ABOUT THE AUTHOR

As a 15-year veteran, Stéphane Van Gelder has been an active and dynamic member of the domain industry almost since its inception. He grew the leading corporate registrar in France from a start-up in 1999 to an industry heavyweight by 2010. After selling the corporate registrar to Europe's largest corporate domain registration company, he founded a new start-up providing domain name and Internet governance consultancy. In addition, he set up France's first domain industry website in 2001, published in both French and English.

In this book, Van Gelder's passion for the Internet in general and its naming system in particular is abundantly clear. His background as a journalist and his enthusiasm for sharing information make this a lively and compelling read. It's not just a dry tour of the, albeit fascinating, facts of .eu's first decade, it's a first hand account from those who were there, peppered with entertaining and revealing anecdotes. Today, Van Gelder is still very much an active member of the Internet governance community and thus an unsurpassed authority on the subject.

Stéphane Van Gelder has a BSc in Computer Science from Sussex University (UK). He is fully bilingual and bicultural, English and French.

"This beautifully written book is a real eye-opener with real heroes emerging"
– William Wright, *Copywriter*

EXCERPT FROM THE BOOK

Major launches were still new. The people designing them still relatively inexperienced. And there wasn't much by way of historical precedent to base any fine tuning on. In fact, many of todays' precedents were set by .eu and the people who had that launch work.

...

In 2006, .eu was an instant success. Ten years later, it is a lasting testament to the spirit of community, innovation, humility and determination that made the EURopean IDentity possible. An endeavour spanning 3 public bodies and 5 national registries. One that brought together registrars from 37 different countries and saw 761 registrars serving those domain buyers for a total in 2015 of just under 4 million domain names.

...

The European Commission steered a process of continental collaboration to a successful conclusion. It was an intelligent move to put it in the hands of the private sector.

— A VISION BY EUROPE, FOR EUROPEANS —

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Dot EU – The first decade

Stéphane Van Gelder

.eu

Dot EU – The first decade

Stéphane Van Gelder

— THE STORY OF THE MOST SUCCESSFUL TLD LAUNCH EVER —

ABOUT THE BOOK

WHAT'S IN A (DOMAIN) NAME?

More than most of us realise. We all rely on the Domain Name System every time we visit a website or send an e-mail. We don't think twice about it, if we're even aware of it in the first place. However, there's a whole world hiding behind each small extension. In this book, we get the unique opportunity to look behind the scenes and witness the birth of one such extension, namely .eu. Far from being a dry business tome, Stéphane Van Gelder's book is full of entertaining and enlightening anecdotes. The story of Europe's very own Internet suffix is the story of a group of passionate, creative, knowledgeable and empathetic people who made it happen.

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Dot EU – The first decade

Stéphane Van Gelder

Foreword

Every day, millions of people go online, open an internet browser and use their .eu domain name to connect to the rest of the world. This 'name' connects more than 500 million people to one internet identity, across the 28 countries of the European Union as well as in Iceland, Liechtenstein and Norway.

The .eu domain – or more precisely, country code Top Level Domain name (ccTLD) – was created as a way to promote the European single market on the internet, as well as to increase choice and competition in Top Level Domain names.

The vision was for .eu to act as a building block for electronic commerce in Europe, and for it to be accessible to all EU companies and people living in Europe. It was designed to contribute to the Digital Single Market, to promote European values about freedom of the internet and the rule of law, and also to give confidence to online users with its stability and security.

Today, eu is one of the most successful Top Level Domain names, with almost 4 million registrations as of the end of 2015. This makes it the 11th largest Top Level Domain in the world and 6th amongst ccTLDs. This is a particularly impressive result, given that .eu only recently celebrated its tenth anniversary and faces increasing competition in the domain name space after some 900 new generic Top Level Domains (gTLDs) were introduced after 2014.

Its success comes from timely policy decisions, good implementation and the work of hundreds of accredited registrars. The support of the .eu registry – EURid – has been invaluable, with its innovative approach

to introducing internationalised domain names in different scripts, use of different languages, and promotion of .eu both in Europe and internationally, which has helped to increase use.

Everyone involved should be proud of a job well done. They have put the EU on the international map of the Internet.

But this is not the end of the story. It is only the beginning.

As the Digital Single Market grows and develops, we look forward to seeing many more people and businesses making use of .eu, as an important way to help e-commerce grow in Europe and beyond.

With more domain names registered, and with its secure and stable environment, .eu will help us to expand and support the Digital Single Market in Europe.

This book tells the story of how .eu was born and developed; it is a testimony to the visionary approach taken by the pioneers who led the project and remarkable progress they have managed to achieve.

I hope that you will enjoy reading it.

May, 2016

Andrus Ansip
Vice President of the European Commission
Brussels

Preface

It was Stockholm. I don't remember the hotel or the exact date, but it must have been late 2004 or early 2005, because that day it had started snowing, something we hadn't seen for quite a while, even in Stockholm. In the bar of the hotel that evening, Peter Janssen and I were discussing a meeting we had just had that day with IIS, the organization that runs the .se and with whom .be and .it had partnered a year earlier.

Together, these partners had created a new organization to answer the European Commission's request for information concerning running the .eu Top Level Domain extension. Now, one year later, we had been awarded the concession contract and things needed to get concrete. There were only four or five highly committed and ambitious guys at .be – who already had full-time day jobs – to pull this thing off. That would clearly not suffice. Nor would the financing. Each of the three partners had committed to lending €300,000, and we had been able to secure loans from two banks for a total of €1,190,000.

However, the business plan had already made it clear that this would not be enough to cover all of the start-up period's investments and costs: with a best case scenario, we'd have to find another €1 million – €3 million in the worst case…

So, we had put the question to the three founding partners: how much extra were they prepared to lend to get this project off the ground? Stockholm was our first stop, and the first discussions didn't give us much hope.

That was the situation as we were sitting that winter night in the bar of that nameless hotel in Stockholm, contemplating our options and other aspects we were dealing with in the early days of the project. But hotel bars

– far removed from the hectic action of the office and the daily problems that needed to be solved – often proved to be very productive environments whenever we got stuck along this long and winding road.

Around that time, we were working on a system to certify registrars. As the legal framework required us to work exclusively through a network of agents or registrars, it was important to get them involved as soon as possible so that they could start promoting .eu to the end-market. After accreditation, a registrar would be published on our website and could start making publicity as an official reseller of the .eu domain names. So we needed to have that accreditation system ready, and the sooner the better. On top of that, this would already help us secure some extra cash, as the registrar would be published on our website only when the full procedure was complete, which included the advance payment of a minimum of €10,000. But even so, that would help us fill only part of the financing gap.

"Wouldn't it be nice if we could make the registrars pay more than the minimum amount for getting accredited?" Peter started the conversation.

"Yes, indeed. Especially, as that minimum amount would be far too low for many of them to cover their initial sales volume."

"That's true – but why would they pay now if the launch is only six months later? They can always pay a few days before the launch to get enough money in their account to cover the sales of the first days." That was typical of Peter: always thinking one step ahead and thinking of issues nobody had seen yet.

"We need an extra incentive to get the registrars to pay more nów."

That's where the conversation got stuck. But a few minutes and nips from our beers later, during which we had both silently followed our own trains of thought, Peter looked up at me and said enthusiastically: *"I think I know what we should do!"*

"The order in which the registrars will be shown on our website is random, isn't it?" he continued. I knew Peter so well by now that I could have finished the rest of his thought: *"Let's rank them in the order of the level of their pre-payment, the highest on top! If we're lucky, the registrars will start to pay much more and finance our operational costs."*

And lucky we were! Once this idea was launched, we had registrars calling us to ask how much extra they needed to pay to climb a few positions higher up on the list. As we could not reveal that information, they started making small payments until they rose to the position they wanted to occupy.

This is just one of many examples of the process we've gone through in the creation of .eu. It's a story that was written by many people. But not just any kind of people. People who possess the four fundamental characteristics that I believe need to be present to make an undertaking succeed: Knowledge, Creativity, Empathy and Enthusiasm. These are the 'KCEEs' to success – and that was definitely so in the case of .eu!

Of course, one needs sufficient 'knowledge' to undertake a particular project. In the case of .eu, the technical knowledge required to run a Top Level Domain extension was indispensable before even thinking of getting involved. But it was much more than that. How would we solve the multi-lingual problem? How to make sure the Sunrise would work? How to build a commercial channel? And most of all: how to finance it when no one wants to put money on the table?

That's where the 'creativity' comes in. When we started the dot-eu project, we knew that we had to find solutions for problems no one had solved – or even experienced – before us.

The creativity is needed to find solutions to often unexpected problems. But not just any solution either. Solutions should be simple and acceptable for everybody. And for that to happen, one needs a lot of 'empathy' to understand the problem from many different angles. Think like the customers, feel their pain, and ease that pain.

But most important of all, one needs a lot of 'enthusiasm', the foundation on which every project, undertaking or relationship should stand. Without that enthusiasm, it would have been impossible to overcome the abundance of difficulties and frustrations that crossed our path during the years of the project.

These may sound like obvious characteristics, but it is very difficult to find people who assemble all of them in one person. While this may not be needed as long as they are well-represented and balanced in the group, I was privileged to work with several such five-legged sheep to concoct the solutions that helped us overcome impossibly high mountains to make .eu work.

Each and every one of them made their unique contribution. Without them, .eu would not have come into being. It's the story of people who dreamed of realizing something special. Who had a passion to go beyond themselves and surprise the world. People driven by challenges, for whom

a day without a problem solved is a day irretrievably lost. Driven by pride to show the world: "Yes, we can!" This book is pre-eminently their story.

Many anecdotes can be found in the book. However, to keep it readable, many more did not make it past the final cut. So, let me give you a last one here.

It was during one of those many animated board meetings in the early days of the domain names when dns.be, one of EURid's founding members, introduced the 'quarantine' period (that is, the retention period for deleted domain names). During this quarantine period, the domain name is not functional: it's in a 'deleted' state, but not available for registration. The purpose of this period is to allow the owner to reinstate his domain name before it is made available and registered by someone else, in case the deletion was made inadvertently or without his consent.

But then, how long should this period last? 10 days, 20 days, 30 days? Would 10 days be enough? It should be – because if, after 10 days, you haven't realized that your domain name doesn't work anymore, it's probably not that important. But people take holidays and might not have access to their systems (yes, this discussion took place a long time ago!). So, shouldn't three weeks suffice? Then someone came up with the obvious – and creative – solution: quarantine is derived from the Italian 'quaranta giorni' meaning 40 days, which was the time ships were required to wait off-shore before entering the harbour, in order to prevent any developing disease (in particular, the plague) from spreading. So, true to the origin of the word, it was decided to have a 40-day retention period.

When discussing the many different business decisions we made, the conversation invariably drifted towards anecdotes like this one and the sometimes unexpected paths that led to those decisions. People found these stories so interesting that they urged us to publish them. As time went by, we realized that more and more of these stories were getting lost in the mists of our fading memories. So, to accommodate those avid supporters, we thought it was high time to put pen to paper – or rather, fingers to the keyboard – and act to prevent those stories from disappearing altogether.

One of those supporters was Stéphane Van Gelder, who had experienced the .eu Sunrise from the first row as a registrar. So we presented him with the challenge of committing our story to paper. It took a lot of interviewing, wading through piles of archives and e-mails, probing our

failing memories with the same returning questions and finding structure in often contradicting information to finally create order out of the information chaos. It is to his great credit that he succeeded wonderfully.

I wish you an enjoyable read!

March, 2016

Marc Van Wesemael
Diegem, Belgium

A story of passion

You may not feel there can ever be much passion in something like a domain name. But passion is a funny thing. It can grow from the most anodyne of situations. Happenstance occurrences that don't immediately seem to hold any obvious life-changing implications. So it was for me and the Internet's naming system.

But wait. Did I really write the words 'passion', 'Internet' and 'naming system' in the same paragraph? I did, and I stand by those words. Being a part of the Internet's naming community has changed my life in a way I would never have thought possible.

I could explain, but why not focus on the impact it's had on your life instead?

Remember when you could get lost because there was no instantly available map on your phone? When you weren't able to answer any trivia question with a 5-second search? When you actually had to 'go to the shop' to buy something? When only the people on Star Trek could do live video conferencing? When the fastest way to send a document was to feed hardcopy into a fax machine?

You get the idea. This technology has changed everyone's life.

But hold on – that's the Internet, not this naming system thingamajig, isn't it? Right. But how do you think you get access to Google Maps, Wikipedia, Amazon, Skype… or even send e-mail?

Every system, service and software you connect to via the Internet starts with a 'domain name' (a collection of human-readable terms) or the machine equivalent, an IP address (a numeric locator).

That's why the system that assigns names, maps them to equivalent IP

addresses, and makes sure everything works is so important. It's called the Domain Name System, or DNS for short, and it's not just changed my life – it's made billionaires out of maths wizards that thought up an algorithm to allow sites to be found more easily on the web or a college geek looking to connect people through a 'social network'. It's put the tiny territory of Tokelau – barely 10 square kilometres located just off New Zealand – on the virtual map because its Internet suffix .tk is so popular there are now more than 25 million domain names that end with those two letters[1]. Only the Internet naming supremo .com has more domains! It's introduced new ways to manage global resources, where the man in the street can have as much say in determining policies that govern the DNS as governments do.

The Internet is possibly the biggest engine of change we've ever known. Today, with its power harnessed in devices that fit in your hands, as long as your battery hasn't died and you can find some network coverage, you can basically access the sum of all information available to mankind. And the naming system is the front door to that power.

See, I wasn't lying. This is fascinating stuff. Made all the more so by the people behind these developments. The pioneers, forward-thinkers and mould-breakers that morphed a technology initially meant for something else entirely. ICANN, the organisation set up to oversee the DNS, has a motto that may sound corny at first but is actually very effective at describing the power of this technology: 'One world, one Internet, everyone connected'.

The potential is there, the Internet has taken off, but it's what we do with it now that really counts. This is, after all, still such a young technology – the first .com domain name was registered as recently as 1985. The domain industry, with its 'registrars' (the domain name shops) and its 'registries' (the entities tasked with running an Internet suffix such as .com), only really started coming into being at the turn of this century. And the idea of regional domains – such as Europe's .eu – didn't really exist until 2005.

Today, the Internet has become so crucial to the world's economies and strategies that domain names are as political as they are technical. This is evident in the story of the creation and operation of .eu. Delving into the genesis of Europe's suffix is like being given a tour of the kitchen at a fancy restaurant.

Getting something like .eu up and running was a herculean task. Technologists, academia, civil servants and consumers all had to coalesce

around a concept designed to provide a service to people who may not have even realised they needed it.

Getting there took heaps of planning, political meandering, financial juggling and even fraud deterrence. It's a story that spans years – more than just the decade of .eu operation this book is timed to coincide with. And it's a story that reflects the Internet's own. Creating .eu was done with the same ideals as those of the Internet. Fostering emancipation through information distribution, shared resources and human interaction.

What it's 'not' is a tale for geeks or computer wizards only. You don't need to understand the inner workings of the Internet to witness the way this technology has changed our lives (and will continue to do so). Neither do you need to master the workings of the DNS to appreciate the story of how Europe designed, built and launched its very own Internet suffix.

Because first and foremost, it's a story of passion. The immense amounts of passion it took to make .eu happen.

SOURCES

1 http://www.verisign.com/assets/domain-name-report-september2015.pdf

Phoenix

Peter Janssen would later become EURid Technical Director, but right now he was falling asleep on the job. Literally. "*We were both working for Belgium's .be at the time,*" recalls EURid General Manager Marc Van Wesemael, the man who would later call on Janssen to build the technical platform for what would become Europe's suffix – or, as it's called in Internet jargon, its TLD[1].

"As the operator of all .be Internet addresses, we did not have the luxury of risking even the most infinitesimal of downtimes. So we had adopted a standard practice of doing all our new software releases at night or on weekends. That way, any problems could hopefully be fixed while the load on our systems was low, and no users of Belgium's myriad domain names would be impacted. Except this time, the weekend wasn't enough! The technical team had been developing a new release of one of our systems, but they just couldn't get it to work. I got to the office that Monday morning and Peter had been struggling with it all weekend. He hadn't slept for over 30 hours! We'd announced the systems update would go live at 9 am that morning – so there he was, at his computer, trying to find the problem. Except as I got closer, I realised that his eyes were almost closed. He was sitting at his desk, hands on the keyboard… and he was falling asleep!"

"I told him to go home and get some sleep. We would put out an announcement saying the new system would go live the next day instead. He went home for a few hours, slept a little, came back that afternoon and found the problem immediately. An hour later, the new system was ready."

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[1] The Internet naming system is a reverse pyramid, with the system's root at the top. A conventional domain name, such as www.eurid.eu, flows from left to right with the uppermost point defined at the far right. For convenience, the root is not shown. So the address' uppermost point is the Top Level Domain, in this instance .eu.

Just an anecdote. But one that reveals so much about the way .eu was put together, because it says so much about the people who made Europe's Internet domain happen. People like Janssen and Van Wesemael.

Both are Flemish Belgians, so their mother tongue is Dutch. But their working language is, just like in the rest of the country, an English in which they are nigh on fluent. Their origins have endowed them both with an ability to remain calm and stay the course in troubled waters. Flemings are often both phlegmatic and pragmatic.

Van Wesemael is serious, but not strict. He shares an easy-going friendship with Janssen – and, when the two are together, they tend to put everyone at ease. Janssen is the petulant child to Van Wesemael's more genteel manner. He has a geek's sense of humour, but at the same time commands the kind of respect that is only given to experts of outstanding abilities.

They say that if at first you don't succeed, you should try and try again. But making success rise out of the ashes of failure takes a special kind of resolve. The resolve to push beyond sleep, for instance. Or to ignore the fact that everyone else expects you to fail, and pay no mind to the fact that one of the world's biggest political institutions has tasked you with doing something that has never been done before.

The story of .eu, Europe's identity on the Internet, is about a group of people who learned the hard way, turned problems into opportunities, and pushed themselves to excel even when they had previously stumbled.

Had Marc Van Wesemael and his team not encountered problems in 2000 when the Belgium suffix[1] was freed from the shackles of excessively restrictive rules, they might not have bounced back to later build one of the most advanced and respected domain name registration and management systems in the world. And this very expertise, born out of darker times, made the team at Belgium's domain name authority DNS BE[2] shine. Soon, other countries were knocking on their door in the hope of using the state-of-the-art .be systems for a pan-European Internet suffix.

They were now recognised for their ability to react to problems with pragmatism and to take the hard decisions when necessary.

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[1] TLDs are also known as 'suffixes', 'zones' or 'extensions'.

[2] DNS BE is what is known as a 'registry', in other words the entity tasked with operating a TLD. Every TLD has a registry, although not all are state-appointed non-profits like DNS BE.

Like in 2000, when they dared to pull the plug on a major operation to significantly enhance .be… and start again the next day.

Like that Monday Peter Janssen had fallen asleep trying so hard to get a new systems release out.

BY HAND

Anyone who's registered an Internet domain recently – to start a new business venture, for instance, or to provide family members with their own personalised e-mail addresses – would be forgiven for thinking that the process is as structured as taxes.

Choose the suffix: be it .com, a national identifier like .be, or an international one like .eu[1]. Go to a specialised company called a registrar[2]. Pay an annual fee and, if the domain name is available, register it. People doing this may also know that, to register the name, the registrar deals with a registry, the entity in charge of operating the suffix as a whole.

So, basically, the domain distribution chain has two players in it, and the registration process is seamless. It can be executed online, in a matter of minutes, and the name can be up and running that very day.

But it wasn't always like that.

Like the Internet itself, the naming system started out more haphazard DIY than professional bulls-eye. Registration requests would have to be sent in manually, sometimes by e-mail. In extreme cases, supporting documentation even had to be faxed in!

In the early days, the naming functions were usually handled by academics. Sometimes one person was responsible for a whole country's namespace. That was the case in the late 1980s, when Professor Pierre Verbaeten of the Leuven Catholic University became the man responsible for what was then a very new development: Belgium's ccTLD .be.

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[1] There are 2 main types of TLDs. The generic Top Level Domains (gTLDs) such as .com, are topic specific. The country code Top Level Domains (ccTLDs) are country or region specific. .eu is considered a ccTLD.

[2] Registrars go hand-in-hand with registries. The former operates a zone and distributes domain registrations in that zone through a network of sales partners called registrars.

He did so by asking another man, American Jon Postel[1], to assign the suffix to him. In accounts of how the Belgium Internet namespace was born, Verbaeten tells of a simple e-mail request to Postel, one of the researchers who had put the Internet's naming system together in the first place. This was in 1988, and – as crazy as it may sound in today's world with thousands of TLDs, millions of domain names, and billions of Internet users – Postel was basically managing the core database by hand. Imagine Google indexing the world's websites by running off a spreadsheet listing them all. Sounds absurd, doesn't it? Yet that's basically the way the Internet was managed in those days...

So Verbaeten had e-mailed Postel with a 'give me .be' request in 1988. Before handing over a whole country's namespace, Postel did run a summary check. He asked Verbaeten to provide evidence that his request actually had the support of the Belgium Internet community. A fair question, except that Belgium did not have an Internet community at that point! There were no .be domain names, and the Internet itself was not commercially available.

Verbaeten had sent in pledges of support from two Belgium-based research networks with his initial request: the European Academic Research Network EARN and EUnet. After Postel's reply, he followed up with two more letters: one from the country's Federal Research Agency and the other from RTT, the Belgium Telecom operator, confirming they had no interest in running .be themselves.

By the end of the year, Belgium had received no formal response from Postel. A random test using a .be e-mail address was carried out. The e-mail was received, showing that .be was now active on the Internet. There had been no contract, no formal signing ceremony... not even an e-mail confirmation! Yet Belgium now had its own operational namespace – and Verbaeten was now in charge of operating it.

The first .be domains were actually registered years later, in 1993[1], when the university was hooked up to the Internet. Verbaeten started registering names manually. What sounds like a big job wasn't actually all that time-consuming. Not many people knew about domain names in Belgium back

[1] Postel is considered one of the 'fathers of the Internet'. For a long time, he single-handedly operated the Internet's root database, leading to the creation of IANA. See his Internet Hall Of Fame entry: http://www.internethalloffame.org/inductees/jon-postel

then, so registration requests were few and far between.

Plus, strict requirements were put in place, preventing many prospective applicants from getting a .be name. Names could only be registered if they were the exact match of an organisation or company name, a trade name or a trademark. Applicants had to send in documents to prove they had the rights they claimed to have. They had to either be based in Belgium or be the holder of a right valid in the country.

Unsurprisingly, with registrations having started in December of the previous year, a grand total of 129 .be domains were registered during the whole of 1994. Twenty years later, the .be namespace ended 2014 with over 1.5 million domain names!

ELIMINATING HUMAN ERROR

Growing Belgium's domain more than 11,000% meant streamlining the registration system and cutting out the human element in the process of adding new names. It also meant lowering the bureaucratic threshold so that a lot more people would be eligible for a .be domain. In short, it was about reducing the huge potential for problems that a restrictive set of rules meant for Belgium's namespace.

The first step was the creation of a standalone entity to bring some structure to what had previously been primarily a 'garden shed' operation. A non-profit organisation, called DNS Belgium (DNS BE for short), was created in February 1999.

Like most European countries at the time, Belgium was waking up to the importance its namespace might have on its future economy and global footprint. Groups with major stakes in a strong, functional and successful .be came together to craft the new registry. They included Belgium's Internet Service Providers Association (ISPA Belgium)[II], the federation of Information Technology companies (Agoria)[III], and the telecom users (Beltug)[IV]. State oversight came by way of the Ministry of Economic Affairs and the country's telecom regulator BIPT[V].

FIGHTING EXTINCTION

For .be, January One, Year Two Thousand was the start of a new era. Pierre Verbaeten officially handed the keys to DNS BE.

The new manager of Belgium's domain inherited a system filled with potential pitfalls. Strict rules and an entirely manual control process did not equate to a very long life expectancy – a .be faced the same choice the dinosaurs had: evolve or become extinct. Or even worse.

Faced with the uphill struggle of having to comply with the rules, then send in a form with the name's technical and administrative info on it, and finally go through a technical suitability check, prospective .be registrants began to seriously lose patience with the process and the institutions enforcing it. Adding more spark to an already explosive situation was the fact that the registry was pretty much in direct contact with the end-customers. There were no registrars to speak of, even though some third-party 'providers' did, as their name suggests, provide registration services. But most registration requests went straight to the registry.

So, on top of the repellent effect of all this bumbledom, there was also a real legal risk. "*The DNS BE rules were challenged,*" recalls Van Wesemael. "*For example, the rule to limit registrations to people living in Belgium was challenged quite a few times by French people who wanted a .be domain name and claimed that, in Europe, you are not allowed to limit something to one country. You have to open up to the whole of Europe. All Europeans are equal. Being challenged like this was part of the reason Belgium started thinking about liberalising its domain.*"

Also, just like in real life, having a complex set of rules for this virtual part of Belgium meant it was easy to usurp and much harder to control. "*One of our rules was that, to get a name, you had to prove a right to that name. And one of the rights you could claim was a trade name. But in Belgium it was unclear how you could prove you had a right to a trade name. For example, you could go to the company register and tell them that, from now on, your company would also be trading under a whole load of new names. We had people who added hundreds of names to their company registrations just to get the corresponding domain names. It was simply ridiculous.*"

If the value of a system is to be measured by the sheer brazenness of attempts made to bypass it, then .be's rules had long passed their sell-by date. Ever since the day Pierre Verbaeten had received a registration request for a list of trade names that had all been taken straight out of the Yellow

Pages!

Political pressure was also building because of the system's glaring inefficiencies in serving its intended purpose and its target audience. A registration system that is too complex, too long and too cumbersome will turn people away rather than draw them in. The unintended consequence is that, instead of promoting the country's virtual identity, it weakens it and serves other namespaces instead.

At the end of the 1990s, if you were a Belgian company wanting to join the Internet revolution, your first instinct might well be to label yourself with a .be to highlight your geographic and cultural heritage. But when faced with the procedural difficulties in obtaining your .be domain name, you'd probably turn to an easier option such as .com instead. Van Wesemael recalls: *"I was told by our Minister of Telecommunications that he was getting a lot of complaints from companies that wanted domain names but were finding the process too lengthy. Do something about it, he said."*

DNS BE Board members started feeling the pressure too. And passing it on. Marc Van Wesemael remembers an informal dinner after a general assembly where he was asked how the future looked for the .be operator. He gave a very direct answer. *"We're driving at 120 km/h and there's a brick wall directly ahead… except we have no brakes!"* When the Board member asked what should be done, Van Wesemael's response was an instant 'liberalise'. The Board member asked him to do so without delay!

A more formal May 2000 DNS BE Board decision to liberalise followed. Marc Van Wesemael set about upgrading a process that, as it then stood, simply could not scale. *"As the number of registrations increased, we had to add staff every week just to cope with the volumes, because such a large part of the process was manual."*

Plus, every name that was turned away by the system's inadequacies was double jeopardy for DNS BE. Not only did the registry not take in any registration fee for the name in question, but there would often be extra work to contend with in helping angry would-be domain name registrants understand why their request couldn't be satisfied. Sometimes legal proceedings ensued, increasing the cost, damaging the image of Belgium's domain, and aggravating the Belgium registry's headache.

But how to simplify? Should .be open up to Europeans and, if so, how would DNS BE check an applicant's European status? How would that status

even be defined? Citizenship in an EU[1] Member State? Operating a place of business in the Union? As the discussions progressed, it was becoming clearer that, the fewer the rules, the more scalable and attractive Belgium's domain would look.

In the end, it was decided that no rules was the best rule. DNS BE was tasked with automating the .be registration system, accrediting a network of registrars and making the domain more accessible. That liberalisation took place in 2000 and instantly had a huge impact on .be registrations. Before the registration rules were relaxed, there were around 40,000 .be names. Three weeks after the liberalisation, registration volume had skyrocketed to 90,000!

But it was not all plain sailing. "*We created a system that allowed registration requests to be sent in by e-mail. The e-mail would be read and interpreted by the system automatically. If there were no errors, then the name would be registered and the system would send a confirmation back to the party making the application.*"

THE DEVIL IN THE DETAILS

All of that sounded good. The DNS BE team geared up for a rush of applications for easier-to-get .be domains. The e-mail registration system was beefed up. But December 2000 was still early days for the domain industry. What might seem like simple issues to plan for today, had a tendency to cause major upsets back then. So on the day .be should have opened up to a whole new audience, with Belgium (and others) watching… nothing happened!

"*E-mail servers can receive as many messages as you want to send to them,*" smiles Van Wesemael as he recalls the incident. "*So why wouldn't we just plan to manage the queue on the basis of first in, first out? No matter how many e-mails we get, we take them in the order received and register the corresponding domains as requested. We expected to have a strong influx of e-mails in the first few hours, but these would just be queued. No problem.*"

Famous last words, of course. What happened instead was a traditional 'good news, bad news' situation. The good news was that demand for the liberalised .be was indeed very strong. Everyone involved had been right. The old system was no longer viable, and change was needed. The bad news

[1] European Union

was that demand was so high, the e-mail servers could take it, but not so the routers feeding them!

As their name suggests, routers serve as intermediaries, directing traffic from a source to its destination. The ones being used to deliver the .be registration request e-mails to their intended end point did something worse than wilt in the face of the sheer volume of e-mail traffic hitting them. They switched to safe mode!

That meant they appeared to be working normally, but just weren't actually doing their job of letting the e-mails reach their recipient: DNS BE. *"So the routers still acknowledged each request for connection they were getting. But to us, sitting on the other side waiting, nothing was getting through. We started to panic a little and tried a few quick fixes on our systems – which actually made things go from bad to worse. So eventually we just said 'stop!' and decided to restart the liberalisation the next day after we'd understood where the problem was."*

The European TLD would later be well served by what happened with .be that day. The team now knew that getting the right results sometimes meant accepting the idea that, in the face of certain issues, it's best to postpone rather than keep on beating your head against the wall. Furthermore, this episode had also been an object lesson in how to handle public and political pressure – something that the journey towards Europe's domain would have plenty of...

The lessons didn't only come from the liberalisation, which was in essence a relaunch of .be. They also came from the aftermath. It's a constant that, whenever new domain names become available on the Internet, or when the rules for a given set of names are relaxed so that terms that would have previously been hard to get suddenly become much more accessible, some people are quicker on the draw than others.

Unfortunately, it's not always the 'right' people who are savvy enough to understand the new opportunities. That too has to be handled and planned for. *"Weeks after the .be liberalisation, people realised that the Dutch and the French versions of the country's name – 'België' and 'Belgique' – had been registered by Dutch people."*

As Belgium woke up to the fact that its denomination in at least two of its three commonly used languages had been taken by third parties, fingers started being pointed towards DNS BE. Some even called the Telecom Ministry to act. *"The Minister was very supportive,"* recalls Van Wesemael. *"He*

explained that when a domain is liberalised and the proper care isn't taken by whomever has prior rights[1] *on a term, then that's what can happen. People need to be aware of what is going on, and take the proper steps. At the time, Belgium and the authorities in charge of the country's name had not."*

ON THE ROAD

There was no going back on the .be liberalisation – but years later, when Van Wesemael and the new team he had formed started to prepare the .eu project, the problems and issues of the .be days were still very much on everyone's mind. Remembering them proved very helpful in making the .eu launch a success.

By the time .eu became a real objective of the European Commission[2], the group of people that would later become Europe's registry EURid had spent years getting it right for .be.

They now had the expertise to build robust computer systems to handle the extremely high volumes that were to be expected as .eu was brought online. They also had a better understanding of how to plan the subsequent launch phases to increase protection against domain name registrations that might infringe on someone else's rights (such as a trademark).

Clearly, .eu was bound to generate interest as the label for Europe on the Internet. Also, the domain ecosystem had progressed a lot since 2000, and many more now understood the value and potential of a good domain name. Be it from an investment perspective, or from the point of view of a user looking to secure a catchy name to start a new web venture.

Thanks to its .be experience, the EURid team also had the wherewithal to prepare others for the launch: making sure as few people as possible would be caught napping when .eu came, so that their trade names, trademarks or other terms on which they could claim prior rights would not become someone else's prize. Roadshows were organised during which the registry went to speak with prospective .eu registrars. These would be the

[1] Prior right is a term frequently used in the domain world to describe protected rights to a term, such as trademarks or product names.

[2] From the Commission's website (http://ec.europa.eu/about/index_en.htm): "The European Commission is the EU's executive body. It represents the interests of the European Union as a whole (not the interests of individual countries)."

companies actually providing end-users with registration services. If the registrars didn't believe in, or understand, .eu, chances are the Internet user wouldn't either.

A phased approach was planned for the .eu launch. This could also trace its roots back to the December 2000 .be liberalisation. Months before, DNS BE had started announcing it – even taking out ads in newspapers. With the result that, before the stringent .be ruleset was lifted, as prior rights holders learned of the upcoming liberalisation, they jumped on the opportunity to register more names whilst they were still the only ones with access to .be. As soon as .be was opened up, everyone would be able to get a name.

So DNS BE had set a deadline after which no more old-style registration requests would be accepted. Even after .be was liberalised, the outstanding old-style registrations continued to be checked: those that were approved were assigned to the relevant applicants; those that were not were put on hold to be released at a later date. Years later, .eu would use a similar system to handle trademark-based registration requests that ended up not being approved…

December 7, 2005 was to be the two-staged inception point as .eu domains became available to a limited subset of potential registrants – those with trademarks and other prior rights – through a priority registration period called a 'Sunrise'. That would kick off the process of gradually building up to .eu becoming available to all on a first-come, first served basis on April 7, 2006.

"The roadshows we did months before we actually started the launch cycle really helped in preparing us, our sales network and, indirectly, our end-customers (i.e. the people who would actually register .eu names once they became available). During these roadshows, we had people refer to the .be launch and ask us, seeing that we failed with .be, how we could make sure the same thing wouldn't happen again with .eu?"

