.

Luxembourg intends to be an AI player, and is reaching out across its borders for projects to adopt in Digital Lëtzebuerg. As the Chinese proverb states “When the wind of change blows, some people build walls, some people build windmills”. Luxembourg is building windmills.

AI Dragons an ecosystem to brew AI-enabled ExOs to meet SDGs & expand the AI conversations beyond technical feasibility

Luciana Ledesma (Global Tech Entrepreneur, founder of AI Dragons and certified ExO coachB) exudes passion for her projects and has been continuously inspired to try and encourage ways to apply cutting edge technology for good. She talked about one of her projects in Columbia which tried to address the issue that about 60,000 cases of claimed human rights violations were hitting the Columbian courts every month, but that only 30-80 were actually being heard. An algorithm was already being used to determine in a fair way which cases should be heard, but that was being abused through data alteration. The solution that was proposed used AI and blockchain to filter the cases and retain an audit trail that removed the risk of data tampering.

She also spoke about Jack Sim, or “Mr. Toilet” (BoPHUB) as he has become known, whom she regards as a mentor and who has made it his personal goal to provide toilet access to the two billion people on the planet who do not have such a basic sanitary facility. As Ms. Ledesma said, a toilet is probably the most effective health aid that there is.

She tries to use tech to help the environment through support to people and organizations, and closed in quoting American scientist Margaret Mead in saying “Never doubt that a small group of thoughtful, committed citizens can change the world, indeed it is the only thing that ever has”!

Tech all Over: from Trends to fashion

On May 22nd, the afternoon session of day 2 of the ICT Spring 2019 AI/Digital Summit was opened by Master of Ceremonies Frank Roessig, Fintech Leader, Proximus, who argued that AI will change the way we work, not replace it before handing over to the first speaker.

The post-digital era is upon us

The personal anecdote of **Tom Ghelen** (Associate Director, Accentue Technology) took the audience back to the first working day of his life in September 1999 when he drove in to Brussels from the country and navigated his way to his place of work using a physical Michelin street map. Today it would be very different! He emphasized the significance of this point by underlining that AI is not going to change the world … it already has! Everything and everybody is already digital.

So the debate now needs to turn to the post-digital era. Mr Ghelen identified several trends which he believes will become important:

1. DARQ Power – (distributed ledger technology (DLT), artificial intelligence (AI), extended reality (XR) and quantum computing.). These emerging technologies will transform organisations individually, but collectively, the DARQ technologies will also power the innovation and opportunity uniquely associated with the coming post-digital era. As the business landscape transitions into a combination of digital natives and businesses well into their digital transformations, DARQ is the key that will open unimagined new pathways into the future.

2. Get to know me – AI will continue to drive the "market of one" ever further into our everyday lives

3. Human+ Worker – companies need different kinds of worker. Every digital job is generating 4 other jobs, and increasingly HR departments are using technology to select the right people, not only in tracking our digital footprints, but also by testing in augmented reality, and monitoring and ensuring continuity of skills.

4. MYMARKETS – the idea that companies can hook in to what is currently trending and meet the consumers' demand for it at the speed of now. An example is that Adidas are now able to 3D print shoes in store to a customer's unique requirements.

Is your Business ready for Gen-Z?

Anshul Gupta (Founder & CEO, RazrCorp) is interested in millennials. He points out that they are the largest generation ever … over 2 billion strong, and asks, "How do businesses get ready for millennials?"

This is a crucial question. Millennials are completely changing the way that we work, shop, market, customer service, bank, entertain and commute, with most of the industries that touch our everyday lives already disrupted by their new demands and expectations. Publishing, music, video, retail, travel have all seen incredible change in a very short space of time, change led by emerging technologies and their widespread adoption by the millennial generation. The way we think will change radically says Mr. Gupta, who cites the case of Uber, who he claims are targeting young teens to get them used to the idea of shared usage instead of ownership and quotes American economist and social theorist Jeremy Rifkin who last year claimed that "25 years from now car sharing will be the norm and car ownership the anomaly".

Mr. Gupta warned also that Gen-Z consumers will change the way companies can function in demanding 24-hour service and a frictionless data experience with little traditional product loyalty thus driving an evolving and growing direct to consumer model, and promoting partnerships as with VW and Lyft, or Toyota and Uber.

Smart & Secure Mobile Connectivity for Enterprise Applications and Internet of Everything

Artem Kirillov (COO & co-founder, MTX Connect) is concerned that although more or less everyone accepts that we are in a heavily connected world, the so called IoE (Internet of Everything) where connected devices outnumber humanity by three to one, we often do not stop to consider what we are using to connect. He challenges the traditional model of a SIM connected to a traditional MNO which has to be changed from territory to territory for operational or billing reasons and promotes the idea of a carrier free B2B connectivity which will co-exist with the local MNO in territories across the globe.