In the context of an upcoming high-profile operation like the launch of .eu, some would have been destabilised by such scathing criticism. Not Van Wesemael and his colleagues.

The team held to a matter-of-fact, no-offense-taken approach. "*I would respond that at least we knew what 'not' to do,*" laughs the EURid General Manager. "*Getting questions on the .be failure wasn't unexpected, but it's true that we had learned a lot through those problems. We also knew that the questions we were getting weren't out*

of a lack of interest in .eu. The market wanted the domain. People were actually asking us to speed up the launch timetable! But, at the same time, they were voicing doubts about whether we would be able to survive the first hours."

It took a firm hand to resist pressure from an industry hungry for new products to sell, from politicians eager to give Europe its own Internet label, and from doubters happy to put past mistakes back on the table. But although there were some tense moments for the EURid crew at launch, there was definitely a firm hand at the wheel. *"We had our first test of our systems on December 7, 2005. Yes, the volumes were much lower because this was a Sunrise only for trademarks, but it showed everyone that the .eu system worked fine. There was a lot of stress for those first few seconds, when the volume of requests coming in was quite high. But December 7 had brought us confirmation that everything we had built was sound. The real test came on April 7, 2006, with everyone now trying to get the best names. That was the moment when everyone took a deep breath!"*

HOME RUN

By the time the dust had settled, Europe's domain was a resounding success.

Despite all the questions, the disputes, the scams, the negotiations and the politics, .eu had been entrusted to the right team. The results EURid produced far exceeded the best-case scenarios drawn up in the period leading to the 2005-2006 launch.

In less than one month, .eu had soared past the 1.8 million-domain mark.

Just months after its April 2006 grand opening, the suffix was already Europe's third largest, close behind historical heavyweights .co.uk (England) and .de (Germany).

It ended its inaugural year closing in on 2.5 million domain names. *"It will extend European businesses' marketing reach while protecting them from scams under European law,"* said Viviane Reding, the European Commissioner for Information Society and Media, just before .eu opened to the public[1]. *"For Europeans, a .eu address will make it easier to be visible online. I expect Europe's Top Level Domain to become as important as .com."*

The .eu phenomenon could be well and truly measured in the names

[1] EURid newsletter March 2007

people registered.

There was humour with names like thisisthelongesteuropeandomainnamealloverthe worldandnowitismine.eu, making full use of the 63-character maximum set for the length of a .eu domain and showing that, to Europeans (in this instance, a registrant from Germany), their new suffix was also about having fun.

There was a celebration of cultural differences, as communities like the Welsh village behind the registration of llanfairpwllgwyngyllgogerychwyrndrobwllllantysiliogogogochuchaf.eu found in .eu a powerful way to broadcast their distinctiveness to the world.

In 2006, .eu became an instant success. Ten years later, it is a lasting testament to the spirit of community, innovation, humility and determination that made the EURopean IDentity possible. An endeavour spanning 3 public bodies[1] and 5 national registries[2]. One that brought together registrars from 37 different countries and, in 2015, saw 761 registrars serving those domain buyers for a total of just under 4 million domain names▸VI.

This book tells the story of that success.

SOURCES

I https://www.dnsbelgium.be/en/history
II http://www.ispa.be/
III http://agoria.be/en/about-Agoria
IV http://www.beltug.be/
V http://www.bipt.be/en
VI http://www.eurid.eu/files/publ/quaterly_2014_Q4

[1] The European Council http://www.consilium.europa.eu/en/european-council/, the European Parliament http://www.europarl.europa.eu/portal/en and the European Commission http://ec.europa.eu/index_en.htm.

[2] EURid's founding members were the Belgian, Italian and Swedish registries, with the Czech and Slovenian registries joining later.

For Europeans, by Europeans

The digital world as we know it was supposed to end on January 1, 2000. The Millennium Bug – Y2K to its friends – was going to wipe out our computers just because years before someone had skimped on two of the four digits needed to write a calendar year.

But as the new millennium rolled in, nothing ended. A major shock was coming the digital community's way, but it had nothing to do with dates and everything to do with speculation.

On March 10, 2000, the NASDAQ reached a peak from which things started to progressively go downhill. It seemed the Internet had grown too fast, too soon. A bubble built on the golden promise of a shining new medium that took the name of its star label: .com!

It had all started with the rabid success story of a company that, barely a year after being founded, became the symbol of the multimedia avalanche the Internet promised. As a testament to how quickly fortunes were made and ravaged during the 'dot-com' boom, the product that made this company a household name doesn't even exist anymore. On August 9, 1995, Netscape exploded onto the New York Stock Exchange with an IPO that saw it more than double its opening share price of $28 before dropping back slightly to end its first day of trading at $58.25[I]. Come December, Netscape shares were worth $174 apiece.

Netscape wasn't making any money. But it was making a revolution. A new term was coined to describe this game-changer: the web browser. By allowing media-rich content to be published on the Internet's main

software layer[1], the World Wide Web, Netscape unlocked the Internet's true potential.

Suddenly, Internet-related companies were the new darlings of Wall Street. But the real significance of Netscape's IPO wasn't financial – it was historical. The Web browser did for the Internet what Apple would do years later for the smartphone. It turned an esoteric device into something that literally everyone could use. Until then, the Internet had been about as user-friendly as a DOS[2] command line. To get us all online, something was needed that a granny could use just as easily as a computer scientist.

This new Internet age also brought on a new economy. One where setting up a business is as cheap and simple as registering a domain name and posting a website behind it. Where public services are available at any hour of the day or night. Where new ideas can grow into major companies in a flash. Where speech can be freed from oppressive regimes. Where distances shrink and yesterday's fantasy of being able to do live video calls is fact.

NUMBERS DON'T LIE

As the dot-com bubble burst, the doomsayers were once again out in force. Only this time they weren't predicting the end of computing, merely the economy that it had spawned.

Suddenly the only viable business was traditional bricks-and-mortar. A short-sighted view that many Internet innovators were soon going to prove wrong.

The writing was already on the wall.

Domain name counts are a good measure of how healthy online activity is. So if the Internet really was finished by late 2000 / early 2001, the number of registered domain names should have begun to drop. In January 2000,

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[1] In its basic structure, the Internet resembles any computer system. It has a layer of plumbing upon which a system is built which can run software. In the Internet's case, the plumbing is the actual physical network, the system is embodied by the set of protocols and standards that make the Internet work, and the software layer is made of applications like the Web or e-mail.

[2] DOS for Disk Operating System: the basic, and very user-unfriendly systems used to operate computers before the advent of graphic user interface (GUI) operating systems, such as Microsoft's Windows or Apple's iOS.

there were about 8 million .com domains[II]. A year later, that number had shot to 21 million. An increase of more than 162% right in the middle of the bursting bubble!

However, the ripples from the burst dot-com bubble did make themselves felt. By the start of 2002, the rate of growth started to turn negative. In December 2001, the number of .com names reached what was then a peak of just over 23 million. Then the curve inverted, dropping back to just under 22 million 12 months later. But the lull was short-lived – by January 2004, total .com names were back over the 26 million mark.

Yet domain name registration volumes provide an incomplete picture of the Internet's march towards ever-greater success.

Comparing the world population figures with the number of Internet users paints the picture that's worth a thousand words to describe the colossal period of change that was happening. We all started to realise that our lives were being rewritten by this interconnected system of computers and servers. Main Street jumped on the Internet bandwagon, regardless of how technologically hungover Wall Street was feeling.

Admittedly, before the bubble burst, Internet usage had been making huge percentage gains each year. Figures are hard to verify, but some[III] put the rate of growth at over 70% from 1994 to 1996, over 50% in 1997 and 1998, and still close to 50% in 1999 and 2000.

The rate of growth did drop to just over 20% in 2001, as the dot-com tsunami hit, but by that time the number of users had passed the half billion mark. By 2005, there were already more than a billion users; and by 2010, the 2 billion mark had been reached.

Going into 2015, more than 3 billion people are estimated to be accessing the Internet on any device being used in their home (the prevailing definition of an Internet user).

Throughout this time, right from way back in 1994, the annual rate of growth of the human population has varied little, staying around 1.20%. Estimates are that the number of humans on the planet passed the 7 billion mark either shortly before the end of 2001 (United Nations) or shortly after (US Census Bureau).

Clearly, the growth of the Internet was not being fuelled by more and more people being born and connecting, but by the ever-greater impact the Internet was having on our everyday existence.

Simply put, the Internet was changing the way we do everything: live, work and play.

EUROPE PLANNING AHEAD

So, neither Y2K nor the dot-com bubble could detract from the fact that the Internet was shaping up to be a major driver of economic and personal growth. Whilst some in America were still reeling from the huge drops on the NASDAQ in the early 2000s, European eyes were already firmly set on the future.

During a two-day special meeting in March 2000 in Lisbon, Portugal, the European Council[1] declared its intention to boost the development of a knowledge-based economy and laid the foundations for a new European Internet suffix.

The first step was to recognize the changing global environment and understand the need to act. "*The European Union is confronted with a quantum shift resulting from globalisation and the challenges of a new knowledge-driven economy*," the European Council presidency concluded at the end of the March 23-24, 2000 meeting[IV]. "*These changes are affecting every aspect of people's lives and require a radical transformation of the European economy. The Union must shape these changes in a manner consistent with its values and concepts of society.*"

A European perspective was being applied to a global phenomenon. As the Internet's influence on the world's economies grew, a measure of antagonism was making itself felt between the US and the rest of world.

Although many have contributed to the creation of the Internet, it was fine-tuned in the US: so America inherited significant swaths of its governance. "*There were three critical phases,*" Vint Cerf, one of the 'fathers of the Internet' and Google's Chief Internet Evangelist, told Forbes in 2011[V]. "*The first was packet switching, which was independently conceived by Leonard Kleinrock at MIT and UCLA, Donald W. Davies at the U.K.'s National Physical Laboratory, and the late Paul Baran at Rand Corp. The second phase was actually building a packet-*

[1] From the Council's website (http://www.consilium.europa.eu/en/european-council/): The European Council is the EU institution that defines the general political direction and priorities of the European Union. It consists of the heads of state or government of the member states, together with its President and the President of the Commission.

switched network. The best-known one was the Defense Department's ARPAnet, *led by Larry Roberts. Its purpose was radical: a network that could share information across heterogeneous machines. The third phase was building a network that could extend* ARPAnet's *machine independence by connecting to other networks. That's what Bob Kahn and I set out to do with the* TCP/IP *protocol."*

So, America got a head start, and made very good use of it. From a business angle, of course: with fortunes being made (and lost) across the Atlantic before anyone in Europe had even really heard of the Internet.

And on governance. In 1998, the Clinton administration set up the Internet Corporation for Assigned Names and Numbers (ICANN)[VI] to coordinate the allocation of the Internet's three sets of unique identifiers[VII]: Domain names and the system that goes with them (the Domain Name System or DNS), the Internet Protocol (IP) addresses, and the protocols that govern these names and addresses.

ICANN's nugget is the Internet Assigned Numbers Authority (IANA)[VIII] function, which is 'owned' by the US government and operated by ICANN under contract with that government's National Telecommunications and Information Administration (NTIA)[IX].

IANA gives ICANN control of the Internet root. In the Internet age, that is real power.

Not surprisingly, this de-facto control of the Internet has gone from minor annoyance to festering sore on the international political scene.

ANCIENT OLD WORLD

Europe has been at the forefront of the fight to restore some measure of balance to the way the Internet is managed as a critical world resource. The March 2000 Lisbon European Council meeting made no bones about the importance of being at the head of the class in the new Internet era. It identified this as a crucial aspect of boosting innovation to stimulate economies, modernise public service and education systems, and create more jobs.

There was a strong social element to this agenda. The resulting prosperity that these deep improvements in European societies would bring was seen as a safeguard against extremism.

"*The Union has today set itself a new strategic goal for the next decade,*" said

the European Council on March 24, 2000. "*To become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. Achieving this goal requires an overall strategy aimed at preparing the transition to a knowledge-based economy and society by better policies for the information society and* R&D*, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market; modernising the European social model, investing in people and combating social exclusion; and sustaining a healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix.*"

To achieve its ambitions, the Council suggested actions in a variety of avenues, from providing a more robust legal framework for e-commerce and related services to greater liberalisation of the telecoms market.

Other focus areas were boosting Internet access and reducing the cost of what was now seen as a basic human right, putting Internet facilities in all schools, and getting public services online.

The banner call to action was 'an information society for all'.

An e-Europe initiative was put on the table as a way to strengthen Europe for the new millennium. In fact, reading the March 2000 Lisbon meeting conclusions today, they are more call to arms than anything else. Europe had taken the full measure of what was at stake. Facing an America that was (at least) a decade ahead in getting online, and other countries that were no longer just emerging but ready to be overpowering, the Old World was starting to feel positively Ancient.

"*The shift to a digital, knowledge-based economy, prompted by new goods and services, will be a powerful engine for growth, competitiveness and jobs,*" concluded the European Council in Lisbon. "*In addition, it will be capable of improving citizens' quality of life and the environment.*"

"*Businesses and citizens must have access to an inexpensive, world-class communications infrastructure and a wide range of services. Every citizen must be equipped with the skills needed to live and work in this new information society. Different means of access must prevent info-exclusion. The combat against illiteracy must be reinforced. Special attention must be given to disabled people. Information technologies can be used to renew urban and regional development and promote environmentally sound technologies. Content industries create added value by exploiting and networking European cultural diversity. Real efforts must be made by public administrations at all levels to exploit new technologies to make information as accessible as possible.*"

"Realising Europe's full e-potential depends on creating the conditions for electronic commerce and the Internet to flourish, so that the Union can catch up with its competitors by hooking up many more businesses and homes to the Internet via fast connections. The rules for electronic commerce must be predictable and inspire business and consumer confidence. Steps must be taken to ensure that Europe maintains its lead in key technology areas such as mobile communications. The speed of technological change may require new and more flexible regulatory approaches in the future."

ADDRESS BOOK

Waking up to the importance of putting an Internet-focused initiative at the forefront of Europe's agenda was a major step: it led Europe to feel that more control was required over the network's front door – Internet addresses.

The Domain Name System (DNS) is basically a giant phone book. Services offered on the Internet (such as websites, for example) are referenced by a unique address called an IP address[1]. Just as we used to write down phone numbers in a rolodex next to the names of the people they were for, we could very well have made a rolodex for IP addresses to help us remember our favourite websites.

Problem is, IP addresses are just as complicated to remember as telephone numbers. Today, with the advent of smartphones, we don't even bother to remember phone numbers. We simply type the name of the person we want to call and our phone does the rest, mapping the name to the number stored in its address book.

The DNS works in the same way. It maps IP addresses to names that are easier for us humans to remember. For example, the address www.EURid.eu is simpler for us to recall and use than 91.220.191.212, the equivalent IP address for this website. Domain names such as 'eurid.eu' are the pathway onto the Net, routing traffic to websites, e-mail accounts, FTP[2] servers, and any other service that depends on the Internet's plumbing to link users to machines.

Domain names have a specific format and structure. Labels are

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[1] Internet Protocol address: a number assigned to any device connected to the Internet.

[2] File Transfer Protocol: used to transfer files from one computer to another.

separated by dots starting at the rightmost part of the name. To the right of the first dot is the Top Level Domain, or TLD. If the Internet is an information superhighway, then TLDs are the signposts on that highway. They help direct users to specific content.

Why do domain names read from left to right? No one really seems to know. Some suggest that the computer scientists developing the first e-mail addresses wanted them to read the right way. As the domain name part of the address comes after the @ sign, this meant reversing the reading order. Others find logic in having the most descriptive part of the address come first. The TLD being more generic than the subsequent levels by design (the 'eurid' part of the eurid.eu domain is more specific than the 'eu' part), it goes at the end.

Whatever the reasons, TLDs are the top of the Internet's naming pyramid. Each subsequent level is a child of the previous level, or domain. There can be up to 127 levels in a domain name – i.e. a total of 126 dots!

In 2000, there were two main categories of TLDs. To simplify: if it had 2 characters, it was a 'country code' or ccTLD. If a TLD had more – such as .com – it was a 'generic' or gTLD. Around 250 countries operated their ccTLD at the turn of the century[X] – like Germany with .de, or Japan with .jp.

The generics were the Internet's legacy TLDs. The first suffixes, 7 of which were created in the 1980s when the DNS was being set up, included 3 that were open to all (.com, .net and .org) and 4 (.mil, .edu, .gov, .int) that were more restricted in their use.

By 2000, ICANN had initiated a programme to add diversity to the Internet's namespace, and 7 new gTLDs were given the green light.

Four – .biz, .info, .name, and .pro – were defined as 'unsponsored'. Basically, they were .com clones in that they could be used by anyone without restriction. The string itself was the differentiator. For example, .info was pitched as a road sign for information-related content on the Internet superhighway.

The other 3 – .aero, .coop, and .museum – were 'sponsored' in that they were representative of specific communities and, generally speaking, restricted to that community. So, for example, only museums could register a .museum domain name. It was up to the operator of the TLD, the registry, to ensure this was the case.

The creation of these new gTLDs, the first new suffixes on the Internet

since the inception of the DNS, showed that alternatives to an all-but-hegemonic .com were possible.

And if Internet users could rally behind banners such as .info or .biz (volumes in both TLDs soon soared past a million registered names), surely they would be keen to reap the benefits of TLDs that might have meaning beyond just the commercial or the English language. TLDs that would be cultural in nature and geographic in intent, for instance. So described, such a TLD sounds very much like a cc/g hybrid … which did not exist in 2000.

THEORY INTO FACT

The European Council had given the initial impetus – now it was time to turn good intentions into something more concrete. On April 22, 2002, the European Parliament and the European Council published Regulation 733/2002[XI]. The focus of this piece of Community law? The implementation of an Internet suffix for Europe: .eu.

The ambitions set out for the .eu domain in the text of the April 2002 European regulation are a direct follow-on from the general principles stated by the European Council in March 2000. The regulation that paved the way for the creation of a European TLD was clear: .eu should help Europe fulfil its information society ambitions.

It should be at the service of Europeans and help them get more out of the Internet.

First of all, .eu should help improve access to the Internet. This had been defined as a basic human right, and any European naming initiative would be remiss in not seeking to extend that right to as many citizens of Europe as possible. In May 2011, Frank La Rue, UN Human Rights Council Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, delivered a hard-hitting report[XII] underscoring *"the unique and transformative nature of the Internet not only to enable individuals to exercise their right to freedom of opinion and expression, but also a range of other human rights, and to promote the progress of society as a whole."*

The report is considered a landmark document. It is a strong endorsement of the Internet as one of the most significant tools ever created to foster global emancipation of the human race. *"The vast potential and benefits of the Internet are rooted in its unique characteristics, such as its speed, worldwide reach*

and relative anonymity," writes La Rue.

The report also serves as a reminder of the Internet's recognition as a human right, not only at the UN level, but also at the national level. *"In some economically developed States, Internet access has been recognized as a right. For example, the parliament of Estonia passed legislation in 2000 declaring Internet access a basic human right. The constitutional council of France effectively declared Internet access a fundamental right in 2009, and the constitutional court of Costa Rica reached a similar decision in 2010. Going a step further, Finland passed a decree in 2009 stating that every Internet connection needs to have a speed of at least one Megabit per second (broadband level). The Special Rapporteur also takes note that, according to a survey by the British Broadcasting Corporation in March 2010, 79% of those interviewed in 26 countries believe that Internet access is a fundamental human right."*

Several initiatives have sprung up, either as precursors to the UN's recognition of the Internet as a basic human right, or in the wake of this declaration[XIII]. They are often in line with the European drive towards Internet naming independence through the .eu domain in that they promote Internet use as a positive agent of economic, political and educational change.

MASTER OF THE EUROPEAN DOMAIN

Accessing the Internet is a prerequisite for e-commerce and e-public services. In its statement of intent, the European Parliament views adding .eu to the Internet's namespace as a potent mechanism for empowering Europeans in these areas. *"The creation of the.eu Top Level Domain (TLD) is included as one of the targets to accelerate electronic commerce in the e-Europe initiative as endorsed by the European Council at its meeting in Lisbon on 23 and 24 March 2000,"* states Regulation 733/2002.

The European Parliament also recognised the technical importance of a TLD. *"TLDs are an integral part of the Internet infrastructure,"* the .eu-founding regulation also states. *"They are an essential element of the global interoperability of the World Wide Web ('WWW' or 'the Web'). The connection and presence permitted by the allocation of domain names and the related addresses allow users to locate computers and websites on the Web. TLDs are also an integral part of every Internet e-mail address."*

The intent was also to counterbalance the legacy TLDs' hegemony, especially as most of those TLDs, starting with the all-conquering .com,

are operated in the US or by US-based companies. There was understanding that TLDs bring unparalleled technical control as they sit right next to the Internet's root. Also, the operator of a TLD is very much master of his domain (pun intended). He can determine the rules anyone wishing to register names in the TLD will have to follow. He can design and build an infrastructure as resilient as it needs to be to support that TLD, rather than depending on third-party solutions implemented a continent away by people who may not share the same interests or priorities.

Therefore, operating its own TLD was a way for Europe to become less dependent on US-centric governance (ICANN) and operations (legacy TLD registries), whilst providing European Internet users with more opportunities and the European domain industry with a product it could be first in line to sell.

A European suffix would provide greater choice to users seeking to register domain names for either their personal or professional use. It would increase the level of competition in the domain industry by providing an alternative to the existing g and cc TLDs. In turn, this would serve users, as registration prices were expected to drop as new naming options became available.

Also, the European domain industry would benefit, as .eu would require a registry and registrars. By paving the way for a powerful new registry to be created – one which would be based in Europe – and by giving European registrars a product tailor-made for their client bases, Europe's leadership was acting in the best interests of both its citizens and an industry which, in the early years of the 21st century, was nascent in Europe and whose most prominent players were American companies.

Bottom line: .eu was to be a domain for Europeans, by Europeans.

"*Through the .eu TLD, the Internal market should acquire higher visibility in the virtual marketplace based on the Internet*," states Regulation 733/2002. "*The .eu TLD should provide a clearly identified link with the Community, the associated legal framework, and the European marketplace. It should enable undertakings, organisations and natural persons within the Community to register in a specific domain which will make this link obvious. As such, the .eu TLD will (…) be a key building block for electronic commerce in Europe.*"

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Before .eu

Over the years, so many people had a hand in helping create .eu... too many to mention!

But one man was instrumental in rallying Europe's governing authorities around the concept of a Top Level Domain for the continent. Long before this European domain even had a name, before the Internet's naming and addressing systems had a dedicated organisation – ICANN – to coalesce around, Christopher Wilkinson was already hard at work laying the foundations of what would later become .eu.

"Back in the 1990s, I saw there was a problem that would probably not be solved in the near future," Wilkinson recalls. *"I felt there was a need for a European domain. To move away from the .com monopoly of the time, if nothing else. The problem was: what code to use for this domain, and how to get approved in the Internet root?"*

LEVELLING THE DOMAIN PLAYING FIELD

Born in China during WWII, Christopher Richard Wilkinson is now retired[1]. Educated in Hong Kong, England and the US, Wilkinson obtained a Bachelor of Arts Honours Degree in Natural Science at Cambridge University and later attended both the London Business School and Harvard University. He lives in Belgium and is fluent in English, French and Spanish.

Wilkinson joined the European Commission in Brussels in 1973. Before that, he'd worked at the Commonwealth Secretariat in London[▸I], the OECD (Organisation for Economic Cooperation and Development)[▸II] in Paris, and the IBRD (International Bank for Reconstruction and Development)[▸III] in

[1] At the time of writing this: 2015.

Washington DC.

Some may see Wilkinson as the domain world's Gandalf. Wise, grandfatherly, and sometimes aloof because his thought processes are working on a different plane to the conversation going on around him. Chatting to the man, it's hard not to be impressed by the aura of experience he carries around him. Wilkinson spent more than 30 years at the European Commission. There was a flurry of activity in the 90s – and he was at the heart of it. The once disjointed Domain Name System community was rallying around such ideas as fostering competition and choice, or creating a focal point for the many stakeholders wishing to work on domain name policies.

As the Internet grew far beyond the somewhat confidential network used mainly by the research community, the early 1990s saw tensions rise. Several key developments led to a vast rethink of the modus operandi of the time.

First of all, it was no longer viable to have one man, even someone as dedicated and trustworthy as Jon Postel, handle the administration of the entire Internet root zone. The US federal government, aided by the private sector, started to put mechanisms in place to better manage the allocation of both TLDs and the domain names registered under them.

Management of the Internet's root zone, housed under what was then already known as the Internet Assigned Numbers Authority (IANA), had to be scaled up. So did .com (even more synonymous with the Internet at the time than it is today) domain registrations.

A for-profit company, Network Solutions Incorporated (NSI), was awarded a contract to manage .com, a TLD over which it had full reign, being both registry and lone registrar. When NSI started charging for .com registrations in 1995, then went public on the NASDAQ in 1997, many felt enough was enough.

Suggestions started being raised about introducing competition at two different levels. On the TLD front, first of all, by allowing new TLDs to be created. And secondly, on the SLD[1] side, by ending NSI's registrar monopoly and licensing other companies to sell domain name registration services to the public.

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[1] Secondary Level Domain: the level immediately to the left of the TLD and the one at which domain names are registered.

GREEN AND WHITE PAPERS

In May 1996 – at a time when IANA really had no formal status and there was an absolute lack of clarity as to who might be able to suggest new Top Level Domains, who might approve these suggestions, and how any new TLDs might be run – Postel himself rocked the boat with a paper entitled *'New Registries and the Delegation of International Top Level Domains'*.[IV]

In his draft, Postel set the scene from the get-go with an abstract that read: "*This document describes a proposed policy, procedure, and control structure for the allocation of additional Top Level Domains. Further it discusses the issues surrounding additional international Top Level Domains (iTLDs) and registries, qualification proposals for operating such a registry, and justifications for the positions expressed in this paper. This document describes policies and procedures to allow open competition in domain name registration in the iTLDs, and provide the IANA with a legal and financial umbrella.*"

Postel's proposals – which were controversial at the time – immediately had people sit up and take notice. And not just in America.

Other countries had already started operating their own country code TLDs, and these non-US registries did not take kindly to the notion that they might fall under US rule. In the States, the absence of any set mechanism or structure that could be used to make domain name policy and include all stakeholders – from civil society to the private sector, governments, academia and, of course, Internet users – which was implied in Postel's draft, led to the realisation that some kind of domain name system overseer had to be created.

In late 1996, one of the Internet's founding organisations and the place where users are represented, the Internet Society, took it upon itself to set up the International Ad Hoc Committee (IAHC)[V]. Christopher Wilkinson was appointed to the IAHC's Policy Oversight Committee.

After much political bartering and negotiating, this work eventually led to a set of US Department of Commerce proposals to take the control of the DNS away from the US government and place it in the hands of an independent organisation. Issued in February 1998, this 'Green Paper'[VI] was one of the cornerstones of the creation of ICANN.

Having allowed for community discussion, the US authorities then published a final version of its proposals in June of the same year as a 'White

Paper"[VII]. ICANN was incorporated in September 1998[VIII] with the mission to *"coordinate the allocation and assignment of the three sets of unique identifiers for the Internet which are a) Domain names (forming a system referred to as* DNS*) b) Internet protocol addresses and autonomous system numbers c) Protocol port and parameter numbers."*[IX]

SEEKING ALLIES

Clearly, the millennium was going to usher in a new era as far as the way the Internet's core functions were managed. Up until then, the Domain Name System had been an obscure database – outside of a few researchers and specialists, no one had paid much attention to it.

No longer. Now everyone wanted to be involved.

The European Commission kept a watchful eye on these events, and there was an understanding that the US authorities should not be the only voice making itself heard. A Commission response to the White Paper was sent in, and it included a reference to 'regional TLDs'.

At the 41st meeting of the Internet Engineering Task Force (IETF) held in Los Angeles, California, from March 30 to April 3, 1998[X], Wilkinson had his first talk with Jon Postel, then Director of IANA.

The IETF had been created in January 1986 as a forum to help coordinate the people working for the US Defense Advanced Research Projects Agency (DARPA) on the Internet's predecessor, the ARPA*net*. It had since grown into the main body responsible for selecting and developing standards for Internet protocols. This was the heart of the Internet's technical community. If they could be convinced of the need for a continental TLD for Europe, they might prove to be powerful allies in the discussions that lay ahead to get US support for a future .eu.

Wilkinson was working hard to champion the concept of a European domain. After the IETF meeting, he met with Ira Magaziner in London. As a long-time aide to President Bill Clinton and his senior advisor for policy development[XI], Magaziner was heavily involved in the work of getting ICANN off the ground during the organisation's formative years.

Wilkinson met with him again later, this time in the White House, along with Hugo Paemen[XII], who had been the Head of the European Commission's Washington Delegation since July 1995, and who had worked hard to ensure Europe's voice was given the representation it deserved on

Capitol Hill.

It is a matter of historical irony that the man who had done so much to give the Internet a proper governance mechanism would never see his efforts come to fruition. Jon Postel passed away on October 16, 1998, just as ICANN was being created.

Around this time, Europe was trying to ascertain what its country code might be on the Internet, if it ever got approved. *"We went through several options,"* says Wilkinson. "*EUR, EUROPA, EU… But anything that was not a 2-letter code under the ISO 3166 was going to fall under the new gTLD policies which were part of ICANN's charge under the White Paper."*

The International Organization for Standardization (ISO) is the world's foremost authority on standards, developing precise specifications for everything from food to the Internet. Its 3166 standard[XIII] lists every country in the world and gives it a 2-letter code. This served as the basis for the Internet's country code Top Level Domains such as .de for Germany and .ch for Switzerland when Jon Postel and others created them. Obviously, Europe is not a country. So, whatever code the Commission ended up choosing would either have to be in the 3166 list already, or added to it.

EURO TO THE RESCUE!

"*The problem was, the EU code simply did not exist in the ISO 3166 list! When I'd met him and talked about the idea of a European domain, Jon Postel had told me that if we were somehow able to get the code added to that list, then it could be discussed. But until that happened, there was really nothing to do but put the idea of a European domain on hold,*" admits Wilkinson.

Luckily, getting its own Internet suffix wasn't the only grand plan Europe had at the time. "*The change came with the creation of the euro currency. There was a rule in the ISO standard system that if you wanted to have a currency code like GBP or USD, it had to be derived from the territorial code*[XIV]*. So as an example, Great Britain's official ISO code is GB. Ergo its currency code is GBP.*"

As currency codes are a prerequisite for international monetary transactions, Europe's currency-to-be obviously needed one. "*This meant that, by creating the EUR code for the euro currency, ipso facto, EU appeared in the 3166 list, albeit as a reserved code.*"

Both the genesis of .eu and the introduction of the euro were concurrent

events. The currency's name had been set since December 1995 and, even though the actual money didn't go into full use until January 1, 2002, the euro had been introduced as an accounting currency[XV] – i.e. a currency that can be used for all cash-less transactions but that does not yet exist as physical banknotes and coins – 3 years before, on January 1, 1999.

ICANN was 4 months old.

But even before ICANN, there had been examples of the reserved ISO list being used to create ccTLDs.

The most obvious one was the United Kingdom. The country was able to choose .uk as its country code Top Level Domain instead of .gb because the UK code was put on the ISO reserved list. Like .eu, it is marked as 'exceptionally reserved' on the 3166 list. ISO actually uses UK as an example in its definition of the term[XVI]: *"Exceptionally reserved codes – codes that have been reserved for a particular use at special request of a national ISO member body, governments or international organizations. For example, the code UK has been reserved at the request of the United Kingdom so that it cannot be used for any other country."*

OPPORTUNITY KNOCKS

Wilkinson saw the reserved list and the change of situation brought on by the euro as a unique opportunity to get the European domain back on the map.

But although he was the European Commission official in charge of the 'dossier', he was very much on his own as far as actually advancing the case beyond the wall it had hit when the ISO issue was first identified. *"There was very little support from the Commission as a whole, and indeed from my department. But I still argued that, if the ccTLD list used other reserved codes, now that EU was on that list they could use that for a ccTLD as well."*

Not everyone thought this was a particularly good idea. When Jon Postel had allowed exceptions by creating ccTLDs from the ISO reserved list, he had not needed anyone's authority but his own.

Now that the Internet namespace was growing in both size and political importance, there were whispers that allowing these exceptions was probably a mistake. The argument was that the ISO 3166 list should be the Bible, and only those codes active on that list eligible to be ccTLDs.

In the closing days of 1998, the first-ever ICANN Board was formed. A few months later, on May 19, 1999, the Commission's DG XIII had written

to ISO requesting an extension of the EU code to the Internet and the European Institutions. The European Commission is organised in branches, or 'Directorates General', each bearing the responsibility for a specific area or field of expertise. At the turn of the century, DG XIII was in charge of the Commission's Digital Agenda. It was later renamed DG INFSO (Directorate General for Information Society and Media) before being replaced on July 1, 2012 by DG CONNECT (Directorate General for Communications Networks, Content and Technology), the name by which the body tasked with all Internet-related matters at the Commission is known today[XVII].

Right from its inception, ICANN had begun to hold international meetings as a way to bring the discussion on the Internet's naming and addressing resources to the world rather than wait for interested parties to come knocking at the door.

The first meeting was held in March 1999 in Singapore; and the second took place in Europe[XVIII] (in Berlin in May 1999), during which DG XIII held discussions with ISO on the topic of using the EU code for an Internet suffix.

On September 7, 1999, ISO formally responded to the Commission's requests by green-lighting the use of the EU code for the Internet. ISO said it was extending *"the scope of the reservation of the code element EU to cover any application of ISO 3166-1 that needs a coded representation of the name European Union. The ISO 3166/MA has no objections against the exceptionally reserved alpha-2 code element EU being used as a ccTLD identifier."*

The real work on .eu could begin!

ACTIVATE!

Now that it was legitimate – a real ISO code – .eu needed some heavy lifting to get off the ground. Wilkinson put together a multi-stakeholder[1] group, called the Interim Steering Group (ISG), to handle this. The group had wide-ranging participation with members like the European Telecommunications Standards Institute ETSI[XIX], the organisation of European country code TLDs CENTR[XX], registrars, and legal experts such as intellectual property attorneys.

[1] The term 'multi-stakeholder' is often used in governance circles, especially Internet Governance, to describe processes that include many interest groups, or 'stakeholders'.

The ISG was created on May 4, 2000. Later that same year, it started providing Europe's institutions with the data needed to support an official request to ICANN for the delegation of the .eu TLD.

In other words, activating .eu on the Internet.

In July, a letter was sent from the Commission to the US Department of Commerce's National Telecommunications and Information Administration (NTIA), then ICANN's oversight body, requesting the .eu delegation. *"I had advised against this,"* says Wilkinson. *"I had seen from my work on .eu through* CENTR[1] *and the* EC-POP[2]*, that the concept of an Internet community (the word "multi-stakeholder" wasn't used much in those days) – and, in particular, the participation of the private sector – was important for the governance of* ccTLDs*."*

"So I knew there would be some resistance to a purely governmental approach, which is the way the Commission's letter might be perceived. As it turned out, the reply we got from the US *government was that our request was inappropriate because they had delegated this matter entirely to* ICANN*. We were clearly told that we would receive no further response from the* US *government on this matter."*

A second letter, this time to ICANN, proved much more successful. Erkki Liikanen, European Commissioner for Enterprise and Information Society, penned the note and sent it to ICANN's first CEO, Mike Roberts[XXI].

Liikanen's letter provides a comprehensive recap of the road to .eu up to July 6, 2000 (the day it was written) and names Christopher Wilkinson as ICANN's point-of-contact for .eu:

The European Commission has thoroughly studied this initiative with the European institutions, ISPs*, industry and the local Internet community in Europe,"* wrote Commissioner Liikanen. *"Earlier this year we conducted a broad and open public consultation on the proposal, based on a consultation document that has been posted on the web. That consultation confirmed widespread support from major Internet interests in this proposal. Moreover, the setting up of the .*EU *Domain is now part of the eEurope Action Plan, endorsed at the recent Feira European Council and thus endorsed at the level of the Heads of State/Government of the 15* EU *Member States.*

"Last year the Commission also asked the ISO *3166 Maintenance Agency to agree to using the reserved* EU *code for an Internet* TLD*.* ISO *has agreed to our request and has decided to extend the scope of the reservation of the code element* EU *to cover any application of* ISO *3166-1 that needs a coded representation of the name European Union,*

[1] The member organisation for ccTLD operators: https://centr.org

[2] European Community Panel Of Participants

including its being used as an Internet Top Level Domain. Therefore, we hereby request that the .EU Domain be delegated to the European Union by ICANN."

In response, the ICANN Board said it would continue to follow the directions of the ISO standard organisation. This was de facto giving .eu the go-ahead. *"On the understanding that there would be a clear expression of interest on behalf of the Internet community in Europe,"* adds Wilkinson.

FOR OR AGAINST

This was far from a given. Europe's post-war history has often looked like one long love-hate relationship between countries being pushed to unite by the lingering trauma of WWII, and yet naturally distrustful of each other and any attempt to blanket them through centralised governance.

There was no reason to believe that creating a common Internet domain should prove any easier than any other move towards greater centralisation in Europe.

Unsurprisingly, Europe's national Internet suffix community was not particularly keen on a potential rival. Especially one that threatened to combine national and transnational qualities their own country codes did not possess.

"For a long time, the ccTLD group that became CENTR were not at all in favour of a .eu," says Wilkinson. *"They actually organised a conference in Brussels which was in essence critical of this proposal."*

Opponents of the European domain initiative used the ISO exception to argue that a .eu should not be created. The 3166 Reserve List should not be used to make new Internet Top Level Domains, they said.

"They lost that particular argument, but they had another one which was perhaps more pertinent: that in at least some markets, .eu would come into direct competition with the existing ccTLD."

But if the continent's TLD operators were against .eu, the companies actually selling domain names to consumers were for it! They saw an opportunity to generate more business.

Other stakeholders were also in favour. Wilkinson's ISG brought them together and fostered discussions around .eu. The group ended up penning a report that was instrumental in convincing ICANN that there was widespread support for .eu in Europe: "The kind of support that went

well beyond whatever governmental interest the Commission itself had expressed."

Wilkinson's tireless networking with all interested parties – promoting what were at the time very forward-looking views on including as many voices as possible in the decision-making process for resources such as Internet domains – plus the ISG report, did a lot to placate the ICANN community's fears that .eu would end up being solely government-led. *"The irony was that, at the time, inside the Commission it was not an easy situation at all. The Commission departments weren't at all used to external entities – like ccTLDs, registries and registrars – having an influence over policy. That of course has changed in the intervening decades, but in those days this was treated with a certain amount of scepticism. The Commission's legal department argued that it was not possible to delegate the governance of the TLD to external entities."*

"Bottom line: the point of view was that the European Union, and therefore the Commission, owned the code!"

Wilkinson is his usual pragmatic self when suggesting that international standards are not owned by anyone – the proof of that pudding being that anyone who wishes can use the ISO two-letter country codes, without asking the government concerned, or even ISO!

EARTHQUAKE!

Whatever the specific arguments on whether Europe's future domain should belong to its governing bodies or be entrusted to a more widespread form of governance, .eu had now been given formal substance through its inclusion in the ISO list. The Euro had helped take it from flight of fancy to real possibility. The global multi-stakeholder community represented by ICANN had accepted it. It seemed that nothing now stood in .eu's way.

Then the ground fell under everyone's feet at the European Commission.

From 1984 to 1995, Jacques Santer[XXII] was the 22nd Prime Minister of Luxembourg. He then went on to become President of the European Commission the year he left national office. The Santer Commission was heavily involved in the introduction of the euro.

But it would become famous (or, more accurately, infamous) for something else altogether. Allegations of fraud, favouritism and a total lack of transparency and accountability led to a full-scale investigation of the

Santer Commission by an independent committee.

The result was a devastating indictment of the European Commission of that time as a self-serving culture that was considered to be unacceptable for people holding public office and tasked with managing the European Union[xxiii].

Former French Prime Minister Edith Cresson was strongly criticized for giving jobs at the Commission to friends and covering up irregularities in programmes she was responsible for. Whilst the investigation cleared most of the commissioners of the time of any fraudulent activity, Santer himself came under heavy fire. In many ways, Cresson was Santer's downfall, as it became apparent that he obstructed investigations into misconduct in the French commissioner's department instead of bringing the truth to the fore.

Santer and Cresson were not the only targets of the investigative committee's ire: in its report, it charged that an absence of any sense of responsibility was ubiquitous at the Commission, even amongst its staff.

An emergency meeting was held in Brussels on Monday, March 15, 1999. Although the tainted commissioners proved not particularly agreeable to stepping down – and no mechanism was in place to force their exit – shortly after midnight that day, the entire Commission ended up resigning! The enquiry's findings were such that there really was no other choice.

LOST TIME

The Santer debacle was extremely damaging to the image of an institution that had never really managed to garner public trust in the first place. It also effectively left the Union with an operational vacuum.

.eu was part of the collateral damage – like so many other IT-related projects placed under the purview of the commissioner for Industrial Affairs, Information and Telecommunications Technologies, Martin Bangemann, the European domain was orphaned by the *en masse* Santer Commission resignations.

Wilkinson: *"Martin Bangemann left the Commission. His cabinet members were dispersed to different departments. To all intents and purposes, we were left with a political interregnum. Nothing happening at all."*

Although an interim Commission was seated in the immediate aftermath of the Santer scandal, its charge was largely to hold the fort until

true successors could be found. The interim President was still heavily linked to the previous Commission: Manuel Marin – in office from that fateful day of mass resignations on March 15, 1999 until September 16 of that year – had been one of two Vice Presidents in the Santer Commission.

Real change came on September 16, 1999, when Romano Prodi became the Commission's 10th President. During Prodi's tenure, the European Union formally adopted the euro as its single currency and welcomed several new countries (which had once been part of the Soviet Union) as member states.

Prodi ended his term as President of the European Commission on October 30, 2004, by which time .eu was just six months away from becoming active on the Internet, with the first .eu domains coming just eight months after that.

But as Prodi took office in the final months of 1999, the Commission was still reeling from the Santer episode. Projects like .eu were on hold, even after the new Commission became operational.

Then Erkki Liikanen was appointed commissioner for Enterprise and Information Society of the Prodi Commission. *"He was briefed on existing projects and he actually picked .eu out and said he wanted to push on with this,"* Wilkinson recalls.

At this point, Wilkinson was pushed away from the project he had been championing. Up until then, ICANN's Governmental Advisory Committee (GAC) – the place for national and international governments inside this Internet Governance vessel – had been using Australian generosity to operate its secretariat. *"Then the Australians were told by their government that they could no longer continue providing the GAC secretariat. It was becoming a fairly large and expensive job."*

A job Wilkinson would end up doing. Through backroom discussions during the Yokohama ICANN meeting[XXIV] in July 2000, an informal agreement was reached whereby the EU would take up the GAC secretariat for what was to be a limited period of time.

The meaning of the word 'limited' can sometimes be quite loose – Wilkinson actually held the role from 2002 to 2005!

"*My new position presupposed a high degree of political neutrality and independence. It was not possible for me to continue promoting the .eu dossier. So it was passed on to other officials and, in due course, this led to the drafting of Regulation EC no 733/2002 on the implementation of the .eu Top Level Domain*[XXV]."

PENT-UP DEMAND

Wilkinson had started pushing the idea of a Top Level Domain for Europe before the turn of the century. It took the better part of a decade for that fantasy to become reality.

By the time .eu started rolling out in late 2005/early 2006, Wilkinson had retired. The domain's resounding success took everyone by surprise, except perhaps the man who had spent so long doing so much to see it become one of the Internet's landmarks.

"To everyone's surprise, .eu just took off," Wilkinson recalls, implying that the domain's ultra-long gestation period actually ended up helping it get off the ground so quickly and on such a massive scale. *"The first few days of the land rush were a complete surprise to everyone, including* EURid *itself. But as a by-product of the considerable delay in launching .eu, there was an enormous backlog of businesses and people who, for reasons that were sometimes positive and sometimes defensive, absolutely wanted to get their .eu domain name."*

Wilkinson considers it almost miraculous that nothing broke when this pressure cooker of .eu demand was finally released: *"It's a considerable credit to Marc Van Wesemael and his team that the original technical infrastructure survived the early workload, because nobody expected anything on that scale. I'd known for years that the demand was there, because people kept contacting me to ask for a pre-registration of their .eu domain – but the scale surprised even me."*

PRECURSOR

To make .eu happen, Wilkinson had had to fight hard to get the ICANN community to accept an exceptional status for the EU code as a bona fide part of the ISO country code list.

Well, no good deed ever goes unpunished.

When Wilkinson left to become part of the Governmental Advisory Committee, negotiations still had to take place between the Commission and ICANN to get .eu delegated[1]. To help make this happen, the Commission had agreed to another exception for .eu – but this one probably served ICANN more than it did Europe. The 'deal' was that whoever ended up managing the continent's domain would not only come under the Commission's remit,

[1] When a domain becomes active on the Internet, it is said to be 'delegated'.

they'd have to sign a contract with ICANN as well.

A strange stipulation for the Commission to include in its regulation on .eu – because, for most ccTLDs, there is no direct contract with ICANN. Whilst ICANN is in charge of the management of the Internet's root, most governments consider their country's Top Level Domain to be a national resource and therefore not subordinate to an organisation that was created by the US government and today remains an exception in the world of international governance.

"*It is probable that, prior to the delegation of .eu,* ICANN *encouraged the Commission people at the time to set what must have been a good precedent from* ICANN*'s point of view,*" Wilkinson posits. "*A lot of ccTLDs consider their independence – what they call their sovereignty – to be sacrosanct and, therefore, they will limit their relationship with* ICANN *as much as possible. That may be OK from the point of view of the individual registry, but collectively it means that the European multi-stakeholder presence in many* ICANN *fora is under-represented and sometimes even absent. So I actually think that, overall, the European interest is for the ccTLDs to play a much stronger role in* ICANN*.*"

At the time, the conventional wisdom for non-US actors was to attempt to reduce ICANN's power by not doing anything to acknowledge it. By agreeing to increase its involvement in ICANN, and making that involvement official, the Commission and .eu probably set a precedent for a much more realistic global multi-stakeholder environment.

Decoded in this way, the Commission's decision, which at the time had many scratching their heads in disbelief, can actually be considered extremely forward-thinking.

The European domain, a precursor! This would not be the last time…

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CHAPTER 3

The first of a new breed

Think back to VHS tapes that could only record a maximum of 3 to 4 hours of low-quality video. Or personal stereo players that were all the rage despite the audio cassettes they carried being as clumsy as they were cumbersome.

Now fast-forward to today's ultra-high-capacity MP3 and MP4 players. Seems like an age ago that we were all walking around with flared trousers and huge headphones, hitting the video club to rent those tapes, doesn't it?

To us, it all seems as far away as cavemen and flint stones. Yet it wasn't actually that long ago... VHS was with us until after 2000, and Sony only stopped manufacturing the cassette Walkman in 2010!

So it goes with the world of Internet domain names. Things have moved on so far and so fast that it's hard to remember that, when the European Parliament started building the foundations of the European domain in 2002, gTLDs were few and far between.

NEW TLDS AND FAST TRACKS

But since .eu's launch, the Internet's namespace really has changed as much as our personal stereos have. According to the IANA repository of Top Level Domain, 2015 started with 470 gTLDs (including 39 non-ASCII 'IDN' TLDs) and 290 ccTLDs (including 41 IDN suffixes) live in the Internet root.

Suffixes such as .ski, .guru or New York's .nyc highlight the massive expansion of the namespace made possible by the new gTLD programme ICANN initiated in 2008. *"We estimate we will have approximately 1300 potential TLDs to be delegated when the programme is done,"* said ICANN's vice president of

gTLD Operations Christine Willet in an early 2015 presentation[I].

Those numbers refer only to the first round, the 1930 new gTLD applications received in 2012[II]. But ICANN is committed to subsequent rounds. So there will be more and more new Internet suffixes in the g space.

At the same time, the number of TLDs in the cc space is also growing, thanks mainly to another ICANN programme: the IDN ccTLD Fast Track[III] Initiated just before the new gTLD programme, this idea was actually forced on ICANN by national governments.

One of the many offshoots of the political tensions brewing around the issue of Internet governance at the start of the 21st century was the notion of multilingualism. No longer would countries like China and Russia tolerate a US-centric Internet on which the only language was English and the only character set was Latin.

ONE WORLD, ONE LANGUAGE?

This issue of language, and the cultural ramifications that go along with it, was not taken seriously by the American Internet governance elite until the threat of seeing a country like China build its own Internet began to look real[1].

Still, many native English speakers did not get it. "*The Internet works just fine in English*," they would argue. "*Why make something simple more complicated?*"

It often took just one question to open their eyes as to why the Internet they thought of as simple wasn't that way for everyone: "*What if the Internet had been invented in China and you had to learn to type Chinese characters in your browser address bar to access a website? Would you want more multilingualism then?*"

But in Europe, especially in European Commission land, the complexities of multilingualism were commonplace. Today's European Commission uses the Union's 24 official languages. Take a deep breath! Bulgarian, French, Maltese, Croatian, German, Polish, Czech, Greek, Portuguese, Danish, Hungarian, Romanian, Dutch, Irish, Slovak, English, Italian, Slovene, Estonian, Latvian, Spanish, Finnish, Lithuanian and Swedish!

Making sure any possible communications gap is bridged by resolving language differences is a core policy of Europe's institutions.

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[1] As discussed in books like Sangin Park's Strategies and Policies in Digital Convergence, published in 2007.

"The European Commission maintains the policy that all EU *citizens have the right to access all* EU *documents in the official language(s) of the Commission, and should be able to write to the Commission and receive a response in their own language," a Commission text explains*[IV]*. Enacting this policy takes significant effort and resources: "With a permanent staff of 1,750 linguists and 600 support staff, the Commission has one of the largest translation services in the world, bolstered by a further 600 full-time and 3,000 freelance interpreters."*

So, at the start of the 21st century, multilingualism – one of the issues faced by the international Internet governance community – was already being addressed by the Commission's plans for Europe's TLD. Another issue was user choice. A third was bringing more structure to a domain industry that had so often been labelled a 'Wild West' as users felt violated by registry and registrar business practices, or the lack thereof.

When the Commission published its *"call for expressions of interest for the selection of the .eu* TLD *registry"* on September 3, 2002[V], it laid out some of the basic rules of engagement that later inspired ICANN's own new gTLD programme rules.

FOUNDATIONS

Through its involvement in ICANN's Governmental Advisory Committee (GAC), the Commission was aware of the domain industry's problems. Grouping together governmental representatives, the GAC includes 146 member countries[VI] and advises the ICANN Board and community on those issues where governments feel they have the most legitimacy: aspects of public policy and the public interest.

By 2002, Europe had already begun working on a plan to bring Internet users a new kind of suffix. *"The Commission, acting on behalf of the Community, has requested the delegation of the* EU *code for the purpose of creating an Internet* ccTLD*,"* Regulation 733/2002 explains. *"On 25 September 2000, the Internet Corporation for Assigned Names and Numbers (*ICANN*) issued a resolution providing that "alpha-2 codes are delegable as* ccTLDs *only in cases where the* ISO *3166 Maintenance Agency, on its exceptional reservation list, has issued a reservation of the code that covers any application of* ISO *3166-1 that needs a coded representation in the name of the country, territory or area involved". Such conditions are met by the* EU *code, which is therefore 'delegable' to the Community."*

Although getting ICANN to turn .eu on didn't end up being quite as simple as expected, Europe was still laying foundations which would later be used to inspire major Internet naming developments like ICANN's new gTLD programme. As an example, the Commission insisted that whoever ended up managing .eu would have to take governments into account.

Years later, the Internet governance community as a whole would come to recognise the importance of affording governments greater input into decisions that were having more and more impact on the public interest they are tasked with defending. In 2009, the US government agreed to step away from the privileged position of being the only nation in the world to hold ICANN under contract[VII]. It did so with the understanding that the GAC would carry a stronger voice in the Internet governance debate.

A commitment to pay more heed to governmental comments was built into the new gTLD programme's 338-page rulebook[VIII], with the GAC gaining almost regal power to block any application for a TLD governmental representatives took exception to.

SETTING USEFUL PRECEDENTS

Still in precursor mode, the Commission insisted that the .eu registry should not be able to act as a registrar.

Clearly separating the two key functions in the domain name distribution chain had been a hard-fought battle in the 1990s. With Network Solutions controlling both wholesale and retail distribution of .com (the only TLD that really mattered back then), competition was almost non-existent.

So .com registration prices were kept artificially high, hampering Internet growth by preventing users from easily turning their ideas into websites. ICANN broke up this monopoly by opening up the registrar market and dictating that the registry should not also act as the registrar.

Ironically, the domain industry turned that situation on its head during the implementation of the new gTLD programme, breaking down the registry/registrar separation so that it was once again possible to 'manufacture' domain names and sell them to end-users.

Not so for Europe's domain. To this day, .eu maintains a strict Chinese wall between the two functions – leaving the registry to *"organise, administer and manage the .eu TLD in the general interest and on the basis of principles of quality,*

efficiency, reliability and accessibility," as Article 2(a) of Regulation 733/2002 stated even before there was a .eu, or a registry to operate it.

So registrars with a license (the term 'accreditation' is used) to sell .eu domains can do so without fear of their own supplier – the registry – undercutting them and going straight to their customers.

Right from its 2002 regulation, the Commission stated[1] that the .eu registry would have to *"ensure effective and fair conditions of competition among .eu Registrars."*

Today, to the uninitiated, .eu might look like just another TLD in an ocean of Internet suffixes. But at the start of the new millennium, as Europe laid down the April 22, 2002 Regulation 733/2002 and later (April 28, 2004) Regulation 874/2004 to implement the earlier guidelines on how .eu should be operated, it was laying some of the groundwork for the new gTLD-driven expansion of the Internet's gTLD namespace to come.

In some ways, the European domain can be seen as a 'test bed' for this subsequent drive to provide Internet users with more choice at the Top Level: better directions through more numerous and more specific signposts on the information superhighway.

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CHAPTER 4

Underdog

We all love a good 'tortoise and hare' story. One to remind us that, sometimes, the meek do inherit the prize.

The way Europe's registry came to be is such a tale.

The people who operate .eu almost fell into it by accident. "*For me, it all starts in August 1999,*" says EURid General Manager Marc Van Wesemael. "*I had just been hired to move .be away from the university it had been started in and set up an independent organisation around the Belgium domain. There was already a structure in place, but it was more of a governance structure than anything else. There was a Board, but no operational elements to the running of .be. Nothing had happened for a while, until the people in charge at the time decided they needed to recruit an external manager just to kick-start the process of turning .be into a viable long-term proposition.*"

GOBBLEDYGOOK

At the turn of the century, the obscure world of domain names was as esoteric to most of us as cold fusion.

Van Wesemael was no exception, and that's precisely what drew him to the new venture. "*The challenge looked interesting. It was initially only a 6-month contract, so there was little risk in taking it on. And it was an opportunity to learn about a new field. So I went to Professor Pierre Verbaeten – EURid's current chairman and, at that time, the university professor responsible for .be – and I didn't understand a word of what he told me! But I did understand the brief, which was to start a company to manage .be.*"

Van Wesemael's background was with commercial companies. He feels tackling a non-profit like Belgium's registry with a commercial mind-set was a major ingredient in making .be a success. He also applied a skill that would

later prove crucial in building a successful bid for .eu: his talent for finding the right people and placing them in an environment where they are able to give the best of themselves.

When he took on the .be challenge, Van Wesemael knew nothing of the intricacies of the Domain Name System. So he had no choice but to seek out people who had a solid understanding of what DNS BE would be tasked with doing.

As he set out to build the right team of people to run the Belgium domain, Van Wesemael also focused on ramping up his own knowledge.

One way of doing so was to attend domain conferences that, to an outsider, probably had more in common with a group therapy session for hardcore software developers than with a primer for a blossoming new industry. Even today, domain conferences tend to be full of jargon and as accessible to newbies as a lion at feeding time. Van Wesemael didn't find it easy to penetrate the domain world's very specific language and behaviour codes, but he did chance upon an idea that would later become .eu.

"As part of my learning experience for .be, I started going to CENTR *meetings.* CENTR *gathers together the European national Internet domain managers – the operators of European* CCTLDS*. Pierre said that I should go, and I think the first one I went to was in November 1999 in Poland. Once I got there, I was again faced with a situation I was starting to get pretty used to at the time: lots of talk about things that I didn't understand. But it was also the first time I heard about .eu."*

THE RIGHT PRIORITIES

In Europe, the late 1990s/early 2000s can still be considered prehistoric times as far as domain names are concerned.

Much like in the world of finance, in the domain name world the sun pretty much rises and sets in the US, with everyone else following America's lead. A nascent European domain industry was far behind what US registrars were doing, with Germany and, to a lesser extent, the UK being the only two European markets with enough potential to grow powerful companies.

National registries were also balbutient. Greatly overshadowed by .com and the Internet's other two US-managed heavy-weights – .net and .org – operators of Europe's national domains had to deal with a heritage that was not always conducive to high domain sales. Often born out of academia,

these registries were ill equipped to successfully compete against the all-business mind-set of America's domain champions.

Operated by a private for-profit, .com, .net and .org were no-rules, high-volume TLDs (.org would later be reassigned to another operator, while keeping its no-registration-rules policy).

Almost the exact opposite of many European domains, where histories of complex local legislation and a desire to differentiate from the .com model were forcing bureaucracy and cost onto the end-user. Registry systems were antiquated idiosyncrasies that had to be run almost entirely by hand, putting even more hurdles in the path of would-be domain registrants.

But growing awareness of the overall economic impact of a powerful Internet presence was forcing major rethinks in Europe. The situation as it was then was no longer viable. Most national registries started working on improving – if not reinventing – themselves.

So, the .be scenario was not an isolated incident. If you were a TLD operator in Europe at the turn of the century, you were facing the need for major overhauls in your operations, systems and execution. Not an ideal time to be taking on a new project far removed from your core business of evolving your country's Internet suffix.

Exactly the conundrum Marc Van Wesemael was facing.

"I didn't pay much attention to the .eu talk at first," he admits. "I was just starting at .be and concentrating on that. But then, after the initial 6-month contract was up, I was asked to stay on. As I went to other CENTR meetings, the topic of a possible .eu kept on surfacing. Yet there was a considerable amount of work to be done with .be. Staff and operations had been transferred from the university to the new organisation. Offices had been found. We'd relocated the infrastructure, but the whole operation was still manual and we were already looking towards automating it and liberalising the domain, so my focus was very much on that."

It was a question of priorities. Especially as the work being done at .be was starting to be noticed and pay dividends. "*We had the .be liberalisation and moved it on from an e-mail-based registration system to an EPP*[1] *system. At the time, that was quite innovative. EPP existed (we didn't invent it, of course), but we were one of*

[1] EPP stands for Extensible Provisioning Protocol. Wikipedia defines EPP as a flexible protocol designed for allocating objects within registries over the Internet: http://en.wikipedia.org/wiki/Extensible_Provisioning_Protocol. It is a standardised format designed to allow domain name registries and registrars to interface.

the first ccTLDs to implement it."

EPP has since become the de-facto standard for the domain industry. As new gTLDs have come to market, the need for registries and registrars to have a common language with which to interact has only grown.

Registrars are less and less inclined to go to the trouble of integrating a new TLD and offering it to their customers if that integration depends on learning a new system. So in those early years of the 21st century, working on EPP was both prescient and logical. It also gave .be an edge…

"I had presented our work with EPP implementation at one of the CENTR meetings, so people understood that we had made major steps from the old system to a new registry management system," Van Wesemael recalls. *"Then I was contacted by the French registry. They were interested in submitting a proposal for .eu. They were working on a project called EUREG where the ccTLD operators of France, Italy, Greece and Spain were all joining forces to submit a bid. They asked if .be wanted to join. They said they wanted to use our technical system for their bid because it was the most advanced of the group."*

DNS BE had started from a blank page to create its system – so it was ahead of the rest. Van Wesemael proudly informed his Board of the French request.

The Board replied that there were still a lot of things to do, and they should be concentrating on that rather than chasing new projects. That was certainly true: this was just after the liberalisation, and the organisation was still very immature and suffering from all of the consequences of that.

CONFIDENCE CRISIS

The liberalisation had left a scar on the DNS BE psyche. The various problems encountered during the Belgium domain's relaunch had resonated at a national level, with the media even talking domain names, which was quite rare at that time.

Le Soir newspaper had run a story on December 12, 2000, which explained that the launch had been delayed by 24 hours due to 'technical problems'.

Another Le Soir story highlighted a bevy of problems. *"In the space of a week, more than 70,000 domains have been registered with* DNS BE," wrote the Belgian paper. *"The scale of demand has left many unhappy and complaining that they were unable to secure such popular names as cyclisme.be (cycling.be) and assurance.be*

(insurance.be). Now, despite a bailiff having observed the full liberalisation proceedings at DNS BE*, rumours of malfeasance are spreading. It doesn't help that many contested names are currently shown as being owned by* DNS BE*'s boss, Marc Van Wesemael. The reason is that these names are blocked by the registry pending legal action…"*

But these issues had pushed DNS BE to improve and build one of the most advanced suffixes around.

A few months after the DNS BE Board had turned them down, the French came to visit the DNS BE HQ in the Belgian town of Leuven, about half an hour's drive from Brussels. They came away even more impressed – and this time, they put in a formal expression of interest (in writing) to use the .be system for their .eu bid. Now, Van Wesemael was in a position to go back to his Board with even more concrete evidence of the high level of interest the DNS BE systems were garnering. Still, he expected the answer to remain 'no'. But much to his surprise, the Board told him that, if the .be systems were that good, instead of joining EUREG, they should bid for .eu themselves!

But, in Belgium, confidence goes only so far.

The country itself appears to be at a crossroads. It brings together two main communities and cultures: Flanders and Wallonia. But in a country famous for its 'frites' (chips or French fries), best eaten out of a paper cone with corresponding sauce on the side, it seem that mayonnaise has never really taken as far as national unity is concerned.

Belgium is more a potpourri of different regions than anything else. They speak Dutch in Flanders, a mix of everything in the Capital city of Brussels, and French in Wallonia (although part of that region also speaks German).

And language differences are just the tip of the iceberg in a country that tends to default to English as the most 'neutral' option. Social, cultural and even economic tensions stem from this cobbling together of different communities. This actually has very little impact on ordinary citizens, but can lead national politics to the brink of dysfunction.

Belgium is a country living in the cultural shadows of its neighbours – France, Germany and Holland. No wonder there is a national inferiority complex! But, as the country has emerged from a history of foreign occupation, with frequent ruler changes, the population has acquired the art of being flexible and pragmatic. Being stuck between oft-warring nations

such as France, Germany and the Netherlands, Belgium was long known as the battlefield of Europe.

Today, as the seat of many of Europe's governance structures, Belgium remains at the centre of the continent. Reflecting its own complexities, Europe's institutions can be as difficult to understand as they are to navigate. Suffice it to say that, out of the 7 institutions of the European Union, 4 are either fully or partly based in Brussels, Belgium's capital city.

Bringing together the heads of the Union's 28 Member States to set the EU's general policies, the European Council[I] meets in Brussels.

The European Council's counterpart, the Council of the European Union, is tasked with negotiating and adopting the Union's laws. It also meets in Brussels.

The European Parliament[II] is the second half of the Union's legislative apparatus and determines the Union's laws and budgets in conjunction with the Council of the European Union. It also oversees the work of the European Commission. Its 751 members are elected by Europe's 500 million citizens directly. It is partly based in Brussels.

The European Commission proposes Union law, represents the Union to the outside world (this includes the negotiation of trade agreements between Europe and other countries) and manages the day-to-day business of the Union. It too is based in Brussels.

So, even though the other 3 Union institutions – its Court of Justice, Central Bank and Court of Auditors – are based elsewhere, no other Member State has such a predominance of European bodies on its soil. Yet the Belgian people would still rather fade into the background rather than risk recognising their own achievements and importance.

"*The Board started discussing a possible .eu bid in much greater detail,*" says Van Wesemael. "*Their instructions were for me to put together an 'underdog's bid'. This is typically Belgian – we always see ourselves as the underdog. We're never out in front; we're always following others and admiring how good they are. Never seeing how good we are.*"

This self-effacing approach was in evidence during early DNS BE Board discussions regarding possible involvement in a .eu initiative – and it was expected that a call for tenders to operate the .eu registry was likely to be published in the Official Journal of the European Union soon.

Several coalitions that had been formed to bid for Europe's domain

were identified, with EUDR being touted as the first (it seems this coalition had previously been called EUROPOC). EUREG is also mentioned, as is a third project called CO-EUR. *"Although very little is known about this project,"* the DNS BE Board is told.

It is expected that, having European registries as partners, both EUDR and EUREG could be looked upon favourably by the Commission. And so the question of whether DNS BE should become more heavily involved with one of these projects is raised.

Another suggestion is for DNS BE to offer its technical expertise – through a spin-off that would be legally independent of the Belgium registry – to whoever the future .eu registry turns out to be. The seeds of a EURid-type entity are sown there and then, but at first, the approach remains timid and more focused towards serving .be than actually expanding operations to cover a whole new Europe-wide domain. This is the way it should be. After all, the DNS BE Board has to remain focused, first and foremost, on serving DNS BE's interests.

So questions are asked about the possible spin-off's legal status (given that DNS BE is a non-profit), whether it should seek only to serve others or also be DNS BE's technical platform, what DNS BE gets out of creating a separate entity, and so on…

THE NORTH, THE SOUTH, AND MIDDLE EUROPE

As the Board continued thrashing out the idea of a .eu bid, it became evident that the only possible approach was either all in or all out.

The Board ended up directing DNS BE staff to start looking for potential partners to form a new organisation that would then respond to the Commission's call for tenders with the aim of becoming the .eu registry itself. Cultural and geographical diversity would be assets – but where to look? As some of the bigger European suffix operators had already started banding together, the DNS BE Board joked that "an underdog's bid for .eu" might be the way to go.

A budget of 3 million Belgian Francs (just under €75,000) was allocated to a project that was to be run in 3 phases. The first phase was the search for partners capable of adding diversity to make the resulting group more representative of Europe's own wide-ranging differences. The second phase

was the evaluation of the .eu tender process and the construction of a bid. Should this phase be successful, the third phase would be about following-up once the bid was submitted.

"So the idea here was for us to look for other mid-sized TLD operators to partner with, and bid for .eu," Van Wesemael continues. *"The thinking was also that if a group of smaller European countries got together, the Commission would be sensitive to that and there might even be a reaction along the lines of: let's give these smaller countries something to manage as well, instead of everything always going to the big countries. The Board talked about approaching the ccTLD operators of Portugal, Greece, Denmark… I contacted them all… and they all said no!"*

With hindsight, doing .eu might seem like a no-brainer – but at the time, most ccTLD operators were just like .be. They wanted to get their own house in order and had real questions about what .eu would do for them, besides generate more complexity and take their focus away from actually getting their own national suffix right.

Negative responses were to be expected.

Undeterred, the DNS BE General Manager continued to work through his Rolodex of CENTR acquaintances. The next number on the list was the Austria registry's. *"They declined as well, but also started the EURid ball rolling! My contact at the Austrian registry told me that, although they weren't interested, Sweden might be."*

It was sales pitch time! Something Van Wesemael, with his commercial background, felt well prepared for. In any case, confidence levels had risen in Brussels, boosted by other registries' sincere admiration for DNS BE's technical proficiency. There was also recognition of the Belgian registry's best-practice approach: concentrate on the key registry functions of database and registration rules management, and leave the customer-facing work to the registrars.