Designing Smart Object

Simone Tertoolen (Designer and founder, MINOIS) is a UI designer who started the User Experience Lab at TomTom which, apart from their pioneering work in GPS devices also did a lot of ergonomics work in rethinking the car user interface. She is currently advising the freight forwarding company Shypple in building a user experience team that will transform the way that this traditional company will interact with its customers in the post-digital age. As her passion is in designing things for users moving from A to B, she has developed some ideas of what are the key things: to consider in designing a UI, and breaks them down into three main areas:

1) Half an Eye – while travelling, the user will often not be able to focus full attention on the device, so the interaction must be clear and easy to read.

2) Only one hand to control the UI – again, a travelling user often does not have the luxury of two free hands, so devices and interfaces need to be designed accordingly

3) No focused attention – the traveler will often be concentrating on other things, so the interface and the results must be intuitive and easy to understand

Tech Trends in Fashion

When she was studying fashion and design, **Ishwari Thopte** (FashTech and Investment Program Manager) loved designing, but did not love the bit about actually making what she had designed, and dreamed of the day when such unique, one-off production could be outsourced quickly and cheaply. Later when she formed the Centre for Fashion Enterprise, London's primary FashTech incubator, she started to get involved from the ground up with technology and companies that would do exactly that, and a whole lot more. The CFE is a non-profit organization funded initially by the Lord Mayor of London and then by the European Union that acts as an incubator and support for new fashion and design talent in the FashTech market, which includes wearable technology, textile innovations, augmented reality as well as geo-location and billing solutions. As in other market sectors, a budding entrepreneur may have a brilliant idea, but if she doesn't also have the technical,

infrastructural or administrative and marketing skills necessary, then, like most startups, there is a high chance that she will fail within the first two years.

"AI – A New Revolution from China" with David Duan, CEO, DeepBlue (Europe)

DeepBlue Technology is one of China's leading AI companies and is an active researcher and developer in most areas of AI including intelligent driving and vehicle manufacturing, intelligent robotics, AI City, biological intelligence, retail upgrade, intelligent voice, security, chips and education. Having cut his teeth in Silicon Valley before going back to China, and now as CEO of DeepBlue's European arm, David Duan is in a rarified group of people who can speak authoritatively from first-hand experience of the three AI power centres of China, USA and Europe.

He points out that China has been following a deliberate programme aimed at dominating the world AI market, and has largely already succeeded. China currently boasts 26% of the global AI GDP, with the USA second with 14%, and as he points out, because they have no choice, China sees trust levels in AI solutions at an astounding 70%, compared with 17% in the USA and only 12% in Germany.

Mr. Duan sees this as a big problem for Europe, which has fallen massively behind even the USA, let alone China, in the race for AI dominance, and which means that very soon, if not already, Europe will have to accept the role of being a consumer of AI, rather than a developer. He says that from the Chinese point of view, Europe is some kind of a paradise where people already have more or less everything that they want, and that with that comes complacency and risk aversion. The emerging technologies are all about risk taking and there, because China is still institutionally poor, it has a huge advantage because people are willing to risk and fail, and government is supporting that with tens of billions of dollars of investment. He cites GDPR as being the death of innovation and questions whether Europe is properly positioned to be an innovator of the future.

Mr. Duan quoted former leader Deng Xiaoping, who formulated the policy of managing the economy as "Crossing the river by feeling stones" … in other words, do not wait for a bridge to be built, find a stone in the water, then the next, and soon you will be across to the other side. This is the way that AI is developing in China … agile, rapid, try and fail, try and succeed,

and bringing new products quickly to the market. He observed that in Europe for a new product, in 5 years you have a few hundred users, in China, in 5 months you have 5 million users, and closed in saying that if Europe refuses to develop AI, it will be Europe that suffers in the future.

Milliseconds make Millions: how your site speed impacts your Business

Nuria Gonzalez-Candia (Mobile Specialist, Google) took the stage and introduced the idea of how important time is with websites by using the example of a timer in sports … not only does the timer tell you how fast you have gone, it also differentiates the winners and the losers. Thus it is with site design, particularly as we move further and further away from desk top to smart phone as the driver and consumer of online activity.

Currently although 50%-60% of queries online are made from mobile devices, sales conversions are twice as high on the desktop. This is changing, the next billion users will be mobile only, so in a few years many people will see desktop computing as a part of our history. Thus the customer relationship with you, or not, will occur through your mobile interface, which will either grow or slow your business, and therefore dictates that new development needs to be mobile first.

Customers will compare your response times with the global market leaders, and not necessarily in your field, and the estimate is that an additional 1 second delay in mobile load times can impact conversion rates by as much as 20%, and that 53% of mobile site visitors leave if a page takes longer than 3 seconds to load.

The conclusion is that companies need a plan of action involving planning, coordination and discipline with clearly defined KPIs that allow you to monitor whether you are meeting your clients' needs. Do you need the website to load in 2 seconds, 3 seconds, 10 seconds? Get it right at the beginning, and make sure that the software remains performant and doesn't become bloated and slow down, because there are plenty of other sites out there who are ready to replace you.