In a September 2002 e-mail to his Swedish counterpart, Anders Janson, Van Wesemael explained Belgium's realistic approach to bidding for .eu as well as the strengths which he perceived would give them an edge. *"Two years ago, we went through a complete liberalisation and created a very efficient registry-registrar model. Our registration system is scalable and allows virtually every registration to be automatically handled by the registrar. We feel this model can easily be applied to a .eu registry and would like to respond to the European Commission's Call for Expressions of Interest. And we would like to make our proposal a joint effort by like-minded European registries."*

Van Wesemael also laid out some of the key parameters a future .eu was thought to need in order to be successful. Even at this early stage, it was understood that, despite a requirement to uphold European laws and ethics, the TLD needed to be easy for its users and sellers.

So, Van Wesemael touted a model that would not restrict registrations up front but instead work on the 'first come, first served' principle that has since become the default for any successful namespace. *"The policy rules for registering a domain name should be kept to a minimum or to rules that can be automated,"* stated a .eu white paper drafted by DNS BE and sent to prospective partners. *"Rules would not be checked systematically but handled only by a commission that would start to work upon receipt of a complaint. The .eu terms and conditions should support this model by having the registrant state that the information he provides is correct and does not violate the policy. Also, the T&Cs should empower the registry to revoke a name without further notice if this data is proven incorrect or non-compliant."*

ORDER, NOT CHAOS

But easy access can never be the only building block of an effective TLD. An operator willing to set rules and police its namespace to ensure those rules are followed is a must. Otherwise, one risks losing consumer trust, which is essential to any commercial enterprise.

If trademarks or other rights are abused, Internet users may be tricked into going to an illicit website posing as the genuine article. Brand owners will object to infringements of their intellectual property rights. And law enforcement agencies will reject the namespace as one more avenue for generating chaos on the Internet rather than bringing order to it.

Bad news for those using the TLD, and those running it. *"Our model helps us verify registration rules (such as exception lists or domain name syntax and length) automatically," Van Wesemael wrote. "Information provided at the time of registration will not require upfront verification, but should subsequent checks show it to be false, the registry can revoke the name. Also, .eu could use an Alternative Dispute Resolution system similar to the one we have already implemented for .be. In short, this project can be based on DNS BE methodologies and systems and evolved from there."*

As it turned out, learning from the best was a powerful motivator for prospective .eu partners. Talking of the Swedes, Van Wesemael says that he was later told one of their reasons for jumping on board was a desire to learn

from the experience – because, at the time, their own registry was still very much operated manually...

ITALY ON THE FLY

So, Sweden was a potential. Early conversations were conducted in September 2002. The Swedes had also been approached by the people at EUREG and had already rejected another bid involving the English registry Nominet[III].

At the same time, earlier contacts with the Austrians were continuing to pay dividends. The Italian registry had previously aligned itself with another group, but in the end had decided not to pursue that. Marc Van Wesemael learned of this through his Austrian grapevine and wasted no time in reaching out. *"I contacted the manager of the Italian registry, and a few days later I was on a plane to Italy... It turns out they were interested in joining forces with us."*

"So, in the end, we'd wound up with two great partners in crime – and although it hadn't been done on purpose, we had a nice split between northern Europe, the middle of the continent and the South."

Adding a couple of Eastern European countries to the mix would have been nice.

Likely candidates weren't part of the European Union yet, but had been announced as soon-to-be Member States. Through his attendance at CENTR meetings, Van Wesemael had good contacts with the registries from Slovenia and the Czech Republic.

"They were keen to get on board. I think for them it was an opportunity to show their own governments that they were proactive and already thinking European. So, we got letters of intent from them that they would join us as soon as their country became part of Europe."

Arnes[IV], the operator of the .si country code Top Level Domain, joined EURid in September 2003. CZ Nic[V], the Czech registry, followed suit in January 2004.

THE FRENCH AFFAIR

After the Swedes[1] had come on board, joining forces with the Italian registry was a major coup for the DNS BE led effort to form a coalition viable enough to have a real shot at being selected to run .eu.

But it could just as easily have been so different.

The Italians had been eyeing a .eu bid for some time, and had initially been working with the French registry. Amongst the team in charge of the project at the Istituto di Informatica e Telematica[2] (IIT-CNR for short), which housed the Italian registry operations, was Giovanni Seppia. Mixing Italian flair with the kind of confidence that comes from years of working the governance circles, Seppia has a debonair demeanour that makes him instantly endearing. Today, he heads EURid's External Relations department.

Seppia was recruited by IIT-CNR after being noticed at a conference: "*It was in 1999. I was working for the region of Tuscany, and at a conference in Cyprus I presented a project a database of Mediterranean institutes. There were 2 people from the .it registry in the audience. After the presentation, they asked me if I was interested in working for their institute. That's the way it is in Italy – the registry is part of a research institute.*"

Seppia's new responsibilities led him to meet his European peers and, just as Van Wesemael had heard of .eu in the corridors of international meetings like the ones hosted by CENTR, so did the .it man.

"A group led by the French registry invited us to bid with them in response to the Commission's call for expressions of interest in being the .eu registry. In 2002, we started working with the French registry to prepare our response to the bid, which at that time had actually not yet been published by the Commission."

Seppia and his team had started a course of frequent meetings with his French counterparts to hone the group's bid. One of those meetings he'll never forget.

"We were in Pisa. We were breaking for lunch and the French registry representative left some documents on a desk in the meeting room. I stayed behind to prepare for an upcoming presentation. I saw the documents and had a look."

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[1] Formally known as NIC-SE, the Swedish registry changed its name to the Internet Foundation In Sweden (IIS) in 2009: https://www.iis.se/

[2] The Institute of Informatics and Telematics of CNR is a research centre specialising in communication and computer technologies. It operates the .it ccTLD: http://www.iit.cnr.it/en

As Seppia read through the French papers, any semblance of this being a team effort in which every partner was to be treated equally shattered. *"What I found out in the documents was that, although they were telling us that we would split the management of .eu if we won the bid, they had actually already subcontracted everything to French companies!"*

"So, when they came back from lunch, I asked the director of the French group to explain what I had found. He was very open in his response. He told me that he believed the .it registry would not be capable of delivering what the French registry was asking for. So that if we won the bid, we would be part of the winning consortium but we would not be given the tasks that were agreed in our mutual cooperation agreement."

"That was a major shock to us. We really believed in that partnership at the time. We had been very public about our participation with the French registry, even presenting on it at the CENTR *general assembly in Crete*[1]*. I asked the French to leave straight away. I said there was no point in continuing as we were all wasting our time. The circle of trust had been broken."*

This made Van Wesemael's subsequent knock on the .it door most welcome.

"At .it, there was a sense that .eu was an opportunity to share expertise in the interest of the community," Seppia explains. *"The way the new registry was to be managed, for example. It was done in a genuine spirit of sharing our best practices with our peers and putting them at the service of the community."*

With DNS BE and the Swedish registry, the Italians had found true partners with the same community approach.

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CHAPTER 5

Building a better model

As the founding partners came together, EURid itself was still some distance away.

Neither the name, nor the organisation itself, existed. That would come later… if the bid was won!

To get there, a viable model for Europe's domain first had to be constructed and proposed to the Commission.

MEETING IN AIRPORT HOTELS

The partners started to hold informal meetings – it was all very cloak-and-dagger. "*Our first joint meetings were all held at the Sheraton at the Brussels airport, because that was convenient for everyone,*" says Marc Van Wesemael. "*You could literally land, walk through the airport into the hotel, have your meeting and then walk back out to your plane. The meetings themselves felt really special. We all knew we were working on something very new. It was like nothing I'd ever done previously…*"

It had always been everyone's understanding that, although the group was composed of several partners, the heart and soul really was DNS BE. Belgium was in the driver's seat, even though their comrades were an absolutely essential ingredient if the endeavour was to stand any chance of being successful.

To convince their partners, Van Wesemael and team had sent clear signals that they were willing to take on the heavy lifting. To have even the slightest chance of winning, they had to present a true multi-national set-up. "*You never get a contract at the Commission if you don't represent a sizeable part of Europe,*" says Van Wesemael.

Success also meant not reinventing the wheel as far as the actual solutions this group would propose to the European Commission.

The .be liberalisation had turned the domain from an obstructionist nightmare to a user-friendly paradise. As long as a domain name did not infringe upon someone else's rights, it could be registered. By anyone, anywhere. In the previous system, the registry had been judge, jury and executioner. The new system was a lot fairer – removing the entity in charge of managing the actual domain from collateral duties like dispute resolution or even sales.

That was good for trust, and efficacy. Users could feel confident that the registry was operating in their best interest and fully focused on making sure .be was functioning at optimal efficiency. Let others handle things like disputes.

TAMING THE WILD WEST

Under .be, an Alternative Dispute Resolution (ADR) procedure had been set up to ensure that experts would be the ones to determine whether a domain name should go to one party or another.

The system was actually based on the World Intellectual Property Organization's[1] Uniform Dispute Resolution Policy. WIPO had designed the UDRP with ICANN and implemented it in December 1999 in an effort to bring some measure of order to a domain name system that was fast becoming as wild as the Old West, with brands and trademarks falling victim to cybersquatters on an increasingly frequent basis.

The UDRP had done wonders to instil trust amongst both companies and individuals who expected to find the right content behind a website, rather than some usurper's fake. That trust is a cornerstone of the Internet's acceptance as a tool for everyday life – where the protections people expect in the real world can also be enjoyed in cyberspace.

DNS BE's ADR spinoff had brought .be the same level of security and, in fact, had gone one step further when, in November 2001, it had evolved to cover not only trademark related disputes but any disagreement linked to a domain name registration.

Trust in a specific domain namespace also stems from having a dependable network of providers to turn to when in need of a name. Actively

separating the TLD management functions handled by the registry from the sales and customer relations ensures that users always know who does what.

Forcing separation by ensuring registrations could only be done through registrars and that these companies would be accredited by the registry, brought a greater level of accountability from the people responsible for selling domain names. Not only were registrars contractually obliged to follow the registry's rules, they were also actively encouraged to inform their customers of those rules and their consequences.

One benefit of this, for example, is a reduction in 'accidental' cybersquatting registrations because the registrar is there to help customers understand that no, it's not OK to register that famous brand as a domain name.

As a bonus, this streamlined system was also much easier to operate and to oversee. A DNS BE white paper on .eu sent to prospective partners explains the considerable advantages of automating the registration system as much as possible. The intent is to make the process as fast and simple for the registrant as possible. That is only possible through full automation of the registration system – so that, when an order comes in to the registrar, it can then be escalated through the registration chain almost instantaneously.

The registrant should be able to receive confirmation and start to use his new domain within minutes. This is the absolute prerequisite in making a TLD truly appealing, and as work began in earnest on defining what the ideal .eu might look like, this was one of the main criteria.

KEEP IT SIMPLE

It was already obvious at the time (around 2003) that, just like any other industry, domain names had to put the customer first.

Behaving like an old-world bureaucracy was no longer acceptable, as both the legacy gTLDs and other country code suffixes maxed their drive towards much improved customer service. Users would no longer put up with registries that made the registration process feel as painful as getting a visa to North Korea.

DNS BE had understood the need to make domains simple – and this was the model EURid would 'sell' to the European Commission.

The model was the DNS BE system. One built for registrars, therefore

ultimately for registrants. That meant no registration rules requiring upfront control of any kind, as this would prevent full automation.

Such a system can only work with explicit exclusion lists – that is, lists of terms that cannot be registered as domain names, hardwired into the system so that they can be rejected automatically – or with rules that can be checked by the system directly.

An obvious example of such a rule is the minimum or maximum length of a domain name. Any other regulatory constraint must be imposed on the registrant and therefore included in the domain name registration terms and conditions. These then become part of the contract between the registry and the registrar so that, when a registrant requests a domain name, he has to agree to these T&C.

After that, any contravention to those terms and the registry is empowered to take whatever curative measures it has programmed into the T&C: from a simple warning or request for clarification, to suspension, and even, in extreme cases, deletion of a domain name.

Making the registration process simple means it also becomes more predictable. This brings the user two more advantages: lowered costs and increased security.

Before the 2000 liberalisation, the .be system required so much manual work that DNS BE's registration team would have been doomed to grow exponentially to meet any corresponding increase in demand for .be names.

A sales system in which processing fewer orders is the preferred option makes about as much sense as cutting off your head because you've got a headache.

After the liberalisation, the system was much more machine- than human-based, resulting in much lower running costs for the registry.

The money saved could be used to beef up the system's security and anti-hacking protections, do more to market the TLD and build public awareness around it, and to lower the registry (wholesale) price in the hope that registrars would carry that saving over to their customers.

A cheaper, more secure, simpler and therefore more ubiquitous TLD has no downsides. It was a no-brainer that .eu should go that route.

A NAME AND A BID

Even though the model to be used was clear, there were still a lot of other details to work out. Most obviously: the name of the organisation that would be created if the bid was successful.

Van Wesemael asked his team to come up with suggestions. Staff member Veronique Van Der Borght had the EURid idea. She felt, and everyone agreed, that the name combined the concepts of being European and providing end-users with a real identity online. Through its name, EURid would be positioning itself as a purveyor of European identities on the Internet.

So EURid now had a name... but little else. There were still a lot of discussions to be conducted among the partners, and several trips to be made from Belgium to Italy and Sweden, before a tentative agreement was reached. The partners took a long time to sign off on the .eu project.

But the fact that EURid had not been formalised as an entity by this time actually made perfect sense. The Commission's *'Call for Expressions of Interest For the Selection of the .eu TLD Registry'* published in the Official Journal of the European Communities on September 3, 2002[II] did not require respondents to actually be established as an entity until they had won the contest for the right to manage Europe's online identity.

"The Registry must be a non-profit organisation, formed in accordance with the law of a Member State and having its registered office, central administration and principal place of business within the Community," ran the Commission text. *"If the non-profit organisation is not yet established at the time of the application, applicants should submit as much tentative information as available (...) and in addition a clear and precise indication about the timetable and procedure for such establishment."*

Three independent organisations were coming together to answer the Commission's call. Although they did not yet form a single coherent registry, they could still divide up the bid questions, with each partner taking on those topics in which it had the highest level of expertise. For example, .it offered to do some market research and to look at the potential for community interest.

To help draft the highest quality text possible, the group turned to Fay Howard for help. She had been CENTR's General Manager and possessed an intimate knowledge of the domain industry. In addition, she was a native English speaker. As the bid response was to be written in English, this would

be a strong asset. Howard's experience was also instrumental in formulating clear positions on the governance and community consultation aspects of the group's response.

As EURid's proposal took shape, the three partners met often to take stock and report on progress. Staying true to the Commission's requirements as explicitly laid out in the bid document was of paramount importance and the first priority.

The call for expressions of interest was the Commission's view of what .eu should look and work like, whom it should address, and how it should be run. To have any hope of being successful, EURid's response had to be a perfect fit with the Commission's requirements.

THE PHILOSOPHY BEHIND .EU

The Commission's call provides valuable insight into how .eu was created, built and turned into one of the world's most successful TLDs by number of domain names[1].

First off, it defines what the registry actually does. It is *"the entity entrusted with the organisation, administration and management of the .eu TLD including maintenance of the corresponding databases and the associated public query services, registration of domain names, operation of the registry of domain names, operation of the Registry TLD name servers and dissemination of TLD zone files."*

Then, what the registry should be: "*a non-profit organisation, formed in accordance with the law of a Member State and having its registered office, central administration and principal place of business within the Community.*" In other words, whoever runs .eu has to be European by culture and based in the Union, so as to promote European expertise and innovation whilst creating jobs in Europe.

Beyond that, the registry should be respectful of the opinions of governments and enter into a contract with ICANN to manage .eu.

As previously discussed, this Commission stipulation was puzzling to many. Other country codes are not required to sign any sort of contractual agreement with ICANN to operate their national suffix. Quite the opposite

[1] In its March 2015 domain name report, .com operator Verisign ranked .eu as the 7th largest ccTLD in the world: http://www.verisigninc.com/assets/domain-name-report-march2015.pdf

in fact. Countries and their governments, as representatives of the citizens and elected by them, have always strongly advocated the fact that they are the only stewards of the public interest in their countries.

THE ICANN SYSTEM

This has been a matter of debate for years in Internet Governance circles, as two very different communities were created according to the nature of their contractual relationships with ICANN.

All generic TLD registry operators are obliged to have a contract with ICANN. They operate according to the rules set by ICANN and its multi-stakeholder community. They pay ICANN fees, which are generally either fixed per term or based on the number of registered domain names they manage.

These 'g-space' operators are grouped in an ICANN entity called the Generic Names Supporting Organisation or GNSO[III]. This is the Internet's key policy-making body for the generic namespace as far as TLD operators and vendors are concerned. It is designed with the idea that these entities have a direct contract with ICANN and can therefore be held to that contract if need be.

Country code operators, on the other hand, have always refused to bow down to any sort of direct contractual agreement with ICANN.

They are under no obligation to pay ICANN any sort of fee, even though they sit at the ICANN table and have their voice in the ICANN debate through their own Supporting Organisation, the ccNSO[1]. They also benefit from the Internet root management services ICANN oversees. The same services that help ensure that the top of the Internet's technical pyramid stays functional so that all TLDs, be they country code or generic, work the way they should.

Test it. Whether you type www.google.com, www.google.eu or www.google.de, your query will be answered by taking you to a Google website. Without a unified, functional, safe and secure Internet root, that might not happen...

Detractors often ask: so why should country codes not have to support this model financially? One answer is that most of them actually do. Voluntarily.

[1] country code Names Supporting Organisation: http://ccnso.icann.org/

ICANN publishes the list of contributions made by ccTLDs[IV] as these are included in its budget. For the 2013/14 fiscal year, for example, ICANN received over USD 1.9 million in ccTLD contributions.

Each country has its own reasons for contributing, but the Internet's economic and political importance are among the main motivators. *"The Internet economy is already responsible for 8% of our GDP,"* UK Minister for Culture, Communications and Creative Industries Ed Vaizey reminded his audience as he welcomed attendants to ICANN's 50th International Meeting in London in June 2014[V]. *"The way the Internet has been governed has to be seen as an unqualified success story. It's created the opportunity for massive economic growth and for greater intellectual freedom. So if we're going to look at the governance of the Internet, it's important that we preserve those principles. That includes of course ICANN, in the performance of its role in coordinating and developing the domain name system so that it serves the global community."*

Keeping the above-mentioned root services running optimally means countries are willing to contribute financially to ICANN.

Some quite substantially.

Germany volunteered USD 130,000 to ICANN's 2013/14 budget. Holland went as far as USD 225,000; and Australia (who's national suffix operator has as its CEO a former ccNSO Chair and sitting ICANN Board member in the person of Chris Disspain[VI]) paid USD 280,000 after having contributed 310,000 the previous fiscal year.

So, the issue is not financial – it's about politics and national sovereignty.

In today's world, the Internet is considered to be a national resource as much as land might be. National suffix operators generally work under the authority of their country's government. And that government is not prepared to sign a contract with a California-based organisation.

DECLARATIVE ELEGANCE

So without being privy to what Christopher Wilkinson knew about why the Commission insisted on requiring the .eu registry to sign a contract with ICANN, applicants simply had to make do and follow the rules. However, as was also clear from the outset, once it had selected a winner, the Commission expected to work closely with them to benefit from their domain industry expertise and hence create .eu's definitive ruleset.

The Commission's call did contain underlying principles, such as the obligation to create a clear separation between the functions of .eu operator and .eu seller. The .eu registry would be forbidden from acting as a registrar, but would be responsible for accrediting a network of registrars and making sure that they were all treated equally.

It would also fall to the registry to ensure that future .eu domain name owners met the Commission's requirements. If the domain registrant was a company, it must have a registered office, central administration or principle place of business within the European Community. If it was an individual, then that person had to be an EU resident.

EURid's plan was to bake these registration rules into the contract it would impose on registrants through its own agreement with registrars. That way, the registration chain could remain as highly automated as needed to ensure maximum efficiency and almost instantaneous service to registrants, whilst at the same time enforcing the Commission's rules.

Declarative statements from registrants are made at the time of the registration request by simply agreeing to the registrar's Terms & Conditions, which lay out the requirements for .eu domain ownership. Then, if later checks are carried out, or a complaint is received, any .eu registration can be checked and, if necessary, cancelled. Simple, elegant, effective!

The Commission had been explicit in its ambitions for a TLD that would truly boost a European's ability to get online and, once there, control their identity. It wanted a .eu that would be *"promoted effectively within the EU"*, generate *"consumer/user confidence"*, be *"conducive to innovation"* and able to *"adapt to the future requirements of potential registrants."*

THE FAIR PRICE

The wider .eu's reach, the more potential benefit for its users.

That also meant being truly European, language-wise. *"Particular attention needs to be given to the linguistic diversity of the European Union, and the need to promote the .eu TLD in the official languages of the EU,"* the Commission warned as it invited expressions of interest.

And of course, to get the suffix to be picked up by as large an audience as possible, it had to represent a not insignificant volume of registrations. That's why, in the domain name industry in general, the registries (and their

governing authorities) are so often fixated on registration volumes.

The more domains, the more money.

But beyond that, the more domains, the more likely the average Internet user has actually heard of it, and therefore uses it. Herein starts the virtuous circle of raising the number of registrants in a particular TLD, thereby making it all the more attractive to new registrants, with existing registrants more likely to renew their names. It's the oil slick effect. The more the TLD spreads, the more it grows.

The people planning .eu at the Commission had an acute understanding of the public interest parameters. These included ensuring access and providing a legal framework capable of protecting existing real-world rights in the virtual namespace. These were important in ensuring the quality of .eu. They were baked into the TLD's original mould because the Commission had found two very strong thinkers to pick up where Christopher Wilkinson had left off: Georges Papapavlou and Anne Troye.

Papapavlou was one of the main driving forces behind getting the Commission's call for expressions of interest published. An introvert, Papapavlou comes across as unassuming. He excels at finding the most pragmatic route through any problem. The impetus he provided was later maintained by Troye when the time came to negotiate the final .eu contract.

Their vision for .eu as an instrument of service to the European public first and foremost was crystal clear. As a result, the Commission came down hard on any notion that .eu would be at the service of the industry distributing it rather than the end registrants wanting to use it. "*The Registry shall impose fees directly related to costs incurred,*" it said.

In other words, any fee the registry would end up charging registrars should be proportional to its costs. Obviously, the market itself remained free to set its own retail pricing, but at least wholesale prices would be kept on a leash.

So people should be able to buy .eu names at a reasonable price. They should also be secure in the knowledge that abuse would be dealt with expediently, efficiently and cheaply.

The stipulation that the registry should "*implement the extra-judicial settlement of conflicts policy based on recovery of costs and a procedure to resolve promptly disputes between domain name holders regarding rights relating to names including intellectual property rights as well as disputes in relation to individual decisions by*

the Registry," could as well have been written for the very people who had, through DNS BE's own ADR, already successfully implemented such a system on a national scale.

WE HAVE A WINNER!

Overall, the Commission's requirements seemed a good fit for the experience DNS BE had acquired since the 2000 liberalisation of the Belgium namespace. Good enough for the group-that-was-not-yet-EURid to win the right to operate the forthcoming European domain?

As the October 25, 2002 application deadline came and went, the Commission evaluators got to work. The team was 5-man strong – independent experts, each of whom received an information pack with a number of guidelines to follow. They were told that a total of 7 responses had met the eligibility criteria, and so had been approved for evaluation.

To better cope with the volume of work before them, the evaluators were to adopt a 'deep dive' methodology. They would each review the 7 applications and prepare individual assessment reports. Each report would then be made available to all, and the team would strive to find a consensus on each of the call for expression of interest's selection criteria.

For example, section D – which asked applicants to show how they would consult with the community and the .eu stakeholders and take these views into account – was awarded a maximum possible score of 30, with 20 being the minimum threshold required for an applicant to be 'selectable'.

If no consensus on scoring could be achieved, then the average score listed in each individual report would be considered the result. A list of those applications that did not make the minimum score threshold would then be drawn up, and the evaluators would rank the remaining contestants in order of preference.

Looking at the top of that list would give you the name of the .eu registry.

On May 22, 2003, the European Commission announced that EURid was that entity[VII].

DOUBLE TIME

Winning's all well and good, but EURid now had to become a reality.

"EURid still hadn't been set up at that time," recalls Van Wesemael. *"The*

Commission's official communication on us being awarded the management of .eu included conditions, the most obvious one being that we actually create an organisation. We had a few months to do that. EURid *had to be a non-profit and was to be based in Brussels."*

Van Wesemael suddenly found himself with two jobs. Not until years later would he quit DNS BE to concentrate solely on EURid. For now, he had to ensure that .be continued to thrive whilst guiding .eu towards a successful launch.

No mean feat – although, with typical Belgian modesty, Van Wesemael underplays the inherent difficulties in running these two very different enterprises. *"True, when* EURid *was created and I became General Manager, whilst remaining General Manager of* DNS BE*, I ended up with two roles. Many people have asked me how difficult it was for me to manage doing these two jobs at the same time. To be honest, the question itself is always a surprise to me. Managing two registries is nothing compared to running a Fortune 500 company, for example. Imagine what those people have to deal with! For me, getting both .be and .eu right was more a question of having the right people around me than anything else. If you have good people around you, you can do anything."*

Over the next couple of years, .eu's new boss would need all the help he could get.

In what looks like an entry for the 'understatement of the year' competition, the Commission's May 22, 2003 announcement lists *"some further steps"* to be taken before .eu registrations could begin. They were more like giant leaps.

"The Commission will sign a contract with the Registry," it said. *"Appropriate contacts will be taken with* ICANN*, so that the .eu* TLD *is included in the root zone file. The Registry will have to accredit Registrars, companies that undertake the registration of domain names for the benefit of end-users under competitive market rules. The Commission, in consultation with the Member States and the Registry, will establish public policy rules with regard to speculative and abusive registrations, intellectual property and other rights, issues of language and geographical concepts. It is envisaged that registrations will take place in a phased manner to ensure appropriate registration opportunities for the holders of prior rights."*

The Commission was optimistic that this could all be done relatively quickly: *".eu is expected to be operational towards the end of the year,"* it prophesised as Summer approached in 2003.

.eu would not become generally available until April 2006…

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CHAPTER 6

Rules and money

Time to set the rules and sign the contracts! The .eu registry was to become a ccTLD exception by signing a direct contract with ICANN. It would also have to sign a contract with the Commission. Significant milestones on the road to Europe's domain. And before tackling them, EURid had to be created. So the questions now became: with what people and what money?

START-UP CAPITAL

To get the ball rolling, the three registry partners had all agreed to provide seed funding of €100,000. That gave the new organisation its foundation. The money would cover the actual bidding process itself, plus the start-up costs. Most of it went to pay for the external contractors hired to help put the bid together. Associated costs, such as organising and travelling to the Board meetings, also needed to be covered. Each registry had agreed to carry its own costs on top of this joint spend. The deal was that, should the Swedish/Italian/Belgian bid be successful, EURid would reimburse these costs once it was up and running. And it did so!

But with the bid now won, the initial €300,000 was not going to last very long. The absence of a single entity to handle .eu was also causing headaches – expenses for basic necessities, such as insurance, legal advice and accounting, had to be billed ad-hoc to one of the partners. Time to roll up the sleeves and go searching for the means to deliver on the commitment the EURid founding partners had made to coalesce and give life to a functional registry.

Bank loans were the most obvious, fastest and easiest solutions to implement. The .eu project did not yet have a dedicated finance team, so Marc

Van Wesemael went knocking on the banks' doors himself. Remember: this was in the aftermath of the dot-com bust. Asking a bank to lend you money for anything Internet-related was hazardous enough, but throw in the words 'domain names' and the conversation usually became downright difficult. No more than five banks would even talk to Van Wesemael. Undeterred, he still managed to pull off a minor miracle by getting loan offers from two of them.

"Both loans must be secured by the EURid *partners themselves contributing initial capital,"* Belgium's registry told its Swedish and Italian counterparts. *"The first is for €500,000, conditional on the partners contributing the same amount and making a €165,000 bank guarantee. The second is for €690,000, with an additional €165,000 guarantee."*

So EURid could now count on a budget of €1,690,000 (€500,000 from one bank, €690,000 from the other, and €500,000 from the partners). More than enough to source the hardware it would need to operate its systems (they anticipated leasing around €1 million's worth of computer equipment). Each partner would end up committing €277,000 (€167,000, or a third of the €500,000 required to secure the loans, plus €110,000 for the €330,000 guarantee the banks were asking for).

Now, the money to begin constructing Europe's domain was there. But what's a sound financial base without the right people to actually build the systems, market the product and – first of all – define what the product actually is?

For the new EURid venture, finding the right people was the easy part. They were all already on hand at each of the partner registries. Because DNS BE was the project leader, most of EURid's initial staff came from there.

Time to start defining the product. When the product is a domain name, it's about determining what the rules of play are. Who can register? What can be registered? Under what circumstances?

For .eu to work, all of these parameters would have to be handled by a fully automated registration chain. An additional challenge was the creation of a predictable and reliable process to provide trademark holders with some kind of priority access to the new suffix.

So, from the basic syntax of .eu domain names (minimum and maximum length of a domain, type of characters that can be used, ...) to eligibility, a set of policies had to be drawn up. Sounds simple? It took EURid

and the European Commission months to iron out the 'PPRs' or Public Policy Rules.

NO CONTRACT

The PPRs are .eu's Bible. They are also a European Commission regulation. One of Europe's laws, in other words.

Providing a precise operating ruleset for the TLD, and making it sacrosanct legislation, was in the cards from the very start. The Commission had made it clear in its 2002 call for expressions of interest: once a registry had been chosen, it would work with the Commission to draft a .eu rulebook that would map the boundaries registrants should observe in order to ensure that .eu truly served the public interest.

The Commission's bid document sketched out what the PPRs would cover. *"Public policy shall include: (a) an extra-judicial settlement of conflicts policy; (b) public policy on speculative and abusive registration of domain names including the possibility of registrations of domain names in a phased manner to ensure appropriate temporary opportunities for the holders of prior rights recognised or established by national and/or Community law and for public bodies to register their names; (c) policy on possible revocation of domain names, including the question of bona vacantia; (d) issues of language and geographical concepts; (e) treatment of intellectual property and other rights."*

The registry would be bound by these rules and would have to implement whatever stipulations they set.

That was a problem for Marc Van Wesemael, as it meant that, until the PPRs were completed, any contract EURid's new Managing Director signed with the Commission would be a risk. *"We worked from 2003 to 2004 on these rules, and all this time we still hadn't signed a contract with the Commission,"* he says. *"I refused to do so until I knew what we would actually be asked to implement. Imagine that the rules would require us to review every single application we got and actually verify that the applicant existed? Realistically, there would be no way we could do that. So I wanted to have the rules ready and approved by the member states before signing a contract agreeing to enforce them!"*

For the entity that would be in charge of the Union's TLD, refusing to sign a contract with Europe's key policy-making institution was problematic to say the least. Especially as this setback was not in the Commission's plan.

Early in 2003 it had set a roadmap that envisaged EURid signing the contract in September of that same year. Work would then begin concurrently on setting the terms of the ICANN contract and defining the PPRs. Everything was to be finished by early 2004 so that the .eu launch could be initiated with the Sunrise period around April 2004.

"We ended up signing the contract in October 2004. Remember the Commission had announced we had won the bid in May 2003," says Van Wesemael. *"The year and a half in between was spent discussing the rules, then getting them approved by legal and accepted by the Member States."*

TIGHT TIMELINE

In a Commission note filed on July 3, 2003, to which the author had access whilst researching this book, INFSO/B/5, one of the Commission's services of its Information Society Directorate-General, sets out a proposed process on what it calls a very tight timeline in an attempt to *"bring the .eu TLD in operation as early as possible in 2004."*

"A draft service concession contract to be concluded between the Commission and the .eu TLD Registry was already adopted by the Commission Decision C/2002/3161 of 28 August 2002," says the note. *"We intend to take the following steps to finalise the contract between the Commission and the Registry"*...

A timetable is then set out with informal negotiations between DG INFSO/B/5 and the Registry organised around four meetings in May, June and July 2003. The Commission was also looking to get confirmation of the formation of EURid as an entity, along with bank and insurance commitments.

At the same time, it planned to hold internal meetings to coordinate various services and Directorates such as legal, press, administrative and general secretariat. This was to lead the Commission to prepare a final contract, *"including a Technical Annex outlining the commitments of the Registry"*, by the end of July 2003.

It was hoped that Fabio Colasanti[1], the Commission's Director-General for DG Information Society, would then be able to sign the contract with EURid in September.

The Commission was intent on driving the process.

"There's a lot that went on during that time that we don't actually know about, simply because we were not part of the Commission's internal discussions," Van Wesemael admits. *"The Commission's COCOM, which stands for COmmunications COMmittee, had representatives from all of the Member States. They worked a lot on what the rules for .eu should be. We were drafted in as a kind of outside consultant, to talk to a limited set of Commission people about the same topic. But we did this without always knowing what was happening on the other side."*

As laid out in the July 3, 2003 note, the Commission's plan was to first finalise its own contract with EURid and then send the registry off to sign a second contract, this time with ICANN. DG INFSO/B/5's tentative timing laid out several steps on the road to that ICANN contract.

The first was a letter to be sent by Erkki Liikanen to inform ICANN that EURid had been chosen as the .eu registry. This was to go out in mid-September 2003. In the same time period, EURid was to open negotiations with ICANN (DG INFSO/B/5 would provide informal behind-the-scenes support, if needed).

The draft contract with ICANN was planned to be finalised at the end of October 2003, just after which EURid would make the whole process formal by asking for the Commission's consent on the proposed contract. The COCOM would then be informed and Fabio Colasanti would signify the Commission's formal consent by letter in December 2003, paving the way for the contract to be signed before the year was out.

In the end, EURid's 11-page Registry Agreement[II] was signed by Marc Van Wesemael and then-ICANN CEO Paul Twomey on June 23, 2005!

TEMPLATE FOR OTHERS

EURid did not want .eu to end up being straight-jacketed by its contract with ICANN. So, far from being onerous on either of the parties, the agreement feels more like the 'exchange of letters'[III] ICANN has put in place over the years as a 'light touch' alternative to a fully-fledged contract with ccTLD managers.

Many of the commitments made in letters to ccTLDs are close in spirit

to the obligations stipulated in the .eu Registry Agreement. The first such exchange of letters[IV] having been made (with Germany) in March 2006, .eu was, in this instance as well, a precursor for other ccTLDs.

The .eu contract sees ICANN commit to: 1) making sure the Internet's TLD management system – the root, in other words – stays operational, 2) updating key information about EURid and its systems when asked to, so that Europe's TLD stays operational, and 3) making sure it always notifies EURid of any changes in its contact information.

In short, ICANN commits to maintaining the technical and administrative foundations needed for EURid to be able to fulfil its own mission of operating .eu.

The contract sees EURid make similar commitments to the technical stability of the Internet by pledging to look after .eu properly.

So, the .eu contract with ICANN was loose enough to be workable for both parties. It was less a traditional contract and more a set of guiding principles. By negotiating such an agreement, EURid also ensured it retained a useful measure of flexibility at a time when no one had any visibility on whether .eu would be a success, or even when it would be launched.

DIFFERENT STROKES

The contract with ICANN was the easy bit. The heavy lifting had already been done by then. Agreeing on the PPRs had been a different kettle of fish altogether!

In its July 3, 2003 note, the Commission provided a reminder of the .eu public policy rules adoption procedure. As set by European Regulation 733/2002/EC, the Commission was to adopt the rules after having consulted with the registry and the Member States as represented by the COCOM. Both the registry and the Commission were also to consult on the "*initial registration policies*", i.e. the proposed launch programme including the Sunrise.

From the second half of 2003 to April 28, 2004 when the first definitive PPRs[V] were published, there was frequent back-and-forth between EURid and the Commission and intense discussions on the content and scope of the Public Policy Rules both inside the Commission and at EURid.

It will surprise no one that the people tasked with protecting the public interest in Europe often had a different focus than the team responsible for actually implementing .eu. But once again, the Commission was very much

in the driver's seat.

The process was iterative. DG INFSO/B/5 would be the first to put pen to paper. This initial draft would then be amended through discussions with other Commission departments such as legal. EURid was consulted and asked to shine a practical light on the stipulations being laid out for Europe's TLD, but this was not systematic and the registry was not invited to many of the discussions being held on the matter at the Commission.

The EURid team did take part in a few of the COCOM meetings. Several topics remained for which an agreement with the Commission still had to be reached. The issue of 2-letter codes, for example. Should 2-letter .eu domain names be allowed? Succeeding versions of the draft PPRs reveal that vacillation on this question had been going on for quite a while. Some versions of the draft disallowed 2-letter codes. Then there would be a slight wording change, and the draft would say that 2-letter country codes were allowed. EURid had always advised against 2-letter codes for the reason that country codes evolve over time (countries have been known to change their denomination and even, in extreme cases, disappear altogether). Therefore, it was better to restrict them at the outset than to risk a conflict between a 2-letter .eu domain name previously registered lawfully and a new country code that suddenly appeared and matched that domain name.

EURid was not heard. The final decision was to allow 2-letter .eu domains. And, per Murphy's Law this decision meant that the theoretical conflict just described soon became fact. When the countries that used to make up Yugoslavia went their separate ways, they also laid claim to new 2-letter country codes. Like Montenegro. By the time its country code ME was created, me.eu had already been registered…

BUSINESS VERSUS POLITICS

Why was it decided that playing it safe as far as country codes were concerned was not a good idea? It's possible some Member States were pressured into going down that road by their business sectors, where major corporations with 2-letter names or acronyms might have wanted to be able to register the corresponding .eu…

EURid was on the receiving end of Commission decisions on the finer points of what the .eu rules would be. The team was involved in a constant

battle to keep a healthy dose of realism in the draft rulebook being proposed.

To do so, the registry was dependent on whatever information it could eke out of the COCOM Working Group meetings. An internal EURid note sent on January 12, 2004 with the latest Commission draft gives an inkling of the depth of work done on both sides to balance the business requirements of running a registry with the political obligations of a supra-national institution.

The note starts by recognising the progress the latest draft represents, before singling out areas that still need to be worked on. Among them, the way to implement the requirement to offer registration services in all of the EU languages, how to define prior rights, and whether dispute resolution providers – the agents that would, for example, handle any trademark-related dispute – should be selected.

On the draft itself, handwritten comments signal potential problem areas. Sometimes, no hand-scribbled note was even necessary. A couple of exclamation marks would be enough to portray the reviewer's dismay at a specific item being proposed...

As work on the PPRs progressed, significant tension could at times be felt between the two parties, EURid's experience of TLD management colliding with the Commission's mission to act for all Europeans.

Take IDNs, for example[VI]. Standard domain names are Latin scripts only. Internationalised Domain Names work with other language sets such as Arabic or Chinese. With Europe's institutions committed to working in all of the Union's languages, researching IDNs made sense for .eu. But at the time, the technical framework for IDNs was not yet very stable. Having .eu support a few of the French or German accented characters was one thing – but deciding from the get-go that this unknown quantity that was .eu would be open to a multitude of languages and scripts was on another level of complexity altogether. Plus, TLD operators had very limited experience with IDN in those days. Building an IDN capability into .eu from the start would have been imprudent. Getting it right would have required extensive research and proof testing – which would have caused long (and unacceptable) delays to the launch programme.

The issue of IDNs highlights the sometimes opposing forces at play in crafting a .eu that was ambitious yet realistic. Ambitious enough to give its intended audience that push towards greater Internet adoption, but realistic

enough to be viable as a business proposition.

Put differently: .eu is about more than just selling domain names; but, if that ability to be a realistic proposition on the domain name market is missing, then there can be no .eu.

So, prior to launch, EURid had to worry about keeping .eu real – no matter how much the team at the registry might agree with the laudable goals the Commission wanted to reach through the introduction of a pan-European Internet Top Level Domain.

Written statements submitted by EURid at the time the different PPR drafts were being worked on show real concern, sometimes even angst, at the prospect of ending up with an unworkable, unmanageable or unsellable domain.

The launch programme structure and mechanism was one area of major worry, with EURid indicating that it had *"expressed its interest to run the .eu registry based on a cost-effective and fully automated model"*, but that the rules planned at the time for the phased registration periods at launch would *"not allow such a model"*.

EURid did not mince words in the advice it gave the COCOM, arguing that the Sunrise rules that were envisaged at that time would make it very difficult to find an organisation willing to take on the work of evaluating the requests received during this crucial phase of the launch. *"If this is the case, the sunrise will fail,"* EURid wrote in a note to the Commission.

Considering the problems encountered during the actual .eu launch, EURid was right to pressure the Commission for a dose of realism. Anyone who struggled through the .eu Sunrise phases will probably break out in a cold sweat at the realisation that those PPRs could have been even harder to work!

REALISTIC EVOLUTION

EURid's concerns were heard. *And* the Commission's ambitions were realised.

For example, introducing IDNs may not have been the right move at launch, but it was the right thing to do if .eu was to become a truly inclusive TLD for all Europeans. EURid introduced IDNs at the second level (to the left of the dot) in December 2009, at a time when the TLD was a well-oiled

machine that had long since shown itself to be in optimal working condition (.eu passed the 3 million domain mark at the start of that year).

"An open and inclusive Internet is crucial for growth and development, for economic and social welfare," wrote European Commission Vice President Neelie Kroes in a foreword to a "World Report on Internationalised Domain Names", which EURid published in 2014[VII]. *"For that reason our Internet policies should help diverse cultures and communities to exploit the opportunities that the Internet presents, while preserving that diversity. (…) the use of IDNs can lead to a more proportionate use of the Internet in relation to the native languages of user groups. Not by driving English speakers away, but by empowering and facilitating speakers of other languages to come online."*

EURid's pragmatic approach, coupled with the Commission's sincere desire to provide a public service, have made .eu work. And evolve.

As it celebrates its 10th year of operation, the TLD is still grounding its evolution on realism. For instance, now might be a good time to push beyond .eu's existing IDN support of second-level domain names by aiming for a complete native script web address. *"After we launched, we had the time to focus on IDNs and introduce them properly in .eu,"* says Van Wesemael. *"Now the next step is to introduce IDNs to the right of the dot, so that you can have IDN versions of .eu in the scripts of Europe that support it: Greek and the Cyrillic script for the Bulgarian language."*

That same desire to continuously improve led to the final draft of the Public Policy Rules becoming official on April 28, 2004, when Commissioner Erkki Liikanen signed it on behalf of Europe's principal policy-making institution.

Since then, those rules have continued to be refined and updated as circumstances and evolving requirements – both in Europe and on the Internet – have dictated.

COMBATTING ARCHAISM

The initial Public Policy Rules of 2004 remain the prerequisites that .eu and its ecosystem have to abide by, from the registry and registrars to the people that actually benefit from .eu: its registrants.

There are rules and mechanisms no longer relevant today, like those that governed the initial registration periods, and basic principles that remain

so. For example, the requirement that .eu registrations be available through a network of accredited registrars, in all of the EU's official languages, and by electronic means.

The idea was that .eu should not be a retrograde suffix but, instead, one at the forefront of the innovations the Internet was bringing to the way consumers were shopping online.

By the middle of the 21st century's first decade, securing a service or buying a product online had to be easy and quick. From virtual window-shopping to paying at checkout, consumers now expected to be able to complete a transaction almost instantaneously. Gone were the days when domain registrants would not baulk at being asked to send paper forms in the post to finalise their registrations, as had been the norm at several European ccTLDs for a number of years.

The Commission's ambitions for .eu fast-forwarded this archaic registration model. By inscribing it in stone in its PPRs, Brussels was sending a clear signal that it wanted only the most modern distribution mechanisms for .eu.

The PPRs went into what at times seemed like a surprising level of detail.

On the way registrars should be accredited, in a *"reasonable, transparent and non-discriminatory"* fashion so as to *"ensure effective and fair conditions of competition."*

On the fact that someone eligible for .eu could actually register more than one domain if they so wished –, a seemingly obvious stipulation, but nevertheless one enshrined in the PPRs.

On the obligation for registrants to submit valid information about themselves along with their domain name request, so that .eu's[1] public WHOIS database could contain real data. A stipulation aimed just as much at preventing .eu domains from being used for illicit activities as at preserving the European Union eligibility requirement for the TLD.

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[1] WHOIS, a contraction of 'who' and 'is', provides information on a domain name such as who registered it and when: http://www.eurid.eu/en/about-us/eu-infrastructure-and-services/lookup-services

The Commission was adamant that .eu should not reflect in any way the Wild West mentality that had existed on the Internet before legal frameworks were put in place to safeguard prior rights. Not only trademarks, which would of course be protected and even afforded their own specific priority registration period, but also those terms considered key by the Union's Member States themselves.

So Article 8 of the 2004 PPRs states: "*Member States (and acceding countries) may request that their official name and the name under which they are commonly known in one or more of the official languages (of the Community as extended in May 2004) shall not be registered directly under the .eu TLD by any person other than their national government. To that end, each Member State (or acceding country) shall send the Commission, within two months following the entry into force of this Regulation, a list of those names requiring to be reserved, as well as a designation of the body that will represent the national government in registering the names.*"

Getting these names from some national governments proved very difficult for the Commission, and, despite best efforts, the actual list was not available in time for the 2004 PPRs. Rather than delay their publication, and therefore risk making .eu late to market, it was decided to forge ahead without them.

A later amendment, the first of four, was published on October 10, 2005[VIII]. Just in time, with the .eu Sunrise just around the corner in December of that year! It added a 13-page annex to the PPRs containing all the names requested by each of the EU Member States that had responded to the Commission and EURid's requests.

This was further amended in 2007, when Bulgaria and Romania became fully-fledged EU Member States, to include the names reserved by those two countries[IX]. And then again in 2009, to include non-Latin versions of the names reserved by Member States, after IDNs became available in .eu[X].

For .eu, Member States may not have sent in their names on time, but at least the intention to shield them from would-be usurpers was there. That was especially important if .eu was to become the trusted online territory the Commission envisioned.

Trusted by Europe's national governments and institutions, but also by its citizens. For them, expecting to find a bona fide public service under a

.eu domain name and ending up at a scam site instead would have weakened their trust in both .eu and the Internet.

As laid out in Regulation 733/2002 and numerous statements by European officials, the Commission's plan for .eu was to help strengthen the position of European businesses and individuals in the digital economy by making the Internet feel more secure and more accessible to them.

Allowing official names to be hijacked would not have been in line with those goals.

So the PPRs addressed issues of trust, both in terms of Internet users and .eu domain consumers. "*In the .eu bid, there had also been notions of promoting the European domain industry,*" says Van Wesemael. "*The PPRs confirmed this. EURid did not have to do anything directly in that regard, but by ensuring that we could not be a registrar ourselves and that we had to treat all of our registrars equally, that in itself was supporting the registrar community.*"

Hardwiring clear separation of responsibilities and functions in the .eu distribution channel meant consumers could feel more confident that the entities accredited to sell them domains were behaving properly and were themselves being treated equitably by the operator of the TLD.

SAFETY FIRST

Ensuring .eu is both trusted and trustworthy has remained a priority as far as the TLD's rules are concerned.

The PPRs were amended again in March 2015[XI] to grant EURid greater powers to check registrations before, as well as after, the fact. This was done to build up protections against new scams made possible by the introduction of IDNs, whereby cyber-crooks might try to take advantage of the visual similarities between characters in different scripts (for example, in Cyrillic the letter 'P' corresponds to the Latin alphabet's letter 'R').

So the 2015 update, this time signed by Commission President Jean-Claude Juncker, changed Article 6a of the PPRs. This included a stipulation that the "*Registry shall implement technical measures to minimise potential visual confusion arising from the use of the characters in all official languages referred to in Article 6(4). Those technical measures shall be part of the verification of the validity of registration applications and may result in the requested domain name being declared ineligible for registration.*"

This regulation change was necessary for EURid to be able to introduce a methodology called 'homoglyph bundling'. The idea is to check for registrations in one character set which may be confusingly similar if written in another character set. Managing this before a domain name that can potentially confuse end-users is actually registered is another step in making .eu more trustworthy.

The 2015 amendment also shows the Commission's and EURid's efforts to keep .eu both practical and relevant.

In the original 2004 PPRs, a small number of names were set aside for only the registry to use. Internet suffix operators do this to ensure terms that might be critical to their mission of managing a TLD are never inserted in the pool of generally available names.

The 11 words reserved by EURid in 2004 – eurid.eu, registry.eu, nic.eu, dns.eu, internic.eu, whois.eu, das.eu, coc.eu, eurethix.eu, eurethics.eu, euthics.eu – were all linked to potential registry operations. The registry's name is an obvious one. The term 'registry' is too.

The next 5 terms are all part of the technical jargon that, over the years, has become the Domain Name System's standard vernacular. For example, NIC stands for Network Information Center, a periphrase for 'registry'. In the early days of the Internet, the term Internic was coined to describe a similar function.

DAS[▸XII] is more EURid-specific and a testament to the .eu registry's Belgian origins. It stands for Domain Availability Service, a function made available by the registry to provide registrars with a quick and easy way of checking whether a domain name is available for registration. Doing so through DAS, rather than a full WHOIS check, means that the registrar's systems only have to look for one response – yes or no – rather than having to parse complete WHOIS domain records.

The next term is also EURid-specific and refers to the registry's code of conduct, a label EURid created to allow registrars to voluntarily commit to upholding a set of customer service standards that go above and beyond what their contract with EURid requires them to do. Registrars who sign on to the .eu code of conduct are subject to investigations and request for remedial action if they do not adhere to the code's stipulations.

EURid had originally planned to push this concept further and also include notions of ethics. But this was never implemented. Rather than

keep the reserved names, EURid asked the Commission to update the PPRs to reflect this, and allow eurethix.eu, eurethics.eu and euthics.eu to be given back to the general public so that anyone wishing to register them might be able to do so.

At the time of writing, none of the three names had been registered.

HOPSCOTCH

Evolving .eu's rules to keep the TLD both current and secure, making sure those companies entrusted with selling .eu domains strive to deliver a certain level of service and are accountable to the registry for looking after .eu registrants… all concepts that help build a better .eu.

But rules and codes of conduct cannot prevent disputes arising around which domain name goes to whom.

The notion of .eu domains not infringing existing rights and, in case they do, being subject to a formal dispute resolution procedure, were hardwired into the original PPRs by articles 21 and 22.

Yet handling disputes for .eu was more complex than for other existing TLDs. In fact, Van Wesemael rates finding a suitable ADR (Alternative Dispute Resolution)[XIII] provider as one of the most complex tasks in the .eu to-do list.

Handling dispute resolution in all of the Union's languages was a must. So the EURid brainstormed on the most likely candidates. Experienced dispute resolution specialists like the World Intellectual Property Organization (WIPO)[XIV] or the International Chamber of Commerce (ICC)[XV] were obvious choices. But when EURid met with them, the team came away disappointed because they were unable to commit to handling more than a few languages at best.

With no obvious solution in sight, it was time to get creative. Why not set up 'regional ADR bureaus'? If no one organisation could cover the breadth of Europe's languages, perhaps language- or regional-specific teams could be created using the existing .eu partners. A scenario was imagined whereby the Swedes might cover the Nordic and Baltic languages; Brussels could do Dutch, English, French and German; Italy could cater to the Mediterranean languages. With the Czechs on board as a .eu partner, the EURid team even started looking towards Prague for coverage of the Central European languages…

But there were issues with hopscotching across Europe trying to piece together a uniform solution from heterogeneous sources. How would the dispute resolution effort be coordinated? How could a complainant in one region be sure that, no matter what language a complaint was submitted in, it would always be evaluated equally?

And there was an even more fundamental problem: the partners simply weren't keen to take on these ADR duties at all!

Then the solution came from where EURid least expected it. Tomas Marsalek, one of the first EURid Board members, arranged a meeting between the registry and the Czech Arbitration Court. A non-profit organisation created in 1949, the CAC had a wealth of experience handling both domestic and international disputes on technology-related issues.

So the credentials were there, but the initial response seemed lukewarm. Early meetings yielded a 'we'll get back to you' style response, which did not seem to bode well. But a subsequent meeting started with the CAC Chairman making the intro EURid could only have dreamed of. "We're interested in taking on the .eu ADR, but on one condition," he said. "You let us do all the European languages and centralise all the ADR activities with us."

Van Wesemael's "OK!" was probably blurted out before the CAC Chairman even had time to finish his sentence.

THE PERFECT STORM?

With the PPRs completed and the ADR covered, in theory .eu was ready to be launched. True, there was the small matter of turning theory into practice. Sketching out the general canvas of .eu in the PPRs was one thing. Implementing it was a different kettle of fish altogether.

In practice, operating .eu meant working a 2-phase Sunrise launch – covering rights that had never been covered before by similar priority registration periods for any TLD, through a network of registrars that would be dealing with new systems and requirements.

There was a very real risk of seeing the .eu launch devolve into chaos.

SOURCES

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xv http://www.iccwbo.org/

CHAPTER 7

The European Domain rises

.eu became a technical reality on April 29, 2005, when it was inserted into the Internet root by IANA. Jargon and geek-speak aside, what this meant was that any address ending in .eu would now work exactly the same as if it had been registered as a .com.

For a few months, only EURid could enjoy the privilege of a working .eu Web address. The first name was www.eurid.eu and the registry relocated to that new address. But all other would-be .eu domain owners would have to wait for a launch programme that had been engineered in 3 phases.

The first two were called priority registration periods, or 'Sunrise' phases.

UNPRECEDENTED

December 7, 2005 at 11:00 Central European Time (CET).

That was the moment the .eu registry first opened up for registrations.

Countless hours of brainstorming at EURid had led to this moment. In the end, it had been decided to engineer the Sunrise phases so that different categories of rights could be applied for at different times.

The first was the 2-month Sunrise 1 period. From December 7, only public bodies and holders of registered trademarks were able to apply for a .eu domain name. The system was designed to turn down an application based on any other right. And to avoid any challenges to the fairness of the process, it was built so the registry couldn't tamper with it: the applications were time-stamped and the sequence was shown in a special public WHOIS database for all to see.

Sunrise 1 ended on February 7, 2006 11:00 CET and was immediately

followed by another 2-month period, the Sunrise 2 (start point: February 7, 2006 at 11:00 CET[1], end point: April 7, 2006 at 11:00 CET), during which holders of other rights could now apply for their .eu domain names.

The last stage of the rollout programme was then initiated. At 11 am CET on April 7, 2006, .eu opened for general registration (a phase called Landrush). Any entity or individual fulfilling the eligibility criteria could now apply for a .eu domain name.

It was a firestorm!

The two Sunrise phases had yielded impressive registration numbers, but Landrush was on another scale altogether. During the first 2 hours of operation on that April 7 launch day, EURid's computer systems averaged over 7,500 transactions per minute. The numbers peaked at 8,416 transactions. That's over 140 operations, such as a domain registration, that EURid's systems had to cope with per second!

Close of business on April 7 brought record-breaking numbers with a total 3,030,614 transactions on the system for 1,057,212 new .eu domain names.

Any comparison between the .eu launch and the Apollo space missions should obviously not be taken too literally. But there are similarities in that the teams making .eu a reality were breaking new ground without much of a safety net.

A registry system like this had not been built. And the scale of the .eu launch has never been seen since. The .eu registration statistics tell the story of a once-in-a-lifetime event on the Internet. No TLD had ever opened to such demand – sailing past that magic 1 million figure – as on the first day of the Landrush.

COMPUTERS AND POLITICS

A million names in one day. That kind of appetite from domain name registrants is like science fiction for contemporary Internet addresses. The new gTLD general availability numbers have been much lower, the norm being a few thousand names registered at launch.

Moreover, network and Internet technology is more advanced in the new gTLD age than it was in 2005. When the EURid technical team breathed life into .eu, they were in some ways the pioneers of a new domain name

[1] Central European Time

expansion. People tasked with operating a registry today rely on technology and best practices developed during those launches of the mid-2000s.

Launching .eu was truly a massive undertaking, because it was breaking new ground politically as well as technically.

A continent-wide political institution rallying behind as obscure a project as the creation of a new Top Level Domain would seem unlikely today. At the turn of the century, it was plain unfathomable. At the time, what civil servant or politician could even explain the concept of an Internet suffix, let alone back a rationale to create one?

In 2015, the '.africa affair'[I] served as a reminder that getting an entire continent to work in concert on the ideal of a single TLD is not just difficult, it is ground-breaking.

In 2012, as part of ICANN's new gTLD programme, two requests came in for a .africa TLD: one from the African Union Commission or AUC[II] (Africa's equivalent of the European Commission), the other by an independent entity.

The AUC first supported the independent bid, before changing strategy and embarking on its own.

At .eu level, there was never any doubt that the European Institutions should be in charge. Not so for .africa. This 'affair' has become an embarrassment for many in the Internet's governance organisations, as governments, ICANN's own staff, and armies of lawyers were dragged into the dispute over who should be awarded management of Africa's TLD.

In the case of .eu, common sense prevailed over political machinations. The European Commission steered a process of continental collaboration to a successful conclusion. It was a wise move to put it in the hands of the private sector.

But it was also a technical achievement, as the team tasked with turning Europe's policy ideals into operational realities took new challenges head-on and faced development uncertainty without baulking.

That team was led by EURid Technical Director, Peter Janssen.

BUILDING ON PAST FAILURES

All through the .eu story, one important ingredient in the TLD's success has been the .be antecedent. This is true on the technical side as well.

The DNS BE adventure meant that .eu was built on solid foundations. "*I think we were very fortunate to be able to reuse the technical implementation that had been done for .be,*" asserts Peter Janssen. "*There we'd gone from a very closed manual system to one that was first come, first served and online-based. At the time, this was very new for the .be registry and the domain industry. So we gained significant experience in catering for the sort of transactional system that would later be used for .eu.*"

Janssen is completely candid about what happened when the .be system was switched on. He has no qualms about recognising that, when the liberalised .be first opened for business, his team had serious issues with just keeping the systems up and running. "*But when it came to doing .eu, that .be experience gave us a head start because we knew that we had to look at certain things to make sure that we would stay up and running.*"

It's probably unfair to call the .be liberalisation a failure anyway. True, in the first moments the system did not work as planned – but after that, it operated to expectations. And it was a complete revamp of the registry's domain registration chain and back-office registrar management.

For .eu, the basic theory was the same. A central registry working through an EPP-based system to deliver equal access to a network of accredited registrars with a strict first come, first served policy. But the rules were much more complex: the phased registration periods – with the gradual build-up all the way from the Sunrise 1 launch through to the Landrush – and different rights and registrants becoming eligible at different times, all needed to be built into the system.

YEARS OFF MY LIFE!

It also needed to be fully automated – otherwise, .eu simply would not scale. And delivered on time for the Sunrise 1 starting date.

Janssen's team soon realised that building EURid's technical infrastructure was not simply a case of bolting new bits onto previous registry systems. Adding the specifics .eu called for was hard enough. Meeting the December 7, 2015 deadline was even worse.

"If we had to do it again, I think we wouldn't have promised to launch before the end of the year," admits Janssen. *"I'm still convinced the stress of doing this took a few years off my life!"*

Time was not the only pressure point. The .eu registration system would have to be capable of handling whatever was thrown at it, whether legitimate or abusive. And it would have to be able to do this while still guaranteeing every potential registrant got an equal bite at the apple.

The system would be fielding incoming requests from all over the world – it had to be able to cope, whatever the load. EURid was going to sign up registrars from everywhere, not just from Europe. It would be working with the industry's heavyweights, many of which were in the US or Asia. So the moment .eu was opened up for business, its registration systems would be hit by a huge number of connection attempts. No doubt some would even try their luck and hit the system before zero hour on D Day.

"We knew registrars would do their utmost to get in first. So we had to make sure than even before this big opening, whatever we did would not favour one registrar over another."

In less than a year, .eu would go from being nowhere to Europe's third largest country code domain. To cope, the small, almost backyard, operation that was EURid had to grow significantly in a very short time. A sales network had to be built, and supported well enough that it could meet the formidable demand for this new Internet address space.

After all, you could not have eager would-be .eu owners unable to find an outlet to buy the domains!

DOUBLING UP

Before looking to sign up vendors, EURid had to first build itself up. Right up until the launch, the team behind .eu was best described as fledgling. The three founding members – the registries for .be, .se and .it – had been asking their staff to create time where none existed and double up on their regular duties with .eu-related work.

This was a substantial effort: the staff at the founders were extremely generous with both their time and their goodwill for what was essentially a lot of volunteer work on top of their day jobs.

EURid calculated that, in 2005, the founders put in a cumulated 2,152

man-days of work on .eu! Because money remained tight up until the launch, the full number of hours was not billed to EURid. The infant registry only paid for 1,961 man-days.

But putting staff on double duty could only go so far. Each of the founders still had their own registries to look after, and besides, .eu needed a specific approach. For example, one requirement that EURid's founders did not have in their day jobs of running their respective national suffixes was the provision of customer service in all of the European Union's official languages. But EURid did.

The first official EURid employee was hired in April 2005. A core team was operational by June of the same year. As it ramped up for its full launch, the management team set about expanding the work force to provide the right level of support Europe-wide.

Ads went up on the registry's own website, recruitment agencies were hired, and an intensive recruitment programme was started in January 2006. In only 2 months, EURid had taken on a full support team of 18 full-time and 9 part-time employees!

As .eu operations expanded, so did staffing requirements.

TECH SUPPORT

After support, it was time to beef up the IT department. And if you're going to jump out of a plane, make sure you trust the people who packed your parachute.

Janssen had the same approach for the team he'd be sharing the stress of doing .eu with. Janssen had known some of the people on his team for over 20 years. He'd even met a couple of them back at university. So, even though everyone was under severe time pressure, he felt the technical proficiency was there to meet the challenge of getting .eu operational when it needed to be. That meant the confidence was still there, even though the mountain they had to climb together was more Everest than Montmartre.

When EURid's management first started hiring team members, the initial focus was on customer service, which had to be provided in the various European Union languages as well. In .eu's engine department, the priority was reliability and a proven track record. The technical team was simply the one from .be. "*When we started, it was only people from* DNS BE. EURid

didn't even exist as a company. When it was created, we first hired people for support, finance, contracts, that sort of thing. We didn't go looking for technical staff immediately, because we had the DNS BE *team on board."*

On the day of the launch, the technical team had set up what they called an operations room and what anyone else would call a war room. Located in the main meeting room of the EURid offices, this control centre was all screens and monitors. The most important piece of data – every domain name being registered – was projected on the room's largest wall.

As zero hour approached, all of the people in the room were both haggard from lack of sleep and buzzing with anticipation. Peter Janssen even wore a suit and tie that day! EURid's firewalls had been set up to block all requests up to exactly 11:00:00.000, at which time they would start accepting all registration requests coming from known sources.

Monitoring all this were techies who had all worked for DNS BE staff, including Janssen. They had been leant to EURid by DNS BE. EURid had taken on five people to maintain and develop the all-important registrar platform and oversee the registry's daily technical operations. They were good, but they hadn't had enough time to build up the required amount of knowledge about the registry or why certain decisions had been made in the past.

The DNS BE experience just had to be recycled into the .eu adventure. That was the edge. The hidden advantage that was too good to pass up.

So, as EURid was beginning to take shape, given the tight timeframe to launch, the only sensible course of action was to ask the DNS BE computer wizards to give up any semblance of a personal life and take up a second job working on the .eu systems.

In EURid's early days, the tech team was just an amalgamation of operations and development. But by the time .eu went live, they had become two separate teams. And after a while, it was no longer deemed viable for DNS BE to keep their employees working on a different registry's systems almost full-time. So they were transferred to the EURid payroll.

DNS BE's loan of top-level technical staff to the .eu effort was a sacrifice made for a greater good and a long-term vision for the Belgian registry. The Buddhist monk Bodhidharma is supposed to have said that evil deeds result in hardship and good deeds in blessings. This certainly turned out to be true for DNS BE. *"They did this because they believed in the project,"* says Janssen. *"But the idea was also to have the system that was designed for .eu, used for .be as well. And*

that's what happened. A lot of things that were built for .eu were fed back into the .be registry."

After the launch, EURid had to grow as fast as .eu. In the space of just one year, EURid's workforce tripled to match the explosion in .eu domain name registrations. By the close of 2006, staff levels stood at 25 full-timers and 12 part-timers. By 2007, EURid had gone up to 33 full-time staff.

EURid ended 2014 with a total of 57 employees working out of four different locations. Whilst the official work language at EURid is English, most staff are bilingual, if not trilingual. Some even speak 6 languages!

NEW OFFICES

Language diversity was important to EURid from the start. After all, this was to be Europe's TLD. That meant being able to serve .eu sellers (the registrars) and users (the registrants) as far afield as possible. But how would such a small organisation cope? One idea was to start by opening offices where each of the 3 founding partners were located.

Up until the second quarter of 2006, the launch was obviously the main focus. Completing that important step was like finishing the ground floor of a new house: good enough to live in for a short while, but not well suited to long-term occupation.

Once that was done, it was time to add the creature comforts.

Belgium was still, and would remain, the centre of the EURid universe, with the registry's headquarters located in Diegem, just outside Brussels and conveniently close to the European institutions. But from July 2006, work began on widening EURid's footprint by increasing its local presence.

The first of a series of new offices was opened in the Swedish capital of Stockholm. This 'Northern Regional Office' would offer support in Finnish, Lithuanian, Latvian, Estonian, Danish, English, Irish… and of course Swedish! At the time of writing, it has 6 staff.

The next location was Prague, in the Czech Republic. Work on this 'Central Regional Office', to provide Czech, Polish, Slovakian, Romanian, Hungarian and Bulgarian language support, started in September 2006. Four people work in the Prague office.

The last regional office – covering the Southern European Region and offering support in Spanish, Portuguese, Greek, Slovenian, Italian and

Maltese – was opened in 2007 in Pisa, Italy. It is manned by 6 people.

This trans-European presence meant that EURid was equipped to withstand the huge registration volumes seen in .eu from the very first day of the domain's existence. This would be coming from end-users, of course, but from registrars as well.

Since signing its contract with the European Commission in 2004 and officially becoming the .eu registry, EURid had been working to nurture registrar interest and ensure there would be enough of these specialised domain stores selling .eu when the time came to actually launch it.

ON THE ROAD

The more registrars signed on to sell .eu, the higher the potential registration volumes.

But these vendors could hardly be expected to just come knocking on EURid's door out of the blue.

In the run-up to the Sunrise launch, the registry went to great lengths to ensure prospective registrants knew about .eu and understood the domain's rules and what services they would be expected to provide. The Commission's Public Policy Rules also had to be explained.

An information kit was put together. It provided guidance on how to become a registrar, who was eligible for a .eu domain name, how the priority registration periods and launch schedule would work, how disputes would be handled and priority registration requests checked.

It even covered registrar payments and technical aspects such as the software used to connect the registry to its registrars.

But a brochure was not sufficient.

EURid embarked on a roadshow to proactively meet with registrars. One-day seminars were held throughout Europe in Brussels (Belgium), Ljubljana (Slovenia), Pisa (Italy), Stockholm (Sweden), Prague (Czech Republic) and Madrid (Spain). Attendance for the roadshow was over 500 people. These seminars helped registrars understand the .eu model. They were also useful in aiding EURid staff to gain more insight into the registrar market.

HOW MUCH?

The domain name industry is very diverse. Different business models coexist. Some companies see domain names as their main product, whilst others consider them a means to a very different end. A hosting company might use domains as loss leaders to sell more expensive products such as website hosting or e-mail packages... But there are also specialised sellers for whom domains are the primary focus.

The industry tends to identify 3 main types of registrars: wholesale, retail and corporate.