Future Forecast: Cloudy with a high chance of AI. How to build a Best in Class Platform to harness the Power of Artificial Intelligence

Jerome Bouthers (CIO and Head of Innovation for EMEA, J.P. Morgan Bank Luxembourg) questions the current trend by the cloud providers of inextricably linking cloud services with AI, and argues that neither is dependent upon the other. Yes, AI needs a lot of data, supplied vary fast and without bottle necks, but that does not mean that it has to be in the cloud, any more than it has to run on an ultra-high performance computer … it all depends on the application that is being developed. The important thing is to recognize the layers in the build process, and to ensure that appropriate technology is used at each level.

AI transforming FINTECH – when and how?

Karl A. Johannesson (Strategic Advisor EU Markets, DeepBlue Technology) has spent the last 25 years working with the world's biggest companies in high tech and sees the key trends for Fintech as starting by picking the "low hanging fruits" which he sees in areas such as:

- API and Data with machine learning algorithms for incremental increase in productivity.

- Blockchain and data security defining data storage processes to the benefit of standardization and an increase in streamlining

- Decision making support using deep learning techniques and semi-automated decision making tools

- Chatbots with continuous transition towards optimizing the man/machine interface

- Workflow rationalization with resultant productivity gains and cost reductions

The results should be an increase in the accuracy of decisions making, better fraud detection and wealth management for the masses, a complete redefinition of customer service, regulatory compliance, trading and money management.

Unlocking Potential – Perspectives in organizing Transformations

A Round Table moderated by **Patrice Witz** (Technology & Digital Partner, PwC Luxembourg) gathered **Daniele Pagani** (Head of Digitalisation & IT Arcelor Mittal Flat Europe), **Anne Hoffmann** (Head of Digital & Deputy Curator, Les 2 Musées de la Ville de Luxembourg), **Gilles Delattre** (VP Digital Transformation Office, Luxair), **Roger Kraemer** (Coordinator Digital Banking BCEE) and **Remy Els** (CIO, Foyer Assurances). Transformation has always been a sensitive area of human resource and customer management, never more so that when ushering in disruptive new practices into well established businesses. Moderator Patrice Witz went round the table and asked the panel for their views on why, how to get started, and how to organize?

Roger Kraemer notes that customer behaviour is changing a lot, that these days everyone has their bank in their pocket. The new mobile banks are capturing 25% of all new customers, so the legacy banks have to react. He quoted the example of N26 Bank which has 230 staff and over 3 million customers and compared to his own which has 1600 staff, and simply because of the scale of Luxembourg, a whole lot fewer customers.

Gilles Delattre explained that in the travel industry the disruption largely started with RyanAir in 2000 with almost all sales taking place across the internet and observed that at some stage the traditional companies feel the pain and have to react.

Anne Hoffmann's mission is to project the history of Luxembourg in a contemporary visitor experience and transform the museums into "digital" museums. For her, having a clear vision from her director was vital.

Remy Els spoke of the need for a sense of urgency, and underlined that the company's leadership needs to be sure of the "whys".

For Daniele Pagani the main driver was simply survival in a market with lower steel consumption and over capacity. It was necessary to become more agile, more customer-centric and simplify the business

Patrice Witz then asked the panel what were the key challenges, and what particular problems arose?

Gilles Delattre spoke of the need to have alignment on the "pain points" and what to do when they arise, and expressed the sentiment that in order to drive any kind of radical

change you need one sponsor, one decider, otherwise it is very difficult to get things through.

Daniele Pagani referred to his organisation's complexity and number of plants and said that it is not enough to have approval at board level, to drive change in what happens in the field and on the shop floor you have to win support across the entire organization … every process, every plant.

Roger Kraemer said that not only do you have to convince the board, but for a well-established business like BCEE you have to change the mindset in employees whose average age in their case is 43 years. To have any chance of success you have to start change management from day 1, otherwise you are fighting a losing battle.

Patrice Witz closed in asking the panel to recount the single key thing that they learned from their transformations

For Remy Els it was about people ... finding the right talents and keeping them

Gilles Delattre gave the sound advice that as a group you should divide a big project into small pieces and fail fast, or, as he put it "cut the elephant"

Roger Kraemer simply said that "you have to dare" while Anne Hoffmann opined that you should aim for the lowest fruits, prove value, then you can justify more … so build on success

Daniele Pagani closed with the three words of advice "listen, listen, listen".

About ICT Spring

ICT Spring is a Global Tech Conference hosting an array of international professionals. This two-day yearly event is held in Luxembourg City, and offers the participants a unique opportunity to deepen their Digital Knowledge, capture the Value of the fast-growing FinTech Industry, and explore the impact of Space Technologies on Terrestrial Businesses, through exhibitions and demonstrations of the latest Tech Trends and Innovations. ICT Spring is also the perfect place to network with peers and future business partners.

ICT Spring is organized by Farvest Group, the leading marketing & events agency in Luxembourg.

More information & registration: www.ictspring.com

Text by John Chalmers

Photos by Marion Dessard