Whatever the business model, one constant is the price registrars pay for a .eu domain. The domain industry calls this the 'registry price'. Recall the European Commission's stipulation that the *"Registry shall impose fees directly related to costs incurred"* written into its Call for Expressions of Interest to select the .eu TLD Registry. That meant that, independent of the type of registrar, registrant or even the domain name itself (whether the term could be perceived to have greater value than other, less descriptive words), EURid's prices would always have to be the same.

Those prices would be higher during the Sunrise phases to cover additional validation costs. The registry price would dictate, to some extent, the amount paid by the end-users, but registrars were free to apply whatever mark-up their business practices or circumstances dictated.

The Sunrise registry prices – the price a registrar would pay for a one year registration – were set at €30 for a name registered by a public body, €40 for a trademark, and €80 for a domain name claiming any other type of right. Once the Sunrise periods were over, the price dropped to €10 a year.

If those were the prices paid by a registrar, what would a registrant pay? Back to registrar business models.

Wholesale registrars tend to work through networks of resellers. Not every provider of Internet-related services wants to go to the trouble of getting accredited by ICANN and by the registries to sell domain names.

Web agencies, for example, may need to supply their customers with a domain name as part of the comprehensive website-building packages they offer. For them, opening an account with a wholesale registrar is a much more resource- and cost-effective solution than going the accredited route.

Wholesale registrars are looking for volume. They want to partner with

a high number of resellers (such as these web agencies) and will provide them with domains at almost cost – or registry – price. For that price, the resellers get very little service. At minimum, they are allowed to connect through their registrar to the registry and secure their domains. Examples of wholesale registrars are Canadian company Tucows or US company eNom.

NOT JUST SELF-SERVICE

Retail registrars will also look for volume, but will be more end-customer focused. In other words, their clients tend to buy domains for themselves rather than for someone else. Even though the retail market has become extremely competitive, the mark-up over the registry price remains small, but it's still probably bigger than that of a wholesale registrar.

Customers of retail registrars will be provided with domain management systems, allowing them to update their contact details or point the domain to a specific website, but they can expect to have to do all the actual work themselves. Not ideal when you don't know anything about domain names, or you are busy, or you have a lot of domains to manage...

An example of a retail registrar is the Industry's biggest, and best-known: American company GoDaddy.

Cheeky television advertising in major US sports events such as Nascar and the Superbowl helped put GoDaddy on the map and, in turn, take the domain industry mainstream. More recently, on April 1, 2015, GoDaddy's IPO on New York's Nasdaq further increased the company's aura. Introduced at $20 a share, GoDaddy gained more than 30% on its opening day with shares peaking at $26.84, valuing the company at around $6 billion[III].

FULL SERVICE

Corporate registrars offer the widest range of services and apply the biggest mark-ups to registry prices. Examples are American company Mark Monitor, which was acquired by media giant Thomson Reuters in July 2012. Corporate registrars tend to operate in the B2B (business-to-business) market, whereas retail registrars are more B2C (business-to-consumer).

Corporate registrars will serve companies, owners of large domain name portfolios like major trademark holders, and customers that require a

comprehensive set of domain-related services such as lawyers.

These registrars work to take the burden of owning and managing domain names away from their customers. They cover everything, from the most basic services such as registration and renewals, to the most advanced like dispute resolution and buying or selling pre-registered domains.

All these different types of registrars participated in the .eu launch at the end of 2005 and the first half of 2006.

The .eu registrar network could be global. The prohibition against .eu registrants being from outside the European Union, which was imposed by the Commission's rules, did not apply to registrars. The Commission had initially planned on imposing the same restriction, but EURid had pointed out that many would-be .eu registrants were international corporations working with registrars from all over the world, not just Europe. So in the end, it was decided that any registrar, from anywhere, could become a .eu store.

To be authorised to sell Europe's domain, a registrar was still required to comply with European Community regulations and sign EURid's Registrar Agreement. They would also have to ensure that registrants also sign a contract – the Registration Agreement – in which they agreed to comply with the EC's legal framework on issues like personal data protection.

OPEN BAR

Registrars had been eager to jump on the .eu bandwagon for a while. But for EURid, until the launch, operating .eu was all spend and no income. So, Marc Van Wesemael came up with an idea: he launched a programme called BAR, for Become A Registrar.

A simple online application procedure automatically created the registrar contract. Once signed and sent to EURid, the registrar would automatically be sent an invoice for a minimum of €10,000. That was the lowest level of pre-payment a registrar could choose. In exchange, registrars were listed on EURid's website and could participate in the .eu launch. And EURid got a much-needed cash infusion before it had begun to actually sell some domains.

EURid didn't keep the pre-payment. It stored the money on behalf of the registrar. As long as the pre-payment account was in credit, the registrar

could transact with EURid on anything from registering a name to renewing or transferring one from another registrar.

€10,000 sounds like a lot, until you work out what registrars could actually do with it. One pre-payment was enough for just over 250 Sunrise 1 names (recall the €40 registrar price) or 1,000 of the standard registrations that would be available from April 7, 2006…

Considering that, by the end of 2006, each of the 40 most prolific .eu registrars managed more than 10,000 names helps put the pre-payment amount in perspective. It certainly wasn't regarded as a large amount by most professional registrars. Many actually thought it was too small!

As an extra twist, BAR worked by listing those registrars that had paid the most first. A small bonus, but enough to incentivise some registrars into raising their stakes and sending EURid a lot more than the obligatory 10 grand. Some registrars actually contacted EURid to find out how much they needed to credit their account to be listed in a specific position on the vendor list.

EURid opened BAR on June 16, 2005. The response was impressive and provided a first indication of the demand that could be expected for .eu domain names once the TLD actually launched. Through the programme, the registry was able to collect enough working capital to be ready for the December 7 Sunrise 1 launch date.

LOTS OF VENDORS

Only two weeks into the accreditation cycle, 101 registrars had signed up. Two months before the key December 7, 2005 Sunrise 1 launch date, EURid had 475 registrars from 40 different countries on its books!

By the time the Sunrise launch began, that number had risen to 1,559. When it opened for business, EURid had registrars from 45 different countries, making sure .eu was available to as large a number of prospective European domain name owners as possible.

As of December 31, 2006, there were a total of 1,570 registrars accredited by EURid to provide .eu registration services. Two of those had more than 100,000 .eu names under management, and two more had a name count of 50,000 or more.

44 registrars had registered between 10,000 and 49,999 names and 47

registrars between 5,000 and 9,999 names. With at least 1,000 names and not more than 4,999 names, 251 more registrars had covered the full amount of at least one pre-payment to EURid.

But not all registrars had been busy during the launch: 63 of them had yet to register a single .eu domain!

As Europe's biggest domain name market, Germany logically had the lion's share of .eu names. At a whopping 778,082 domains, German registrars accounted for more .eu names than the next 3 countries put together!

American registrars ended the 2006 calendar year with 352,142 names, followed by Dutch and French registrars with 240,812 and 126,105 names respectively. Italy was 5th in this Top 10 tally of .eu names by country of registrar with 124,208 names, followed by Luxemburg (97,723), Great Britain (95,694), Australia (83,699), Denmark (74,623) and Canada (73,313).

Contrary to the registrant statistics, these numbers are more representative of the state of the registrar industry at the time than any actual .eu hunger from Internet users in different parts of the world.

You'd expect the countries with the highest numbers of registrars to be the ones with the most .eu names per registrar. Yet taking the same December 31, 2006, snapshot, America had the highest number of .eu registrars at 630, followed by Holland (181), Germany (155), Italy (75), Belgium (73), Austria (67), Great Britain (64), France (45), Sweden (39) and Spain (26) rounding off a Top 10 that read very differently from the .eu names by country of registrar hit parade.

Other factors were at play. For example, having one active registrar in a particular geography can make all the difference. Consider Luxemburg's place in the rankings. It's a small country, but it has one major retail registrar, EuroDNS, which worked hard to build up customer interest in the run-up to the .eu launch. Or Canada, whose 10th place probably owes a lot to the strength of wholesale registrar Tucows.

BANDWIDTH

But there are more obscure reasons for the discrepancies between the two rankings. As soon as it was announced, the .eu launch plan was scrutinised by registrars eager to optimise their strategy and claim the best names for their clients. In the domain business, four letters are constantly

used: FCFS, first come, first served. In other words, the first in the machine for a specific domain name gets it – and is the only one to get it. FCFS tends to turn new TLD launches into frantic races, in which there are no prizes for second place. If you don't win the race to secure the domain name you want, then you lose. Even if just a millisecond separates you from the guy in front.

One factor in getting to that all-important finish line first is the amount of bandwidth a registrar has with the registry. The more a registrar's computer systems can communicate with a registry's, the higher that registrar's chances of getting to the domain names it's after.

But if registrars were simply allowed to throw everything they have at a registry's systems, they would risk overloading it. The EURid crew had experienced that during the .be liberalisation, and they weren't about to risk another failed launch.

So they built in several protections.

One was that each accredited registrar was awarded a set number of access lines to the registry. Compare it to a TV quiz that you have to phone into. The question being asked is easy, so the determining factor isn't who knows the answer – it's who gets to give the answer first. Who can call fast enough to be first in the queue?

You can use one phone, or you can increase your chances by having family members call from several phones at the same time.

This is more or less what many registrars did. They set up subsidiaries just to increase the number of access lines they would be allowed into EURid's systems on launch day. That's why the 'highest number of .eu registrars' ranking shows America on top. This is not a reflection of the actual number of .eu registrars that were distinct companies at the time of the .eu launch. It's the number of companies set up just to open up extra lines to the registry!

EURid and the Commission had both seen this type of approach coming when they were working on the PPRs together. The question then had been: how to prevent this from happening – and why would you even try? Any rule designed to prevent 'families' of companies from seeking accreditation with EURid would be easily circumvented. The only realistic hurdle was the €10,000 pre-payment required from every accredited registrar. But obviously, that could also work as an advantage for the bigger players in the registrar industry, as they would be able to fund the multiple access lines to the EURid registration systems that smaller companies could not afford.

EQUAL FOOTING

With registrars, and their clients, ready to try almost anything to be first in line, the registry absolutely had to be neutral. 'Treat everyone the same' was the default. There couldn't be the slightest hint of a suspicion of favouritism. Even when it came to answering questions from registrars.

"We wanted everyone to have the same level of knowledge," says Peter Janssen. *"We absolutely wanted to prevent one registrar from knowing something that another wouldn't have thought of asking."*

Through the roadshows, meetings with registrars, e-mails, and direct conversations, EURid found itself on the receiving end of many astute questions. The people asking them were looking for some kind of edge over their competitors. And they were leaving no stone unturned.

"We had some registrars actually tell us they were tweaking the Linux[1] kernel[2] on a TCP/IP level to optimise their chances of getting their packets of data in at the right moment, i.e. first! Some names were considered to be high value, generic terms like 'football', 'startpage', and others. People thought those names would be worth a lot of money. And they were ready to invest the time and resources to improve their chances of getting those names."

But at the risk of irking the mad geniuses racking their brains to eke out the smallest of advantages come launch day, EURid was resolved to keep everyone on an equal footing. Everyone had to be educated in the same way by the registry. So any question asked by any registrar, EURid would publish the answer for everyone to see. Every accredited registrar was to have the same understanding of how the registration system worked, what the firewall rules were, how EURid would block connections to ensure one registrar did not get a bite at the .eu apple before another, how Janssen's team would count incoming packets to ensure the number of connections per second matched the limit they'd set…

"We tried to guarantee that we would give the same chances to all registrars, no matter where they came from, or what size they were," says Janssen. *"I think we were successful in that. We saw registrars sitting on very low bandwidth lines actually coming through at the same time as the heavy hitters that had gigabits of lines, especially during Landrush. We even saw one small registrar with a home connection link come in*

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[1] Linux is a widely used open-source operating system.

[2] The kernel is the core of a computer's operating system.

with the big players that had multiple gigabit connections, and he still completed his registrations!"

The back and forth between EURid and the registrars had another collateral benefit. Not only was it a good way to ensure that smaller registrars would have a chance against the larger players, and that all registrants could be confident of getting equal treatment, it also helped EURid 'stumble' across possible tech issues the registry might not have seen if it had just hunkered down in a silo and refused to discuss the system it was building with its sales network.

In a way, the .eu technical system was one of the very first examples of a successful crowdsourcing effort! According to the website that has become the poster child for crowdsourcing, Wikipedia, the term was only coined in 2005 … the year of the .eu Sunrise launch. History sometimes has a way with coincidence…

THE .EU HACKATHON

As EURid focused on creating an even playing field, registrars and registrants looked for ways of doing exactly the opposite. Registrars wanted to make their customers happy. Customers just wanted the names. One option for them was to place the same orders with multiple registrars.

"We'd gone to extreme lengths to ensure our customers would get the names they were after," explains Pierre Berecz – who was CEO of the French corporate registrar Indom in 2005, and who still works in the domain industry today – without going into the detail of what those measures were. *"Yet we knew, because some of them had actually told us, that we had customers who'd gone to other registrars with the same request for names they'd filed with us."*

EURid also heard of several German companies banding together to form a sort of 'registrar collective' with the rationale that more brains in the room might help come up with more effective strategies on launch day.

The registry did not get involved, but did listen hard. The roadshows were not just an opportunity to teach, but also to learn. They served as a forum for registrars to challenge the registry's decisions. Every phone conversation, every e-mail, every question was a chance for EURid to improve its state of readiness for the launch. In a way, it was a permanent hackathon with EURid's community helping it improve itself by testing the

flaws in its logic or systems.

Many times, researching registrar questions would lead EURid to find solutions to problems they hadn't even thought of.

PRECEDENTS

To meet the ambitious requirements the Commission rules laid out for .eu, and to withstand the collective pressure of registrars and registrants eager to be the first to .eu, Janssen and his team had to try to model features never implemented before. They also had to predict bugs and system incoherencies, and even abuse attempts.

Apart from their DNS BE experience, there wasn't much for the team to draw on. Looking at how previous launches were handled was not going to be of much help.

The .be liberalisation wasn't comparable, in scope or in mechanics. And the two previous major gTLD launches of the era, .biz and .info, also yielded lower registration volumes than .eu. However, they did provide some valuable insight into what to do – or rather, what not to do.

The .info Sunrise had started on July 25, 2001, ending just over a month later on August 27[IV]. A type of Landrush was then executed in September, whereby access to the .info registration system was opened to the general public (instead of being restricted to trademark holders as it was during the Sunrise) for specific periods of time.

The events of September 11, 2001 – when terrorists attacked New York's World Trade Center and the Pentagon in Washington DC, impacted .info's launch schedule. The registry choose to delay and fully open .info on October 1, 2001.

The scope of the .info Sunrise was far smaller than .eu's would turn out to be. Just over 50,000 names were registered, almost 7 times fewer than the number of .eu domains taken up during that TLD's Sunrise periods. After it had become available to all, not just trademark holders, it took .info more than a year to enter the millionaire club[V]. Dot eu, generated those kinds of numbers on the first day it opened for business!

For .biz, the trademark protection system wasn't even called a sunrise. It had a different name, and it worked in a different way. Dubbed 'IP Claims Service', it operated until August 6, 2001 by providing rights owners with

an opportunity to claim protection through a .biz accredited registrar. Registrants then had to submit an application request if they actually wanted the corresponding name. This had to be done before the end of the pre-application period on September 17. Then, on November 7, .biz opened for everyone.

The .biz launch was controversial, as the absence of a bona fide Sunrise and the use of a specific policy for challenging possible trademark infringements (the 'Startup Trademark Opposition Policy' – 'STOP') made for a complicated process. Once again, registration volumes were not in the same league as .eu's would be. After a full year of operation[VI], the .biz namespace held just under 850,000 names.

MAXIMUM PRESSURE

The .biz and .info launches had a profound and lasting impact on the domain industry, including .eu.

One consequence was that the Sunrise became the de-facto rights protection mechanism for new TLD launches. EURid and the Commission considered several different options, and significant differences were built into the .eu Sunrises, both as a result of the European Union's own specificities and the need for increased protections against scams or hacks.

For a time, auctions were considered as a way to resolve cases where multiple applicants had the same trademark – but they were viewed as being unfair. Not only would they favour the rich, they might also push applicants into spending more than they should for a domain.

"We looked at certain aspects of previous launches, such as .biz and .info, but actually the rules set by the Commission and the European Member States were such that it would be a first come, first served system and that was it," says Janssen. *"No lottery, no highest bidder… The only technical solution we could put in place was one in which the person that comes first gets the domain name, independent of whether its Sunrise or Landrush. We couldn't even consider anything outside of that narrow scope, because the rules said it was not allowed."*

Even then, clarity was needed on exactly what first come, first served means. As the PPRs were being drafted, with the inclusion of the requirement for documentary evidence to be submitted to back up an applicant's claim to a right, discussions centred on how to ensure fair and equal treatment

for all. The Commission did not control each country's postal services any more than EURid did – so how could you ensure that applicants would not be sidelined by an inefficient postal or courier service as they sent in their documents?

"We determined that the registration system itself would be the only fair tool for ascertaining which application had come in first," says Marc Van Wesemael. *"So that's where the queue had to be built. The processes of applying electronically and then of sending in documents had to be split, with the first come, first served principle applied to the electronic part only."*

With EURid's expertise to hand, the Commission was able to design PPRs that actually made sense come technical implementation time. When a specific modus operandi was suggested in meetings at the Commission, the EURid team would first take them back and check to ensure what was being discussed was actually doable. They might then come back with tweaks, and the Commission would adapt the draft PPRs accordingly. The iterative process was the hallmark of the .eu rulebook and helped both parties ensure a smoother and fairer process as compared to previous TLD launches.

But as the launch day loomed, there was still incredible pressure on everyone.

For an applicant, the .eu rules made getting in first vitally important. In the run up to the Sunrise, registrars came under increasing pressure from their clients to give them the best chances of acquiring the names they were after. *"EURid's instructions to us were quite clear: we were to process registration requests in the order in which we'd received them,"* recalls French registrar Indom's CEO Pierre Berecz. *"So we had our submission lists, but some clients offered us large amounts of money if we were to agree to push them to the top of those lists! We refused, but we heard rumours of other registrars selling off the best positions in their submission queues."*

At EURid, it was becoming obvious that D Day could potentially turn out to stand for Digital tsunami. *"The Sunrise's first come, first served rules meant that, potentially, we could expect huge pressure on our systems from the first microsecond, as people attempted to grab some of the most sought-after names,"* says Janssen. *"Also, we felt additional pressure for Sunrise 1 because we didn't know what to expect there. We did think Sunrise 2 would probably be heavier than Sunrise 1… and that the load would only go up another notch for Landrush… But we didn't have a choice. We had to handle it like this: we had a tunnel, everyone would go into the tunnel, and the one that came*

out first got the domain name."

EURid had predicted rather heavy demand for .eu when it launched, but as it turned out, even the most optimistic estimates fell short. Fortunately, the tech team had designed a system capable of handling much more load than they ever thought they would have to deal with.

SCARED AS HELL

So child's play, wasn't it? Just design a system sturdy enough to take anything that anyone can throw at it and that's it.

Not quite. Janssen and his team were working to create a computer system that would have to be accessible from all over the planet, handle loads they had no way of accurately predicting, allow functionalities that had never been supported by domain registration systems before, be up and running in record time, and, most importantly, not fail!

"Nobody had really done anything like this before which, frankly, scared the hell out of us. We were going into uncharted territory. And if it failed on the first day, starting again was not an option. We would be in deep trouble. Fortunately, we made the right choices, and it actually worked! But it wasn't just luck. We spent a lot of time trying to think like a registrar: what would a registrar do to try to optimise his chances?"

The single biggest issue to address was an attempt by anyone, whether it be a disgruntled registrar or a hacker on a mission, to derail the .eu launch. Doing so would have been quite easy. It's the most basic of computer hack strategies. Make sure EURid's systems would be kept too busy to actually do what they had been designed to. A registrar could try to swamp the line running from the Internet to EURid's systems with garbage, just to prevent anyone else from being able to access valuable bandwidth.

In theory, the counter measures were just as simple. *"We could either act on all the gateways in the world, which was not an option because we did not control all the ISPs in the world, or we could make our pipe so big that nobody could actually fill it,"* says Janssen. But in practice, there was nothing straightforward about these counter measures. At the time, the technology needed to execute them was definitely not run-of-the-mill.

EURid sought out an ISP[1] and asked about the biggest pipe they could possibly provide. But the bad traffic they would undoubtedly get hit with still

[1] Internet Service Provider

needed to be filtered out from the good. *"We had a gigabit line, so potentially we would have a gigabit of* SYN *packets*[1] *trying to get a connection,"* Janssen explains. *"One option: count the number of* SYN *packets per source* IP *address – this is essentially per registrar – and only allow X number of* SYN *packets per second. Fine, but you have to be able to do that in real-time. Remember, we're talking 2005. Router hardware that could filter a pipe that big in real-time was not that common then. These days, a one gigabit link is not that rare. But back then, it was a big pipe!"*

FIVE TIMES THE COST OF THE WHOLE SYSTEM!

The bigger the tunnel leading into EURid's systems, the harder it would be to intentionally clog up with massive amounts of bad data. So the size of the pipe mattered a great deal. It would certainly make a potential hacker's job harder of course, but it would also act as a deterrent. Just knowing the tunnel was that wide would probably discourage hackers looking for a good opportunity.

It's the same principle as chaining up your bike in the street. A really determined thief can always steal anything. But if you make a casual thief's job just a little bit harder, chances are he'll try the bike next to yours. The one that doesn't have a chain on it.

The question then became: does a pipe big enough to act as a deterrent against hack attempts even exist?

"It did exist," says Janssen. *"Cisco had some stuff. But the 'line cards' that would allow filtering of incoming traffic at that speed in real-time were custom-built back then. They were very expensive – 4 or 5 times the cost of every other piece of equipment we had. We couldn't afford them. Plus, after 4 months, once we'd launched, we wouldn't need them anymore…"*

The most viable solution was to rent. And because the equipment needed was so specific at the time, EURid ended up sourcing bits and pieces from all over Europe. Janssen still smiles when he remembers one of his team members driving to the ISP to get the cards. At the time, there were only 2 of these cards in the whole of Europe. They were far from cheap, and EURid needed both of them! *"After loading them in his car, my team member realised that*

[1] SYN stands for synchronisation packet. A SYN packet contains data used to allow two computers to connect remotely through a process called handshaking.

the value of what he was driving had now just doubled! The card was worth more than the car, and he wasn't driving a small car. It was a reasonably sized car from a German brand, quite expensive."

Getting the equipment was only part of the story. The next challenge was actually programming it to do what EURid needed it to do. Those capable of doing so were few and far between. Janssen eventually found someone in South Africa and had EURid's network specialist, Jan Jansen, set up regular phone calls with him.

The complexity of what was being attempted was intense. And compounded by the hard deadline at the end of EURid's tech team work programme. With only a few weeks to go before .eu was scheduled to go live, they tested the South African developed system … and it didn't work!

NO MORE SLEEP

Giving up simply wasn't an option. So everyone continued searching for the solution. Round the clock. No reprieve.

"By the time the Sunrise came, I had more or less given up driving home," Janssen recalls. *"Weeks before, I would drive home at something like 6 o'clock in the morning. I have an hour's drive. I would get home, have a shower, change clothes and just drive back! But by that time there was no longer any sense in doing that, so I got a hotel near the office and would spend a few hours sleeping in the hotel."*

In the last few days, Janssen wasn't even sleeping anymore. His daily routine would involve going to the hotel only to take a shower before going straight back to work. Stress levels were intense. The team did manage to get the system working, but everyone was obsessing about the grain of sand. That little detail they might have missed and which, come launch day, would bring the whole .eu machine to a grinding halt.

Until .eu actually started, there was just no way for the system's designers to know if they'd succeeded. Had they been thorough enough? What had they overlooked? Those questions were on everyone's mind as the time came to flick the switch and turn .eu on.

"*We opened at 11 o'clock on December 7, 2005,*" recalls Janssen, going into understatement mode. "*It was stressful.*"

FIRST NUMBERS ARE IN

In the run-up to the December 7, 2005 Sunrise 1 launch, registrars were looking for any possible edge to get at the precious .eu domain names that would soon be there for the taking. Yes, the registry was obligated to provide the same access to all, but was there a way to circumvent that?

Some registrars even asked where the EURid servers were physically located so that they could put their own computers as close as possible and try to gain precious travel time for the registration data they were going to send in. In computing terms, a few milliseconds can make a huge difference.

But EURid wasn't about to risk getting accused of favouritism.

A bailiff was asked to come in and follow the launch. It didn't matter that the official in question did not understand what EURid was doing. The important thing was that she could access the list of names being registered any time she wanted or needed to. A reporting system had been created with both paper and screen displays.

The bailiff could check the domain name lists by simply pushing a button and printing out a report listing the registrars and the number of domains each had registered at the precise moment she wanted to. That way, EURid could prove that every registrar had an equal chance and that the registrations were evenly distributed amongst them.

The bailiff's role was to certify that she had requested the report at the time she wanted it, and that it showed which registrar was registering which names. So she printed out reports at regular intervals and signed and stamped them. EURid still has the bailiff launch reports in its archives.

The reports, which were reviewed as part of the research undertaken for this book, show the run-up to the 11 o'clock Central European Time (CET) Sunrise 1 launch on December 7, 2005.

There are several entries, at 10:39, 10:56, 10:58… and even at 10:59:52… which all show only 2 names active in the .eu namespace. Nothing untoward there. Both names were EURid's own, and they had been used since .eu had been 'switched on' by ICANN in the spring of 2005.

The next report, the first one after the launch, has a time stamp of 11:31 and shows the first wave of names being registered.

At midday, one hour into Sunrise 1, EURid's systems had already recorded 83,645 successful applications.

In that first hour, there was an average of 1,757 transactions executed on EURid's systems per minute, with peaks of over 8,200 transactions.

Day 1 of Sunrise 1 closed with 104,665 applications. Public bodies were behind 8,161 of them, whilst 73,581 were supported by national trademarks, 22,244 by international or community trademarks, and 679 .eu domains were applied for on the basis of a geographical indicator or a designation of origin, such as those used in the wine industry.

ROCKET LAUNCH

More than 100,000 names being applied for on the first day was a tremendous result. Many had expected .eu to be big, but perhaps not quite that big. For some, the first day of .eu 'dealing' was a very, very big deal.

"That launch was like no other we've ever worked through, before or since," admits Berecz. *"We'd set up what can only be called a war room in one of our office's meeting rooms. We had tables grouped together in the centre, with computers on them. Those were our IT staff monitoring stations. We also had extra screens on the side so that everyone else could follow our registrations as they came in without getting in the way. It was like launching the space shuttle! Especially as we had a French TV camera crew filming the whole thing for that day's news flash*[VII]*."*

"Everyone was incredibly tense as 11 am loomed ever closer. We'd had over 5,000 applications, and our teams had worked for weeks to check every single trademark that was being claimed. Most registrars didn't bother doing this. They just took the registrations and left it to their customers to get the documentation right. But Indom was all about premium service."

"So as part of our standard .eu Sunrise package, our team brought both their legal and domain expertise to bear and made sure the customer had sent in the right supporting documentation. We even sent the documents in ourselves. That way we made sure they were formatted correctly and our customers were not at risk of having their application rejected because of an administrative error."

The Sunrise was a particularly strenuous time for registrars and registrants alike, due to the gruelling convolutions of the PPRs making it very hard for all to understand the exact process of submitting an application during these priority registration periods. More on that later...

"It really was a crazy busy time and the nearer we got to the Sunrise, the more frantic customers became," Berecz adds.

"The night before the December 7 launch, we'd received more than 200 last-minute applications. Those all had to be checked as well and put into the application queues, if it was still possible to do so. Crazy! The 11 am deadline came and went… we were all glued to the computer screens… for a moment nothing happened – and then the first confirmations started rolling in from EURid."

"I remember everyone started shouting and high-fiving each other. There was more loud celebrating when it was confirmed that we'd managed to get the domain total.eu for one of our clients, the major oil company Total."

"We expected names like that one – trademarks that were also widely used generic terms – to be the most difficult to get, because they would be so highly sought after by so many people. So when we got it, it was immensely rewarding. It was a recognition of all the work our sales, legal and IT *staff had done throughout 2005 to make sure our clients – mostly large corporates – knew about .eu sufficiently ahead of time and were able to secure those names that were important to their businesses."*

DIFFERENT TRADEMARK RULES

As one would expect for a registration period aimed solely at holders of rights such as trademarks, or specific entities such as public bodies, most names were applied for just once during the Sunrise phases.

But some names were the object of more than one request.

There were several possible reasons for this. As seen previously, some applicants put the same request through multiple registrars in the hope of improving their chances of getting the name. There were also cases were the same term was trademarked by different entities.

Trademarks are registered by 'class', a category system that helps pinpoint what the mark is for (there are classes for musical instruments, automobiles, even household appliances…). This means a company selling furniture can trademark a product name even if it is identical to another company's trademark that is used for, say, clothing.

The fact that trademarks have classes has always made them cohabit uneasily with the world of domains names, where a term can only have one occurrence. Contrary to a trademark, a domain name is unique. There cannot be two 'example.eu' domain names, but there can be two companies that have trademarked the term 'example' for their business.

So which one gets the domain name? Various systems have been tried

over the years, including auctions and lotteries, but the fairest and most neutral found so far is the one EURid used: the first to a name gets it. It works as long as there are strict safeguards in place to prevent anyone from 'jumping the queue'.

Technically, the .eu Sunrise launch worked perfectly. Registrars did enjoy equal access to the registry's systems, so it was up to them to get their registration requests in the quickest. The only problems came from some of the trademark registrations that were claimed. The trademarks had to be valid European ones – but there are many countries in Europe, and not all register marks in the same way. Benelux has a trademark registration system that was flexible enough to allow the process to be completed in time for the .eu Sunrise, leading to some registrations being made for 'generic' terms (i.e. terms that have common everyday uses like 'sex', 'hotel', 'travel' or even 'jobs').

These trademark registrations were perfectly valid under the .eu Sunrise rules, even though they were made with just one thing in mind: registering a .eu domain name. As it so happens, among the names with the highest number of applications during the Sunrise launch were sex.eu, hotel.eu, travel.eu and jobs.eu...

40 DAYS

So, how were multiple applications for the same name handled?

All Sunrise requests had to be backed up by documentation proving the applicant either had the right being claimed or was a public body. The applicant had 40 days to submit the documentation. Public bodies had a specific validation channel – called a Governmental Validation Point – whereby each of the European Union's Member States had designated an office to validate these requests for EURid.

For all other types of Sunrise applications, EURid had appointed a single validation agent: PricewaterhouseCoopers (PWC). The specifics of the validation process are discussed in a later chapter, but, at this stage, suffice it to say that PWC checked all first-line applications and, if they were found to be appropriate, the name was assigned to the requester.

But it could not yet be used. The domain name was held for an additional 40 days to give anyone wanting to challenge the validation agent's approval a chance to do so.

Only at the end of that period would EURid actually activate the name, which then became useable on the Internet just like any other address – to point to a website, form part of an e-mail address, and so on…

MORE TENSE THAN TENSE

If registrars and registrants were anxious for the launch to go well for them, they were all only concerned with a tiny part of the whole picture. From EURid's point of view, the launch was on another level of tension altogether.

To better monitor the launch, EURid set up in a special room, just like French registrar Indom had done. This 'operations room' was akin to the bridge of a large commercial ship. It had been arranged so that Janssen's team could monitor the launch as it happened and react instantly to any problems. Unfortunately, that also meant that anyone else who might be in the room at the time would also witness first-hand any problem that occurred.

"It didn't help our stress levels that our Chairman of the Board had decided to accept an invitation from our CEO to be in the Ops Room. We had our log files projected on the walls. We had cameras filming. There was the bailiff looking at what we were doing. We had all sorts of people in the room, and you could feel the stress. There was static electricity in the air."

Once the floodgates opened and the many registrars participating in the launch started to send in their orders, the log files would show each registration or update to the system as a line of code. At least, that was the theory.

"We had these log files opened, and obviously nothing was happening because the registration system wouldn't be open until 11 o'clock. But then, at 11 o'clock, nothing moved either! For what felt like 7 days, but in reality was probably only half a second, nothing happened."

"We were starting to panic. I could see it on my colleagues' faces. I saw them starting to type and try to understand what was happening. The guy that was monitoring the firewall and the router said that traffic was coming in normally. He could see stuff happening – millions of connection attempts – but nevertheless, there were no transactions on the system."

"We'd set up a very simple, high-level view that could show the official and the Chairman what was happening. Every line was a transaction. It would say 'new domain'

transaction, 'trade', 'contact'… Very simple to show and to explain. And this thing was not moving!"

Then the miracle happened, and the computer screens started filling up with lines. *"It started moving at such a pace that you could no longer make out the individual changes in the transaction lines. At that point, I've been told that I uttered an 'apparently it works'. I don't remember – but if that's true, it was the understatement of the year. It was an enormous relief."*

JOB DONE

There couldn't have been a better justification for those months of hard work by EURid's development team than that moment when nothing moved and everyone's heart stopped.

"At that point, we felt really lucky that we'd over-designed the system to such a large extent."

"What had actually happened in those first few milliseconds was that all of the registrars were trying to get in first with their TCP/IP connections, so that was just taking CPU[1] time. As there were literally thousands of connection attempts, the CPU on the EPP server that had to perform all these SSL[2] handshakes as the connection attempts were coming in, was doing that, and just that."

"Once the connection was there, the next thing the registrar would do is send an XML[3] message. The message would be 'create domain' or, for the Sunrise, 'apply domain'. Once these were in and being parsed by this very overloaded EPP server, which was still trying to deal with all these other connections coming in, it would start processing the message itself. Then it would go to the database to write a 'this is done' entry."

"The server was doing all this at very high speed, but it had to start somewhere and that split second where nothing happened cost me 5 years of my life! I thought my career was over. The system I'd designed didn't work. It had crashed. And furthermore, it would never work, and we would never get it going."

"Then it started working! I thought: OK, we've actually done our job and succeeded in doing what we had tried to do."

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[1] Central Processing Unit: a computer's engine.

[2] Secure Socket Layer: a cryptology protocol designed to transmit data safely from one computer to another. Websites use SSL when they go into 'secure mode' and display 'https' instead of just 'http' at the start of the URL.

[3] Extensible Markup Language: a language used to encode digital documents.

Soon, the time came to do it all again.

"Sunrise 1 was a huge adrenalin rush. Less so for Sunrise 2, because it was more of the same – or rather, less of the same, because there were fewer applications in Sunrise 2. We had envisaged the load being higher, but we didn't expect it to be considerably so, because we'd seen that people had managed to get trademarks to request all the nice popular names in Sunrise 1. So Sunrise 2 was more of the same, and again it worked."

APRIL SHOWERS

The first four months of .eu were intense. And at times, for corporate registrars like Indom, they were even wild. But the real rush was still to come. The moment when .eu would become available to all: 11 o'clock in the morning, Brussels time, on April 7, 2006.

Sunrise 1 had provided a good inkling of what EURid could expect. In those first 2 months, there were 181,306 applications, for a total of 131,662 unique names. EURid's systems were set to operate with millisecond precision so that a strict first-come, first-served order could be maintained as registrars rushed their orders in.

Sunrise 2 yielded similar results so that, by the end of the 2-phase Sunrise period, EURid had received 346,218 applications for 245,908 unique names. Never before had any Sunrise launch for any TLD yielded such numbers. The European domain had gotten off to a flying start!

Then the floodgates really opened.

"Then Landrush came, and we no longer had anything to prove," says Janssen. *"But, of course, when you looked at something like .de with several million domains registered, we could still expect a sizeable number of registration attempts during our Landrush. So stress levels were still high."*

Hearts were still pounding as 11 o'clock came on April 7, 2006, but Janssen and his team were also beginning to get used to surprises as each new phase opened. Plus, they'd now had two successful start-ups, so they were probably a little better equipped to deal with tense situations. Which was fortunate because, this time, .eu was about to blow past all previous registration records.

"We experienced the same thing for Landrush. The system stood still, long after the 11 o'clock start time. So again we thought we were in trouble. And then again it started moving. But this time even faster. There were now even more registrars trying to get in, as

more had requested accreditation for this Landrush phase."

The first name registered during General Availability was exhibitionist.eu (timestamp 11:00:03.436), followed by dekoration.eu ('decoration' in German) at 11:00:03.441, buchung.eu (11:00:03.441), eurorechner.eu (11:00:03.445), and bausparvertrag.eu at timestamp 11:00:03.447.

The next 4 hours were a whirlwind during which EURid's systems processed 76 .eu registrations every second, with peaks of 140!

When the day closed, the domain name world record had been set: more than 1 million domain names registered in the first 13 hours of a registry's operation.

2 MILLION AND COUNTING

As June 2006 ended, the 2 millionth .eu name was registered. This was also the time when some of the names that had been blocked after the Sunrise started to be made available again. Remember that applying during the Sunrise phase wasn't enough to secure a .eu domain. Applicants then had to prove they had the right to the name that they claimed to have – be it a trademark or any other kind of right covered by one of the two Sunrise phases.

But supporting documentation was not always sent in, or it was not what was needed to secure the name. In some cases, *everyone* that had applied for the same name failed to prove their right.

So, just as a fisherman will throw some fish back into the sea if they are unsuited for immediate consumption, EURid put the uncontested 'failed' Sunrise names back in the pool. Starting with 56,086 of them in June 2006, up until January 2007, over 100,000 of these Sunrise names were unblocked and once again made available to all.

There was considerable interest in these 'mini-Landrushes', but then there was interest in anything .eu-related in that first year. They proved to be most popular in Germany, traditionally a very strong market for Internet addresses. By the end of 2006, Germans had registered 760,960 .eu names. Britons were the second most prolific registrants, with 427,230 names, followed by the Dutch (299,095), the French (153,506), and the Italians (141,096).

More registrars – especially ones that were coming in at this final stage of the launch programme and, therefore, were perhaps not quite as well informed about how the .eu registration system worked – meant potentially more problems.

One issue was a side effect of the safeguard Janssen's people built in to shield their system from being overloaded. *"To protect against 'denial of service' attacks from people who might want to kill the Landrush phase by sending us zillions of packets, we'd said that, when a packet came in from an IP address that we didn't know, we would just throw it away."*

For that to work, there had to be a way to authorise registrars so that their legitimate traffic would be allowed in.

"Registrars were allowed to request up to 5 unique IP addresses that they would then use to connect from. And we got our ISP to throw away unidentified packets as soon as possible – i.e. on the border gateways on the ISP's network. That meant we wouldn't even see those packets. They would be killed a long time before they ever reached us."

Obviously, this methodology required that the list of approved IP addresses be closed at a certain moment. If it were left open, there would be no point in having a list at all. A given registrar would then be able to send in all its registration requests and then add a new IP address to swamp EURid with. Also, setting a clear point in time when the list would be closed would compel registrars to get their IP approval requests in early, so that EURid tech team members would not have to be adding IP addresses right up until the launch – a time when they really would need to be concentrating on other things, like the launch itself…

"We had a few registrars sign up just days before the launch. We'd said we would freeze the IP addresses, because configuring them requires synching all the gateways and the filtering lists. So we'd said that, at a certain moment… a few days… before the Landrush, we'd freeze the list. If your IP address update wasn't in before that time, it wouldn't get in for Landrush."

"We had a few registrars that were late. They registered their IP address in our system, but it didn't get propagated through the gateways. That's what we had said would happen after the cut-off. They wouldn't be added. So, when they tried to connect, they would just get dropped packets."

Despite running the IP list as advertised, EURid was now having to

deal with registrars very unhappy at not being able to participate in the Landrush phase. And some of them had a large number of names to register. Might there be a way to clock those names and satisfy those registrars that, although late to the Landrush party, still wanted in?

"On that first day of Landrush, at some point in the afternoon, we started seeing traffic levels drop off. Several registrars had finished all their names and therefore stopped sending requests in. We debated this and decided that we would do a controlled shut-down of the system, communicate that to the registrars, update the firewall rules with the latest list of IP addresses and tell registrars that they could register IP addresses up until that point. Finally, we would bring the system back up. That way, those late registrars would be able to connect after all."

Following a plan is good. But the real test of a team is how it handles the unexpected. The easiest way to deal with tardy registrars would have been to just stick to the plan. Yes, they would have been furious at not being able to participate in the early stages of the Landrush. But Janssen's team would not have been taking the significant risk of changing the rules and procedures at the last minute.

Yet, by not playing it safe, they managed to include everyone in the launch. This was not a decision taken lightly, especially considering the potential knock-on effects.

"We hadn't expected to have to do that, but it was something we managed to solve on the fly. Situations like this are also what made this process interesting. You start to get phone calls… e-mails… And you have to take a decision under pressure. If you wait until the end of the day, it's all over. So you're choosing between pest and cholera, as the Germans say."

"If we hadn't done anything, these registrars would have been angry. If we did something, then we needed to guarantee the first come, first served principle. That meant taking the system down, which wasn't communicated ahead of time, so we could only provide an hour or two of warning. So some registrars wouldn't know, which would have a knock-on effect on support…"

PROPERTY DEVELOPERS

Most people were satisfied with owning just the one name, but some put together quite a collection. In 2006, the business of 'domaining' – or trading in new and pre-registered domain names – was flourishing.

Domainers make money with virtual real estate in much the same way as landlords develop property.

They may buy high-value domains (like generic terms) to resell, or they may go for names that are less difficult to secure, and 'grow' them over a longer period of time by putting content behind them through websites, and then selling advertising space on those sites. The same way a landlord might buy a prime location property to do up and resell or, instead, look for a longer-term return on his investment by renting the property out.

Domainers went after .eu names just like everyone else, only more of them. After a full calendar year of operation, EURid's database showed that 6 entities had each registered over 10,000 domains! 1,257 entities had between 100 and 999 domains; 64 between 1,000 and 4,999 names; whilst 18 entities had over 5,000 but less than 10,000 domains.

At the other end of the scale, 610,679 people had 'only' one .eu, and another 115,543 people had 2 domains.

Because 69.9% of .eu registrants were companies, these high numbers of domains per registrant are perhaps a little less surprising than they appear at first glance. Traditionally, companies are holders of larger portfolios of domain names than individuals, as they work to protect their various trademarks, trade names and other key terms on the Internet.

STRONG RENEWALS

Getting off to a flying start is good, but maintaining that performance over the long-term is better.

Registration volumes is not the domain industry's only measure of a TLD's success. Other metrics, such as actual use of domains (e.g. linking names to live websites) or renewal rates, also provide valid indications of a suffix's real worth.

2006 had closed with 2,444,947 .eu names on EURid's books. No one had expected such a strong showing.

But what about renewals?

In the first half of 2007, the names registered during the previous 12 months started expiring. A year earlier, more than 1.6 million names had been registered in April alone. Add to that the over 250,000 names snatched up during the Sunrise phases, and the potential for a sharp drop in total

registration volumes by mid-2007 was high.

Would .eu turn out to be more flash-in-the-pan than here-to-stay?

Throughout 2007, the monthly renewal rate stayed above 80%. Europe's TLD was definitely not a 'one hit wonder'.

As 2007 ended, the numbers continued to be excellent. The year closed with 2,720,326 domains, an 11.26% increase year-on-year. That's an average of 2,052 additional registrations every day!

Quod erat demonstrandum.

Europe's powers-that-be had been right to push for the creation of a specific Internet country code for the continent. The demand was there. Europe's businesses and citizens had immediately adopted .eu as a tool to boost their Internet presence worldwide.

".eu is a powerful way for us to say who we are and what we stand for," Italian financial house UniCredit[VIII] told EURid as it registered unicreditgroup.eu. *"The domain helps make our website more visible to search engines and is the perfect illustration of the cross-border nature of our services, which is essential in the corporate and investment banking industries. To us, .eu says best in Europe, and best of Europe."*

SETTING, AND SHARING, THE STANDARD

As the biggest TLD launch ever, .eu was truly a daring endeavour. Attempting it might have taken raw nerve, and even a degree of folly, but pulling it off required expertise and strict process management.

Perhaps it also required a 'Belgian approach'. Modest but determined. Hard-working but open to collaborating with others in a communal approach. Aware of the responsibility thrust upon their shoulders, yet able to remain focused on their objective. All character traits that helped the EURid team succeed in setting a historical precedent for the Internet's naming system.

The sheer scope of the .eu launch has made EURid a technical benchmark for the domain industry. Thanks to ICANN's new gTLD programme, there are now more suffixes on the Internet than ever before. A lot more. Many have looked at what EURid did and have drawn inspiration from it. Some have even approached Europe's registry to discuss what it did to engineer a launch of this magnitude, and how it did it.

"Everybody looked at what was done on .eu," says Peter Janssen. *"They saw that we survived in the face of huge loads, and they were eager to learn and to make sure*

they wouldn't make any fatal mistakes for their own TLD *launches. We always cooperated and explained what we did. But it's also true that nobody else has really needed what we had because, after .eu, all the other launches have been several factors lower in terms of volume."*

The team's approach has always been to readily share their knowledge. Another Belgian trait that some might find surprising. But to EURid, there are far more upsides to telling people what they've found works, or what doesn't.

"By telling them, we stand to gain goodwill from others who can learn from our experience," says Janssen. *"Plus, we didn't invent anything that nobody else in the world couldn't have done. It was just huge amounts of energy, resources and expertise that went into making it work. We also had a bit of luck, but it was mostly hard work by a lot of good people – so why not share it?"*

PUSHING THE REGISTRY SYSTEMS TO NEW HEIGHTS

As EURid has grown, so have its technical teams and systems. At first, the focus was on structuring a fledgling development team to handle the biggest launch in Internet domain history. So how do you do that?

In the run up to the launch, the development team was around 7 or 8 people, and the core operations team was Janssen and 2 operations people, Jan Jansen and Geert Debyser. Their job was to monitor the system and keep it running. One sat with Janssen in the operations room, and the other drew the short straw! He had to be physically in the datacentre.

Sitting on the floor in a very cold server room (usually kept around 14° or 15° Celsius to protect the computer machinery they house), cross-legged with a laptop on his lap, was not the best way to go through both the Sunrise and Landrush phases. But it had to be done. The systems had to be constantly monitored; and as a supplemental safeguard, if the EURid control room ever lost connection, someone physically in the server room could still run the system by communicating over the phone and working on the machines directly.

Today, the EURid operations team has 5 FTE (Full Time Equivalent) and 2 part-time employees that do specific tasks like storage or database administration. There are 10 people on the development side. Their tasks include testing and acceptance testing.

With Sunrise and Landrush now a decade in the past, and EURid settled into the day-to-day rhythm of a fully functional registry, the size of the development team might come as a surprise. But, contrary to what might be expected, it's a group of very busy people.

Just because they've successfully brought a suffix to the Internet doesn't mean registries can afford to rest on their laurels. New ideas are constantly being considered. The sales team will want to try special promotions. If approved, these may impact the registration systems. So the tech team must stay abreast of these developments. Plus, it also wants to try new functionalities or to optimise existing registry functions.

"We think that if you want to stay relevant as a registry, you have to make sure your registrars keep you in mind," says Janssen. *"So you must have ways of attracting their attention. It might be financial gains, it could be marketing actions… Whatever it is, most of these things will ultimately have an impact on the registration system. Because the price changes, because registrars get something extra… Even if it's just reporting on the secure registrar website, it's still something that needs development."*

As .eu has evolved, so has the complexity of the systems that keep it running. To the point that even small changes require comprehensive impact-proofing to ensure they do not cause unwanted alterations somewhere else in the .eu registration chain.

The world has also changed since .eu first came out. Security concerns have taken a front seat. Computer attacks are everyday occurrences. So EURid has to bolster its own infrastructure and make itself ever more robust. The knock-on effect is that the technicians have to be better-trained and more expert. Any development work they do must be checked even more thoroughly.

Full redundancy has to be built-in everywhere. If one database crashes anywhere in the system, a back-up must be ready to take over. That means synchronising all the live parts of the system with themselves, but also all the back-ups with both themselves and the live systems.

Standing still is not an option with computer systems. With user appetites for power, speed and functionalities on a never-ending exponential growth curve, constant hardware and software upgrades are necessary just to keep up.

Sometimes more in-depth redesigns are called for, as existing systems become more of a hindrance than an asset. The DOS to Windows situation

faced by Microsoft is the perfect example of an antiquated core dictating limitations to a modern system.

Microsoft has worked for years to reduce the impact of its operating system's DOS origins on its latest generations of code. Given the size of the challenge, the company's done a pretty good job. But had it been possible, throwing everything away and starting again from a clean sheet would have been the far better solution.

At EURid, that's exactly what was done.

The .eu registration system as it was when it went live for the Sunrise and Landrush phases in 2005 is actually regarded as the registry's 3rd generation system. That's because, going right back to its .be predecessor, it had almost 10 years of history in terms of network and software architecture.

"The .be system itself was a complete rewrite of a previous system, which .be had used for the liberalisation back in 2000," says Janssen. *"Back then, we used the* PERL[IX] *language with a* MYSQL[X] *database. We then built up using C++*[XI] *and Oracle*[XII] *as a database. And for .eu, we decided to go with Java*[XIII]*."*

Although fully fit-for-purpose in 2005, and benefitting from years of development and real-world customer experience, EURid's registration system was becoming harder and harder to maintain and extend. Moreover, the license allowing EURid to use the DNS BE base would expire in October 2014.

So, in 2013, EURid decided to do a complete rewrite. They did away with all the legacy code and only kept the data that was in the registration system. Obviously, all the business rules that had been defined over the years were kept intact, but on the technical level the registration system was redesigned from scratch.

EURid went live with the new system in September 2014. During a weekend, all the registration data was transferred over and the new system was brought online. When EURid opened for business on the following Monday, the system it was running did not have a single line of code carried over from the previous one. Peter Janssen feels EURid's current system is *"lean, mean and ready for the next 10 years"* – whatever the challenges the registry might face to push .eu ever forward.

The satisfaction of a launch well done doesn't stop Janssen from pursuing continuous excellence for .eu. One way of doing that is staying up-to-date technically. Another is anticipating new trends.

Developments like Internationalised Domain Names. IDNs require new technical standards to upgrade an Internet that was originally designed to function in only one language and equip it to handle multiple languages and character sets.

"When you look at things like IDNs, we really have no choice. These things become standardised by IETF[1], the world moves on, and you have no choice but to follow. So, we implemented the IDNA 2003[2] standard quite some time ago, and then the IDNA 2008[XIV] *standard in September last year – because, moving from one to the other, some more characters get supported, so you have to add them."*

As with most situations faced by EURid, .eu's specific role as the domain of the whole European Union, including all 24 official languages[XV], means a unique set of problems to solve. The question of IDNs at the second level – i.e. to the left of the .eu part of the Internet address – has become mainstream enough to be easily manageable. But for EURid, that's not where the real challenge lies.

"Right now, the situation is that someone can have a .eu domain name in Cyrillic but the TLD stays in Latin characters," says Janssen. *"But for me, IDNs only make sense if the whole address is internationalised."*

That's where the real problems start.

"Getting there – i.e. IDNs at the top level – is a challenge at the administrative level as well as at the technical level. For one thing, you have to decide what to do with the .eu names we already have in Greek and Cyrillic[3] once the TLD becomes available in those scripts. Will the existing IDN .eu names automatically be moved to the new IDN TLDs?"

"There are a lot of decisions to be made, and, once you've made them, you have to build the system that will allow you to do the phase-over from one to the other. So these

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[1] The Internet Engineering Task Force determines how the Internet's insides should work by drafting technical standards through documents called Requests For Comments or RFCs: https://www.ietf.org/

[2] A set of IETF RFCs to lay out how non-Latin characters should be handled in Internet addresses: http://unicode.org/reports/tr46/#IDNA2003

[3] Domains using IDNs at the second level but with the Latin 'eu' as a TLD.

are the challenges that we're facing, always driven by business decisions or, in some cases, governmental decisions."

It's when the latter starts to trump the former that EURid's Technical Director gets really worried.

"Take DNSSEC[1] *for example. Basically, this technology allows you to guarantee that someone is going to the intended website instead of some spoof of the site. But these things are hard to do in a registration system because it impacts our core business."*

"At DNS *level, that core business is making sure all .eu domains names work 24/7, all year round. To do that, we have computers called "name servers" everywhere.* DNSSEC *has a major impact on that. Just adding the* DNSSEC *data is not complex, but it means that we're adding something extra to the .eu zone which may break things. Get it wrong and you break .eu. And that's something we just can't afford to do!"*

"These projects are actually hard to do. DNSSEC *is a classic example in which most, if not all, of a registry's departments will be involved:* R&D*, development, marketing, finance and operations. The reason for that is that your whole zone will change – it will increase."*

"Our first estimates were an increase of 7 to 10 times, and they proved to be correct. So you have to make sure that, as the zonefile gets bigger, it still gets transferred when it needs to be, that your nameservers can cope with it and have enough RAM[2] *to do it… Some of our name servers are hosted by third parties, so we have to talk to them to make sure they know what is coming, that they can cope with it and are compatible with these changes. We have to do this planning, we're making sure things will work."*

MORE CHAMPAGNE!

Unrelenting planning and an obsession with making sure things actually function the way they should is what allowed Janssen and his team to deliver on one of the most ambitious TLD projects ever. That and an ability to execute rather than spend too long second-guessing their own decisions.

Many a technical project has failed because the people behind it were more focused on making sure everything was perfect than on taking that bold step from development to the operational stage. Improvements are

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[1] DNS Security Extensions is a signing technology designed to prevent malicious abuse of the Internet's Domain Name System: https://www.icann.org/resources/pages/dnssec-qaa-2014-01-29-en

[2] Random Access Memory: a type of computer data storage.

always possible, but success also requires a no-nonsense commitment to meeting deadlines.

"There are lots of little things we could have done differently," Janssen admits. *"More communication – even more – with the registrars would probably have been better. Even though it wouldn't have solved all the issues, because we would still have had some registrars come in late and then be angry at not being able to participate in the Sunrise or the Landrush…"*

"But overall, it was a success. And when something's a success, why change it? Maybe just a bigger bottle of champagne at the end of the launch would have been nice…"

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CHAPTER 8

Too big to fail

Unprecedented success. That was the .eu Sunrise launch. But behind the impressive registration numbers, there was a frighteningly complicated rulebook.

Ten years after .eu launched, domain consumers and professionals may be starting to come to grips with the complexities often forced upon them. But in 2005, that certainly wasn't the case.

Major launches were still new. The people designing them still relatively inexperienced. And there wasn't much by way of historical precedent to base any fine-tuning on. In fact, many of today's precedents were set by .eu and the people who made that launch work.

Especially the Sunrise. With the two Sunrise phases requiring applicants to meet certain criteria, a mechanism was needed to ensure each and every single domain name request could be validated. A way of checking that an applicant claiming a certain right on a .eu name actually had that right.

When the PPRs were published in 2004, the Commission's expectations for the Sunrise were clear. Article 14 opened thus: *"All claims for prior rights under Article 10(1) and (2) must be verifiable by documentary evidence which demonstrates the right under the law by virtue of which it exists."*

A DAUNTING TASK

What organisation would be sturdy enough to take on a validation project of this magnitude?

You'd expect many to jump at the chance. The financial rewards alone looked motivational enough. If .eu turned out to be the success many were

forecasting, the proceeds from validating every Sunrise application could be quite substantial.

There was also the prestige aspect. Reputations could be made on successfully completing such a far-reaching validation assignment.

Made or destroyed.

Before the Sunrise actually started and .eu domains became an Internet reality, it was difficult to predict how many names would be requested, either during the priority registration periods or in the subsequent months and years.

At that point, the number of names to be validated was an unknown quantity. But even a cursory read of the PPRs showed that, whatever the numbers, it would not be an easy task.

As EURid began pondering the mechanics of the Sunrise, there was a persistent worry that having only one validation agent would be a big risk. Not only did the amount of validation work promise to be intense but there was also a time factor to be considered. Prospective .eu owners couldn't wait years for their Sunrise applications to be checked. Factor in the language requirements, as rights from all over Europe had to be considered with an equal level of expertise by whomever would be validating them, and the task at hand really starts to look too big for one agent alone.

Article 13 of the PPRs introduced the solution EURid and the Commission had arrived at. Entitled 'Selection of validation agents', it was clear in its use of the plural and instructions on how the work would be better split amongst several entities. *"Validation agents shall be legal persons established within the territory of the Community. Validation agents shall be reputable bodies with appropriate expertise. The Registry shall select the validation agents in an objective, transparent and non-discriminatory manner, ensuring the widest possible geographical diversity. The Registry shall require the validation agent to execute the validation in an objective, transparent and non-discriminatory manner."*

Considering the frightening levels of complexity that the Public Policy Rules managed to cram into a few short paragraphs, finding the suitable *"reputable bodies with appropriate expertise"* was not going to be easy. Article 14 provided details of the tasks to be executed. No doubt about it: there were some tough times ahead for whomever would be 'lucky' enough to take on this challenge.

First of all, Sunrise applicants would be expected to prove the right they were claiming. That in itself was nothing special, except that the proof would have to be sent in as documentary evidence.

Yes, that's right: applicants would be asked to gather paperwork and actually send it to the validation agent!

"Every applicant shall submit documentary evidence that shows that he or she is the holder of the prior right claimed on the name in question. The documentary evidence shall be submitted to a validation agent indicated by the Registry. The applicant shall submit the evidence in such a way that it shall be received by the validation agent within forty days from the submission of the application for the domain name. If the documentary evidence has not been received by this deadline, the application for the domain name shall be rejected."

Any name requested would be taken out of circulation by EURid, but not given to the requestor until the validation process had run its course: *"The Registry, upon receipt of the application, shall block the domain name in question until validation has taken place or until the deadline passes for receipt of documentation. If the Registry receives more than one claim for the same domain during the phased registration period, applications shall be dealt with in strict chronological order."*

To add to the fun, rather than validating all requests for a particular domain name, the rules introduced a notion that would impact IT development for the validation agent and EURid: a first come, first served Sunrise. *"Validation agents shall examine applications for any particular domain name in the order in which the application was received at the Registry."*

"The relevant validation agent shall examine whether the applicant that is first in line to be assessed for a domain name and that has submitted the documentary evidence before the deadline has prior rights on the name."

"This examination of each claim in chronological order of receipt shall be followed until a claim is found for which prior rights on the name in question are confirmed by a validation agent."

"The Registry shall register the domain name, on the first come first served basis, if it finds that the applicant has demonstrated a prior right."

Cherry on top: Article 14 even made sure everyone would have the means to follow the Sunrise process. And claim against it, if necessary. *"The Registry shall make available a database containing information about the domain names*

applied for under the procedure for phased registration, the applicants, the Registrar that submitted the application, the deadline for submission of validation documents, and subsequent claims on the names."

Working with the Commission throughout the inception of the Sunrise process, EURid had suggested this because it understood how important guaranteeing transparency would be to bolster .eu's credibility in the face of inevitable post-Sunrise criticism.

There was also a practical aspect to ensuring the process was as open as it could be. With so many different prior rights eligible under .eu's Sunrise rules, asking the validation agent to track down all of them was like travelling faster than the speed of light: impossible. But get the registrant to define the right being claimed instead, and you shift that burden from the validator to the requestor.

There would always be those for which the Sunrise results would disappoint. The malcontents would find it easier to blame the process, or the operator, than to question their own handling of their .eu domain name applications. In such cases, being able to point to a completely open process would play in .eu's favour.

GIANT

EURid became a standalone organisation in March 2003, when it was incorporated under Belgian law. The following month, EURid was named the winner of the European Commission's tender process to select an operator for .eu.

Following the demise of Arthur Andersen in 2002 in the wake of the Enron scandal, there were 4 major audit firms seemingly capable of taking on the .eu validation project: Deloitte, KPMG, Ernst & Young, and PricewaterhouseCoopers (PWC).

In May, EURid began serious discussions with some of them. A call for expressions of interest went out. The big boys weren't the only ones to respond. A total of 6 bids came in. Each one was asked to present to EURid. Given the importance of the task to .eu's long-term success, a Commission representative was also in attendance.

The candidates were impressive, but ticking all the boxes was not easy. For example, validating .eu required expertise in the field of Intellectual

Property for which Deloitte did not feel strong enough. Ernst & Young partnered with the firm Compumark[1], but how to handle all the types of rights, in all the necessary jurisdictions?

In the end, PWC offered the best fit. It was (and still is) a giant in the field of providing professional services such as tax advice, auditing and assurance. The group spans more than 150 countries and has offices in more than 770 cities. For the fiscal year (FY) 2014, it reported US$34 billion of global revenue and employed 195,433 people worldwide[1].

Marc Van Wesemael already knew one of the PWC team members, Bart Lieben. At DNS BE, he'd been looking for an effective process to capture the concerns of trademark owners and had reached out to Cepani, the Belgian organisation that deals with .be domain disputes. At the time, Lieben was a panellist at Cepani and had drafted a substantial part of the .be Alternative Dispute Resolution rules.

Lieben is a seasoned lawyer who has helped launch an impressive number of TLDs since working on .eu. A Flemish Belgian, like Van Wesemael, Lieben has a law degree and a master's in business law from Antwerp University. He also has master's degrees in intellectual property law and corporate law from the University of Leuven. Today, he lectures in Antwerp University's law faculty and is a professor at the University of Alicante in Spain.

ADVICE, ALGORITHMS AND ASPIRIN

The PPRs called for validation agents. However, more than one agent meant increased costs, complexity and, quite probably, a management headache for EURid.

EURid had already explored the multiple agent option to some extent. An algorithm had even been devised to allocate applications between agents in a non-discriminatory manner and optimise load management across the available validation resources.

The work had to be shared equally. No agent should be seen to be receiving preferential treatment. Plus, there would be no point in having multiple agents if some remained under-utilised through poor allocation of validation cases.

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[1] Acquired by Thomson Reuters in 1986: http://trademarks.thomsonreuters.com/?cid=175

The more EURid looked at this, the more obvious it became that sharing the validation work between agents just wasn't going to work. Plus, PwC looked capable of taking on the .eu validation effort by itself. The firm's reputation was solid. True, betting the house on one agent did not leave any room for any kind of upset, but choosing this strategy made a lot of sense as far as consistency was concerned.

Multiple agents meant multiple processes and teams inside different companies, each with its own internal cultures and procedures. This would increase the likelihood of seeing the same type of validation issue handled differently depending on the agent.

And time was running out.

Around a year before the December 7, 2005 Sunrise 1 launch date, the multiple agent scenario was shelved for good.

Lieben clearly remembers the moment. *"It was a Thursday evening, around 5pm. I remember it like it was yesterday. Marc calls me and says: we have a Board meeting tomorrow, we're thinking of switching from 2 validation agents to 1, could you send me an offer to do this where you would be the single validation agent?"*

For Bart Lieben's PwC team, what followed was a frantic less-than-24 hours of trying to get all the different PwC firms to align and coalesce. Like most audit powerhouses, PwC is an ensemble of many offices. Each has its own specific talents or preferred areas of expertise. This ability to pool such far-ranging resources is what made PwC a good candidate for the .eu validation agent in the first place.

But this organisation also meant Lieben could not speak for all the different PwC partnerships directly. He had to get them all to commit to the .eu work. His team worked all night to do so. The next day, 10 minutes before the EURid Board meeting, Lieben had a green light.

The hard part was not getting the customer to choose them – it was providing EURid with a sound proposal, including a realistic price estimate. As soon as that was done, PwC did not have to wait too long for the customer to get back to them.

"*That evening,*" smiles Lieben. "*We got the confirmation that we'd been selected as the validation agent for .eu. There was one exception: domain names that PwC would request themselves during the Sunrise process.*"

Obviously, having PwC validate its own Sunrise applications would have been a major conflict of interest. Therefore, the registry appointed the law firm Allen & Overy to validate any Sunrise name requested by PwC.

PWC was confirmed as .eu's main validation agent in March 2005. Straight away, Bart Lieben and the PWC team started working on the validation process itself and on making sure people understood what the .eu Sunrise process was all about.

In presentations made as part of the .eu roadshows in 2005, PWC was described as having in-depth Intellectual Property Rights expertise, efficient validation methodologies, multilingual skills encompassing all 20 (at the time) EU languages, and a presence in all the Member States.

This rationale for EURid's choice of validation agent did not tell the whole story. The truth was, with the PPRs the way they were written, and the uncertainty around the number of Sunrise applications that would come in, only a juggernaut could hope to pull this off.

"*We didn't know how big this project was going to be,*" Lieben confirms. "*There had never been a launch of this magnitude or level of complexity. So there was a risk to this. The project required a significant investment. Just taking the technical platform that we put in place for this at PWC – and this was a decade ago now – I think the cost was close to €1 million!*"

"*This was an investment that we had to recoup from €40 validation missions. I was lucky to have a few people inside PWC who backed the project and who saw it as a good way of positioning the organisation and the brand. Without that support, we would have been unable to even apply.*"

The fact that PWC management took a chance on doing .eu in the first place is actually surprising.

"*It was one of the biggest projects that had been undertaken by PWC in Europe at the time,*" confirms Lieben, whose efforts to get his firm on board were just as impressive as the complexity of the task that lay ahead. "*Getting PWC to agree to do this was a year and a half of work in itself.*"

The potential costs were huge. At the height of the validation rush, PWC's .eu team grew to a total size of 120 people. And the revenue was hardwired at €40 per trademark validation and €80 for any other type of right.

So the problem statement was simple: get enough people to apply … or tank!

"*All of those costs needed to be covered by validations. No advances were made to PWC by EURid or anybody else. The project needed to be self-supporting. So there was a*

huge risk involved because we didn't know what we were going to get. It ended up being a good project for PWC *because we got those 346,218 applications."*

Making the project financially viable for PWC was even more of a problem than those numbers suggest, as not all applications sent in meant a fee for the agent. PWC could only charge if there was actual validation work to be done. When several applications came in for the same domain name, those lower down the list tended not to bother sending in their documents at all. So no fee for PWC there.

Even if the applicant did submit documents, but someone else got the name before him, there would be no validation work done on his request. Again, no fee for PWC.

Nevertheless, the numbers ended up being large enough to make the .eu validation project financially rewarding. But no one could have predicted such high volumes in the latter part of 2004. That's actually not quite true. One man came pretty close. *"My estimate was 350,000,"* boasts Lieben. *"So I was just 4,000 off the mark."*

How could he have come so close? That must have taken a pretty powerful crystal ball... Or careful attention to detail. Lieben left no stone unturned in his drive to provide his PWC bosses with accurate estimates upon which to base their decision to approve the .eu validation project.

He looked at the two most recent and relevant launches, .biz and .info. He also talked to as many experts as he could. He had frequent conversations with the International Trademark Association (INTA)[II], the European Communities Trade Mark Association (ECTA)[III], the Association of European Trade Mark Owners (MARQUES)[IV] and the European Brands Association (AIM)[V].

The first thing Lieben observed was just how important marketing was. *"If you looked at the .biz and .info launches from a marketing perspective, they were pretty isolated. Those* TLDS *had basically appeared out of thin air. There had been no ramp up. So when I started talking to registrars, it became clear that we needed to make sure we got people on board for .eu."*

Lieben talked to as many Intellectual Property experts as he could find. *"We got intelligence from* ECTA, MARQUES, INTA*... I was in Alicante at* OHIM*'s*[1] *offices every couple of months in order to see how we could work together, because they had*

[1] The Office for Harmonization in the Internal Market: https://oami.europa.eu/ohimportal/fr/

a role to play in spreading the word with the trademark attorneys that usually submit trademark applications."

"All these groups were backing me up, and I was getting numbers from them. When I put everything together, they added up to around 350,000 possible .eu Sunrise applications…"

If those predictions came true, PwC would be quids in. No wonder the firm's management agreed to validate .eu. The Sunrise statistics[VI] show that hitting over 346,000 validations would probably generate close to €19 million in revenue for PwC!

"But if we'd only had 250,000, we would have made a loss," Lieben points out. *"We were completely at the mercy of applicants and registrars. That's why I worked so hard to reach out to all the different registrars and agents to explain what this was. Because we didn't have a clue what the outcome would be. There was simply no precedent."*

HERCULEAN

The revenue figures are impressive, but they shouldn't mask the superhuman effort required to check close to 350,000 Sunrise requests against such a complex set of instructions as the Public Policy Rules.

Lieben was never called upon to go to great lengths to justify his revenue estimates because, for this project, the process was the major point of possible failure. *"Nobody challenged me internally on the substance, on just how many applications we would receive. I was challenged on costs. Would we get the costs under control?"*

"In the service industry, controlling the costs is key. To some extent, we could steer the revenue side – by doing lots of marketing, for example. But keeping costs under control is the main issue. Looking at our costs estimates, and knowing what the revenue would be per application, we knew that we would need around 250,000 applications just to break even."

A presentation that PwC put together in 2005 to explain the prior rights protection mechanisms and processes to registrars provides a précis of the complete framework of the .eu launch phases.

It highlights the extreme complexity of the process for registrars and domain registrants as well. Leafing through it, just taking in the rules applicants were required to comply with, is enough to drive one to drink!

Article 4(2)(b) of Regulation 733/2002 gave the general eligibility requirements.

The first paragraph of Article 10(1) of Regulation 874/2004 added some specific eligibility requirements for the Sunrises.

And, of course, there was Article 14 of the same Regulation which stated that applications would only be approved on the basis of the documentary evidence received, and that this evidence had to be submitted within a 40-day period following the domain name application.

Applicants also had to review and understand the second paragraph of Article 10(1) of Regulation 874/2004 to acquaint themselves with the list of acknowledged Prior Rights.

For all but the most domain-savvy applicants, that alone would have been a Herculean task.

Sunrise 1 was simple enough, covering as it did "*registered national and community trademarks, geographical indications or designations of origin.*"

But Sunrise 2 – covering *"as far as they were protected under the national law of the Member State where they were held"* rights such as unregistered trademarks, trade names, business identifiers, company names, family names, and distinctive titles of protected literary and artistic works – added scope for errors of interpretation and inaccuracies.

The rule was that the domain name being requested should be an exact match for the right being claimed. But there were a couple of exceptions...

One had to do with non-Latin characters, which should be transliterated following generally accepted standards for such things.

That was relatively simple, but the second exception would cause severe headaches: special characters should not be used directly in a domain name (&, @ or %, for example). They should be transcribed, replaced by a hyphen, or simply left out altogether.

And because nothing in the .eu prior rights validation framework should ever be straightforward, there were actually 3 possible validation agents. Although, to the general .eu buying public, there was only one. Allen & Overy working on PWC's applications was a drop in the .eu Sunrise ocean – so tiny, it wouldn't even create a noticeable ripple.

There was also a third category of domains: the names and acronyms of Public Bodies. Validation for them would be done by Government Validation Points (GVP) individually appointed either by a Member State or directly by the European Commission.

The GVPs had become necessary when some country officials learned

that a private entity might be validating their applications. The idea that someone like PwC would end up deciding what domain names a Member State should be given was abhorrent to some governments. It was just not going to fly. And when the EURid team started hearing whisperings about the Commission getting requests to create a specific government validator – not per Member State, but for each region in each of those countries – the team decided that it would be better to agree to GVPs and bring the discussion to an end right there.

No wonder some found the process just too complicated and either gave up, or got it wrong!

DROWNING IN THE PROCESS

Procedurally, the .eu validation was not only complex for applicants. It was tough on PwC as well.

Running through it with Lieben as our co-pilot provides a harrowing insight into what his validation teams faced.

An applicant would submit an application request to EURid. It needed to state the name for which a prior right was being claimed, the type of right being claimed, and the country in which the right was protected. The language in which the documentary evidence was to be provided also had to be listed.

Once the application had been received, EURid's systems would automatically send an e-mail with a unique identifier to the applicant. This contained instructions for the applicant to prove his right to the domain name.

EURid's e-mail served as confirmation that the application had been received. The applicant now had 40 days to send in his documentary evidence. He needed to click on a link to get a pre-formatted PDF cover page. This included the identifier previously attributed to his application, which served as a unique tag for that .eu domain name request.

The applicant would print the cover page, put it in an envelope with his documentary evidence and send it to a location in Belgium.

Teams of up to 20 people worked there to open envelopes and scan everything. The documents had a bar code representation of the application's unique identifier. The scanner picked up the bar code, scanned

the documentary evidence and linked it to the application.

Then, once an hour, PWC sent out a message to EURid with the list of the applications for which documentary evidence had been received. That's the only message EURid got from PWC, until the final notification of whether an application had been validated or not.

The process was first come, first served. Provided the first applicant in the queue for a particular domain name had sent in his documentary evidence within the 40-day timeframe, EURid would send PWC an instruction to validate that application.

If no documents were submitted within the 40-day limit, the application was rejected.

PWC had validation teams in 17 countries. A 4-eyed principle was in place, meaning that all teams needed to be at least 2-people strong. But in some countries, like Germany for instance, there were 7 or 8 people. The biggest team – 35 people – was in Belgium.

The application and the documentary evidence was made available to the relevant language team on the basis of the language it had been received in. Say that was German: one person in Germany would pick this up and check whether the applicant's name matched the name of the owner of the intellectual property right being claimed. If there was no match, PWC asked for a clarification.

Mismatches could occur for various reasons. A recent change to the company name might not be officially recorded in the trademark register; or, the owner of a trademark might have provided a license for the applicant to use the trademark...

PWC did try to make an applicant's life as easy as possible. For example, they had a license declaration drafted so that non-EU companies could prove that they had licensed an EU company to use a trademark.

Once they'd received the documents, the validation teams had to check whether the claimed IP right existed. For example, a company name is not protected under IP regulations in the UK, but it is in Belgium and in France. More complexity for applicants, and PWC, to deal with.

Again with a view to smoothing the path toward validation for all concerned, PWC developed a grid to explain which rights were recognised in which country. For each Member State, the grid listed which right was protected and how protection could be substantiated.

PWC put the approved applications in a pool for a week, after which all the applications were purged and submitted to EURid.

To avoid cases of false negatives, where a legitimate application ended up being wrongly cast aside, every rejected application immediately went to a second person for quality control.

In dealing with an application, a validation agent had 3 options: reject, approve, or put a question mark next to it. For example, the agent might not be able to read the documentation because the applicant had said he would send it in Danish, so it had gone to the Danish office, but instead the documentation had been sent in German... So PWC had a separate process to cover those 'I don't know' applications

What a process! Extensive, yes. Exhausting, absolutely. But with it, PWC were able to reach full quality control on most applications they evaluated. Lieben estimates that 95% of them were worked on by at least 2 people.

MAZE RUNNERS

It took many brilliant minds at PWC – a powerhouse of a company that was used to breaking down complex problems and tackling projects of great magnitude or complexity – to synthesize a workable exit to the maze that was the .eu rulebook.

To succeed, Lieben needed the right people. PWC's sheer size would be a considerable asset here. As he went looking for specific skill sets to man the different sections of the validation chain, he knew he had a good chance of finding what he needed inside his very own organisation.

"For the initial person, the one that first picks up the application, we took people from PWC's accounting department – many of our accounting departments, in many different countries," he explains. *"We did that because those people are used to looking at things in a very process-like manner. So, we could rely on them to make sure that, from a process perspective, everything was fine."*

"At the other end of the chain, the person who conducted the quality review once the validation was completed was an intellectual property specialist."

Whilst Lieben could rely on a strong team, most applicants simply did not have access to those levels of resources. As validation agent, PWC's responsibility was also to work with registrars, helping them understand the intricacies of the .eu launch phases and, in turn, simplifying the process for

their own customers.

The drafters of the .eu rulebook had tried hard to make Europe's TLD as inclusive of all sorts of intellectual property rights as possible. *"People struggled with the complexity of the process,"* admits Lieben. *"The regulations talked about a whole panoply of property rights that could be claimed. Then there was the need to submit documentary evidence. If you were not breathing, eating and sleeping the process, chances are you would make mistakes."*

The rules were hatched from long hours of brainstorming between the Commission, EURid and the other experts working to make .eu as abuse-free as possible whilst also being well-suited to its intended public. As a result, implementing them meant subjecting the different parts of the .eu distribution chain to more complexity than anyone would have liked.

Hell really was paved with good intentions as far as the PPRs were concerned.

As an example, for the Sunrise 1 trademarks alone, claimable rights included all national trademarks registered in a European Union Member State, the European-wide 'community trademark', the infamous 'Benelux trademark' (more on that later), and internationally registered trademarks designating at least one of the Member States providing the trademark itself was registered in the Member State!

"A lot of applicants, and the registrars helping them, simply couldn't digest the whole complexity," says Lieben.

TOUGH CHOICES

So the inevitable happened. People made mistakes.

Alarm bells started going off almost as soon as the Sunrise started.

"One week after the .eu Sunrise launch on December 7, 2005, we'd already received a significant batch of documentary evidence," Lieben recalls. *"I was doing a 3-day training session with about 60 or 70 of my team members. At the end of the session, we set about doing some live validations. Turned out most of them were wrong!"*

"So I went to see the project manager at PWC and told him that we were in trouble because, if this trend continued, we would only be able to approve about one application in three. More than 60% of the ones we'd seen were wrong..."

The exchange that followed between Lieben and his PWC superior was symptomatic of the conundrum the .eu validation was being pushed into by

the unfathomable Sunrise rules.

"That's the process. If the application is wrong, then it's wrong," Lieben was told.

"There's no way we can do that," he responded. *"You can't say technically we'd done the right thing if your outcome is bogus. If your outcome is bogus, people are going to judge you on the basis of the outcome, not whether you've correctly followed your own process."*

Lieben was growing increasingly worried because of the contents of the requests that were being sent to PWC for validation.

"We were seeing all sorts of errors."

"The applicant didn't match the owner of the trademark."

"The applicant invoked a trademark in a specific country and sent in a Community trademark."

"The documentary evidence was wrong."

"People invoked a trademark and submitted a company registration certificate."

"We literally saw it all!"

Making the situation even worse was the fact that here was a process convoluted enough to stump even the professionals.

Many applicants had turned to specialist registrars or agents such as their lawyers. They had commissioned them to work through the process and deliver a valid domain request to EURid.

But these specialists were still reliant on the information supplied by their customers. The complexity of .eu trademark law meant that information was often out of whack.

"It was difficult for the registrars and agents managing Sunrise applications," Lieben concedes. *"What to do, for example, if a client applied for something under a Community trademark and sent in a Danish one instead? Do you go back to the client and try to explain, do you just leave the application as-is?"*

Trademark 101.

There were some tough choices for everyone involved in the .eu Sunrises.

The first to have made tough choices were the rule drafters themselves. Best efforts were made to be as comprehensive as possible whilst remaining user-friendly – but trademark law is such a complex field in itself that some issues were bound to slip between the cracks.

Take the Benelux trademark situation. To understand it, a few trademark basics are useful. How does applying for a trademark even work?

"For most countries, you apply and then the trademark office reviews your application," explains Lieben. *"That takes a few months. The trademark is reviewed against what we call in trademark law the absolute grounds of refusal: can the trademark being requested function as exactly that, a trademark? That basically being an identifier to distinguish the goods and services of company A from the goods and services of company B…"*

For example, if you're applying for a trademark that covers beverages, 'water' will not be allowed. Trademark offices filter applications like this out because they don't want to have descriptive trademarks.

A third party may also oppose the trademark application on the grounds that it's identical, or confusingly similar, to one of its own trademarks for identical or confusingly similar goods or services. This opposition phase is the next step in the process. It's there to prevent infringements from happening before the trademark is actually used.

"Trademark infringement is only in connection with use," says Lieben. *"Of course, if you're applying for a trademark, the trademark is not necessarily in use at that point, so the system provides for an opportunity to prevent the trademark applicant or owner from obtaining a registered trademark and causing disruptions further down the road."*

If no opposition is filed, or if an opposition is filed but does not prevail, the trademark is registered.

The process just described is the norm for most jurisdictions. The exception is the Benelux expedited process. If you're a Star Trek fan, think of this as a 'mirror universe'.

In this amalgamation of Belgium, the Netherlands and Luxembourg (the name of the region comes from the first letters of each member country), once a trademark application is received, the Benelux Office for Intellectual Property registers it within 48 hours. Only then does it start to examine the application to determine whether it meets the absolute grounds and to initiate an opposition process.

So, users of this system get a registered trademark almost instantly.

THE BENELUX LOOPHOLE

When the PPRs were drafted in the early 2000s, the fact that the Benelux Office for Intellectual Property (BOIP)[VII] allowed a greatly shortened trademark registration procedure was hardly news.

After all, the 'Accelerated Procedure', as BOIP calls it, has been around since January 1, 1971[VIII]!

On its website, BOIP is clear in its warnings that this type of accelerated registration should be treated with caution. *"In the event of an accelerated registration, the trademark will be registered as soon as the formalities have been attended to. This procedure can be completed within a couple of days. You should note, however, that the assessment on absolute grounds and any opposition will, in this case, take place after registration. This may still lead to your registration being cancelled and deleted from the register."*

BOIP's Accelerated Procedure was around long before anyone had even thought of a commercial Internet or mass-marketed domain names – let alone a .eu.

It was born out of both opportunity and necessity.

Benelux invented that system because there are two different international trademark application procedures: the Madrid system and the Madrid Protocol system.

Under the Madrid Protocol, a trademark is filed in a country which is a member state of the Madrid system. The applicant then declares which other countries the trademark should cover.

Whereas the Madrid system covers national rights, the Madrid Protocol allows for more than one country to be covered by a trademark.

The Protocol is still pretty new[1], whereas the Madrid system has existed for much longer. The catch is that, in order to apply for coverage in other countries, you first need to have a trademark registration.

The Benelux office saw an opportunity to make money through expedited trademark registrations. The applicant gets a certificate and can use the Madrid system right away. In essence, it's a bypass of the whole process which allows a basic trademark to serve as a base for international trademark applications.

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[1] According to Wikipedia, The Protocol entered into force on December 1, 1995 and became operative on April 1, 1996: https://en.wikipedia.org/wiki/Madrid_system#History_and_development

Obviously, when BOIP put together its expedited trademark service, it had no intent to game a future TLD Sunrise process. But even when no one has thought of it, if a loophole exists, people will find it!

ONE MAN'S PAIN, ANOTHER MAN'S PLEASURE

Understanding the circumstances around Benelux's expedited trademark service provides insight into the reasons the .eu launch rules became so complex. Planning for a safe European domain meant covering as many of the legal world's idiosyncrasies as possible.

The Commission, EURid and PWC had identified the Benelux trademark as a potential issue quite quickly, but there was very little they could do. Benelux trademarks were legally valid, after all.

The Benelux loophole had been there, for all to see, years before .eu was even a gleam in the Commission's eye. Some .eu applicants might have felt sending in a Benelux trademark to claim a right on a domain name was not in the spirit of the Sunrise process, but others were unburdened by such scruples. Bottom line: the PPRs allowed the Benelux trademark along with any other EU Member State approved prior right. So, just like other changes had proven impossible to implement, there could be no changing that after the fact.

Also, let's not forget that one man's loophole is another man's legitimate way in.

Anyone eager to use this to lay criticism at .eu's door should be careful not to tar all applicants claiming a Benelux trademark with the same brush. The Accelerated Trademark option wasn't the culprit. It was the way some were using the system in the context of the .eu Sunrise that was problematic. But for others, the Benelux Accelerated Trademark was a potential lifesaver.

"For example: a British company has an unregistered trademark, called a Common Law trademark, which is fine in the UK but isn't recognised in the same way under the European system," Lieben posits. "In .eu, those types of trademarks would only be recognisable under Sunrise 2. So those applicants would face the potential problem of having to deal with "bogus" applicants that got in during Sunrise 1, even though their own trademark is well-established and recognised under their national system."

"The solution in that case would be to use the Benelux trademark system – it's efficient, easy and helps avoid the need to fight abuse later on."

"People criticised the fact that we allowed the Benelux trademarks because many of the 'interesting' names, like sex.eu or porn.eu, were applications that used Benelux trademarks to get in during Sunrise 1. But that's forgetting that there were also those who used the system for legitimate purposes, because they had a trademark but the trademark didn't qualify because they came from Canada, Australia, the US or wherever."

"In the end, for each 'gambler' we had trying to game the process, there was also a legitimate applicant using the system to get a legitimate domain name. But nobody complained about them."

TAINTED LOVE

Some might see the Benelux system as a way to sidestep established trademark law. Maybe it should even be revisited. But at the time the .eu rules were being drawn up, the trademarks it yielded were perfectly valid as a legally binding right.

Europe's domain simply had to reflect that reality.

Those applicants that used Benelux trademarks to secure .eu domains were playing by the rules. Some may have felt that they were bending the rules, but they were still very much within them.

Whilst invoking a Benelux trademark was legal, there were those willing to skate much closer to the blurry line separating the acceptable way into .eu domain ownership from much more dubious methods.

One example: the 'ampersand rule'. This was one of the exceptions to the requirement that the domain name being requested should be an exact match for the right being claimed.

What if it could be used, in conjunction with the Benelux system for example, to get a .eu name for which a standard trademark would never be possible?

Say an applicant wanted 'barcelona.eu'. The term 'Barcelona' might be difficult to trademark – at least, it would warrant some closer scrutiny from the trademark office. But go for 'b&arcelona' instead, and you just might slip through.

Then, it was just a matter of requesting 'b&arcelona.eu' under the Sunrise rules – which allowed for figurative signs, like the ampersand, to be removed altogether if they could not be transposed.

And voilà: b&arcelona became barcelona!

Once again, the rules were landing .eu in trouble. How ironic this was. The biggest TLD launch in domain history. Yet, as cases accumulated in which 'tricksters' found ways to 'optimize' the system to their advantage, the TLD itself was beginning to be tainted.

In 2006, a post-Sunrise and Landrush interview[IX] with then EURid Legal Manager Herman Sobrie shows that the launch issues were very much at the forefront of any .eu conversation.

"Generally, disputes concern some aspect of the registration process and are resolved either by Alternative Dispute Resolution or in the civil courts," Sobrie explained, when asked about the problems seen during the European TLD's launch processes.

"EURid, in agreement with the European Commission, appointed the Czech Arbitration Court ('CAC') as a 'private court' and most registration disputes are dealt with there. CAC is independent of EURid."

"Two types of dispute are currently before the CAC. The first concerns registrations during the 'Sunrise' period. Approximately 350,000 .eu names were registered during that period, and 700 ADR procedures have been launched by .eu name applicants challenging EURid's decision."

"These decisions have been overturned in approximately 100 out of the 300 or so ADRs that have been decided so far. EURid wants the prior right holder to have what belongs to him or her, and some applicants indeed have good arguments for challenging the decision not to register their name. EURid does not have an adversarial role in these proceedings; our role is to help provide the information required by the CAC."

"The second type has arisen from the 'Land Rush' registration in April 2006. The relevant EC legislation does not allow speculative and abusive registration. Approximately 20-30 disputes have arisen between two other parties and are before the CAC. Again, EURid plays a neutral role. So far, the court has asked us to confirm registration information rather than express our opinion on disputes."

"In general, the arbitration procedure is a quick, straightforward system using electronic filing to deal with most disputes. To date, there have not been any open court proceedings in Prague."

"However, EURid has found that, on occasion, it is constrained by the EU regulations, and ADR is not effective for dealing with all issues. One example is so-called name 'warehousing', where EURid has gone straight to the civil courts."

There it was. Yet another example of domain terminology, and yet another attempt to beat the house in this great game of .eu poker... Sobrie went on to explain exactly what this term 'warehousing' meant.

"Although there is no legal definition of 'warehousing' (or domain 'grabbing'), it is generally understood as the registration of huge numbers of (mostly generic) domain names for the purpose of selling them. There is no legal provision forbidding reselling .eu names; it is not a regulated activity."

"In terms of its scale, the one-time launch of .eu was unprecedented. A few people saw the launch as an opportunity to grab as many names as possible – not to ever use the names, but to resell them."

And there was yet another trickster as well. One more name made infamous by the .eu launch: Ovidio.

"EURid received complaints about one 'warehouser' in particular and, after investigation, we concluded that the contractual rule obliging registrars to own only a small number of names had been breached. The matter, called Ovidio, is currently before the Brussels civil court. This case has been widely discussed by the internet community."

"In brief, a registrant incorporated approximately 400 limited companies in Delaware and then each company paid €10,000 to become a .eu registrar. This 'warehouser' then grabbed approximately 74,000 .eu domain names. Since EURid's agreements with its registrars forbid them to 'warehouse', EURid sued all 400 registrars before the Brussels Court in breach of contract."

The Ovidio controversy would continue beyond Sobrie's interview. EURid had been proactive in its attempts to prevent an obvious scam from adversely impacting any legitimate person or entity by putting these 74,000 domains out of their reach for good.

Ovidio had employed untoward tactics to get them. EURid was not going to let that stand.

The registry blocked the 74,000 names to prevent Ovidio from changing the ownership of the names and moving them to other shell companies not covered by the case at hand. But the President of the Court ordered the block lifted – most probably out of a misconception that blocking meant the names would no longer be operational on the Internet. However, blocking merely freezes a domain name's data. The domain name itself can still be used.

EURid had attempted to enforce its rules and protect the .eu registrant.

For its troubles, it was served with a court order to unblock the names within a certain timeframe or face fines. EURid obeyed, unblocking all but a few names for which a formal dispute resolution procedure had already been started – requiring them to remain blocked.

Undeterred by reason – or even the most basic levels of decency – Ovidio waited a few weeks and then sued EURid for damages on the unblocked names. The amounts requested were as ludicrous as the case itself: around €450 million!

A long legal battle ensued. EURid eventually prevailed – and Ovidio found itself having to pay one of the largest procedural cost indemnities ever ordered by a Belgian court.

STAPLES

The launch afflictions spanned the sublime – such as the ampersand and warehousing issues, which were pretty clever ways to try to circumvent the rules EURid was contracted to uphold – and the ridiculous.

Ask any .eu Sunrise applicant… there's a fair chance they'll remember some silliness around staples.

"*We did some tests,*" sighs Lieben when staples are mentioned. "*It takes between 5 and 10 seconds to remove a staple from a pile of documents. Take your average community trademark registration certificate: it's around 20 pages, because you have the description of all the goods and services in every official language of the EU printed on the certificate.*"

"*If the certificate is stapled, first of all it takes time to remove the staple. Then, if you want to scan a document that has been stapled – and therefore the corners of the pages have been pushed into one another – you very often get mis-feeds in the scanner.*"

"*Once you get mis-feeds, you need to take the document out of the scanner, see where the mis-feed occurred, put the documents back in the right order… all that takes time.*"

"*So we decided to ask people not to staple documents. But that's easier said than done. I designed a disclaimer to sit on the top left-hand corner of the page the applicant needed to print out, sign and use to enclose the documentary evidence. The disclaimer said: don't use staples.*"

But of course, many did send their documents in stapled. Even though that must have been infuriating for a PWC team looking for any way to save time and hassle, no one was penalised for not reading those instructions.

If staples were there and had to be removed, that's what Lieben's people did.

EXCEL

When staples didn't cause problems, Microsoft's Excel spreadsheet management software did!

"It was January 16," says Lieben, recalling another colourful incident in the .eu launch saga. *"Again, I remember it as if it was yesterday, because January 16 is December 7 plus 40 days. So, the last day on which those applicants that had applied on Day 1 could provide documentary evidence. January 16, 2006 was a Monday."*

"When I get to the office that Monday morning, the IT project manager comes to me and says: Bart, I just want you to know that we've received around 26,000 different sets of documentary evidence just yesterday – so the day before the deadline. And about 5,000 of them are rejected. They all come from the same account."

These documents were being sent in because the procedure allowed registrars to scan the evidence and upload the corresponding files to PWC's system, rather than putting paper in the post, if that would be easier. But tracking had to be spot on to match the files to the right application. In its receipt confirmation for each application being sent in, EURid provided a unique number. This was to be reproduced on any documents being sent in electronically to enable PWC to query EURid's database and match them to the right domain name application. In this instance, the ID numbers weren't matching up.

"So I started thinking about what we could do," says Lieben. *Could we try to figure out who was sending this? They still had one day to submit their documentary evidence so perhaps we could help them? Surely nobody would have a problem with us notifying them that something was going wrong."*

"I started looking at the big corporate registrars that were participating in the .eu Sunrise. But nothing matched. I couldn't do a simple lookup and see who was submitting what. Our system didn't allow it because it didn't know who the registrars were. All applications were linked to applicants only."

"I had to try to link the account numbers in our system to a party whose identity I didn't know. So I started trying to find registrars on the basis of the clients that they worked with. I did .com WHOIS lookups to get sample clients from major corporate registrars."

"As I looked at these records, I kept on seeing one registrar that had not supplied its documentary evidence in time. It was a big player, and they were still within the timeframe to submit, so I decided to give them a heads-up. I waited a few hours because, as they were in the US, they were not in the same time zone…"

"I got the guy I knew from the registrar on the phone:

- Is this a convenient time to talk?

- Yeah, sure, no problem. I'm not in the office because it's a national holiday here today. I'm in Best Buy buying a computer for my son.

- Well you should buy several computers because you're going to need them!"

"What had happened was this. Every application has a unique code at EURid. *That code had 16 characters. They had downloaded the list of every single application that needed to have documentary evidence and put it in a comma-separated values table in Excel. Now, Excel doesn't understand 16 digit codes. So it transforms them into scientific notation which is the first 12 numbers plus a zero, plus an E. So then, if you try to turn that code back into numbers, your last digit always ends up being a zero."*

"The end result was that 90% of the codes that they had simply didn't exist on our system. That's why we got 5,000 bounce backs. We had all these codes with zeros on the end – we sent them to EURid, *and* EURid *said: we don't know this code."*

"If we hadn't intervened at that point, that registrar would not have been able to submit the documentary evidence in time. But because we did, at their end they were able to start calling their whole team to re-submit everything, and I think that, apart from 200 or 300 applications, they got everything back in at the very last minute."

MAJOR RETHINK

Yes, some of the .eu launch issues do raise a smile, while others raise an eyebrow. But for Lieben, the important thing is that the people behind the scenes always had the applicant's best interest at heart.

In the years following the .eu launch, the Sunrises became the stuff of many an urban legend... despite the fact that an external audit confirmed that both PWC and EURid had made sure everyone was given a fair chance to get the name they wanted.

Those who tried to circumvent the rules or outsmart the system, and those who simply did not follow the instructions given to them, were convinced that they had been the victims of (at best) a shambles of a launch, or (at worst) a conspiracy to prevent them from getting the names they wanted.

Yet the .eu launch statistics clearly show that the professional registrars scored very high success rates. They put in the effort, made sure their own internal procedures were top notch, and got their customers the names. Period.

Still, some undeniably had problems – so lessons to be learnt. PWC logged the issues and called a meeting of the main protagonists. PWC's Brussels office was just a short drive away from EURid's. People from both organisations met, along with representatives from Allen & Overy.

Straight away, PWC puts its cards on the table. As validator, their analysis of the proceedings so far showed that, if they followed the process to the letter, then up to 60% of the applicants would fail. This assertion was backed up by the firm's ledger of issues: so many examples of minor to major applicant (or registrar) errors which would, in theory, preclude them from getting their intended .eu domain name.

A solution had to be found, no question about it.

With EURid's approval, PWC started re-examining every step of the validation process. No core parameters could be altered, of course. The PPRs could not be sidestepped. And there was neither the time nor the resources to redo the computer system PWC had built for the Sunrise validations.

Whatever was going to be done had to fit within the existing framework.

PWC rethought the whole validation chain. Their teams underwent extensive re-training. New approaches were designed, then hard-coded into new written procedures for the teams to use.

The results were remarkable. Approval rates rose from around 30% to above 70%.

DISPUTES AND ARBITRATION

To engineer such a dramatic turnaround, PWC adopted a new baseline approach: if any right being claimed was independently verifiable using the available documentation, then the application was to be approved.

"*For example, say you claim a Danish trademark and you submit a Community trademark certificate,*" says Lieben. "*We OK it because your trademark enjoys protection in Denmark. So we've found a legal reason to allow this application to go through.*"

To enact the changes in approach and strengthen the links between operator and validator even more, PWC installed people at the EURid office quasi-full-time. Meetings between the two organisations were held at least once a week, sometimes more often. On the menu for these get-togethers: the latest list of issues or complaints passed on to EURid by applicants, for PWC to examine and, if possible, resolve.

"Mistakes get made. Even if you have a streamlined process, inevitably things will fall between the cracks. You will have someone not following the re-designed process, for example. These mistakes were corrected. We had quality control mechanisms on that as well. Out of the 346,000, I know that we made 6 mistakes. But for all the others, there was always an explanation. And those explanations were there to help the applicant, not to say: no, you're out, next in line please."

"That was our approach. We always tried to think in favour of the applicants, finding arguments to say yes rather than no."

However, Lieben doesn't feel his philosophy of putting the applicant first and the process second was shared by everyone. Ten years after the .eu launch, some wounds clearly haven't healed.

"We found ways to help the applicant, and I always pushed the teams in that direction, even to the point of frustrating some of my people internally who said that we had a process and we should stick to it."

"But I told my people: yes, it may be frustrating, but you don't have to explain. If somebody gets grilled at an ICANN *meeting or at a registrar meeting, it's going to be me, not you. I have to explain. So rather than sitting around the table for half an hour discussing how we're going to solve this particular issue, if we sense that the person has a legitimate right to that name, let's give it to him! And I don't care whether there's an issue with staples or he claimed one right and he sent in something else, if we're not harming anyone by allocating the name and this person has a decent story that can be explained, then let's do it!"*

Lieben may feel he had to kick-start his team into playing the long game from time to time, and also that some partners could have played ball a little more. *"We had a lot of mayhem created by the decisions from the Czech Arbitration Court,"* he charges.

"There were 2 grounds for filing a complaint with the CAC. *One was basically .eu* UDRP, *where you think that someone else has registered your trademark, or a symbol that's confusingly similar to your trademark, without having any right to it themselves and is acting in bad faith."*

"The second was the ability to challenge the registry's decision."

"Now in the vast majority of cases, say 99%, EURid *said what we said. If we approved an application, then they approved it and did not review our decisions."*

"Before .eu launched, I flew to Prague a couple of times to explain the way we were running our process to the CAC. *I told them: you need to know because, otherwise, you're going to take decisions that will go in every direction."*

Lieben explained to the Czech team that the validation process had been dictated by the constraints imposed by the European Commission. There was a set validation fee, and the registration fee EURid was able to charge was also controlled. Yet everyone had to cover their costs and make a little money out of the proceedings, so the resulting validation framework was the best-fitting square peg for the .eu round hole.

"I told them: if someone makes a mistake, we cannot correct it."

"Then there was a first panel decision by the CAC. The panel decided that, if the applicant makes a mistake, we should pick up the phone, call the applicant, tell him that he's made a mistake and allow him to correct it!"

To Lieben, it seemed as though his advice had been blatantly ignored or, even worse, the CAC had done exactly the opposite.

"This Dutch company had applied for all the countries and the regions in the world with an ampersand in between, and the CAC said that, if there was an ampersand that could be transliterated into a letter, then this was our preferred option. For example, allocating a&f&r&i&ca to africa.eu: we can't do that because transliteration is what we have to do. This was crazy, because there's nothing in the regulations that said transliteration had preference over removing the character."

GREETING, NOT BOUNCING

In hindsight, was the .eu launch perfect? Of course not! *"Yes, there were problems,"* says Lieben. *"But it was a huge project, and it got done. And I think – beyond a shadow of a doubt – it was a huge success."*

There may be no convincing those people who ran afoul of PWC's stringent efforts to cover every base. Or who simply refused to try to understand, even when people that had no obligation to do so went that extra mile to try to carry them across the .eu validation goal posts.

"I got some very good comments from people who value what we did. But you can never convince people like the one applicant who submitted an application, made a mistake, then resubmitted the same information and was rejected again! He then called me to ask what they had to do. I looked at his application and told him he was still within the timeframe to apply. I explained what we needed. He then went and submitted the same application, just adding an extra page on top saying: as per my discussion with Bart Lieben!"

Despite these occasional mishaps, Lieben built up vast expertise

dealing with .eu and was later called upon to run the Sunrise periods for several subsequent TLD launches. He worked on .mobi, .asia, .tel and .co.

BLUEPRINTING THE FUTURE

Working on the biggest Sunrise launch of all time meant driving head-on into problems no one had ever seen before. However, it also provided unique insights into potential improvements that could be of benefit to all new TLDs coming to market.

Ten years after .eu started, the new gTLD programme is this future. It comes preloaded with its own specific database of trademarked rights, appropriately called the Trademark Clearinghouse[X] (or TMCH, for short).

"I pitched the idea of the TMCH during the ICANN meeting in Mexico in 2009[XI]. Two days after the end of the .eu Sunrise, I'd met with members of my team in my office and asked them: how are we going to solve the problems applicants and registrars faced for future launches? That's where the idea of having a Trademark Clearinghouse came from."

Once again, .eu was a precursor. A blueprint for future domain industry developments. It may have taken all of PWC's might to prevent the .eu Sunrise from being submerged by its own complexities and idiosyncrasies, but in the end the sun did rise on .eu.

Europe's TLD did not sink, despite the immense number of people who applied to get a .eu domain.

".eu was the biggest launch," Lieben asserts. *"And I think it will always remain the biggest launch. If you look at the number of trademarks currently registered in the TMCH, for example, it's 15% of the number we had for .eu."*

"And that's without the complexity that we had. Because, in the TMCH, you have the registered trademarks and the unregistered common law trademarks, and that's it. So they don't have any language issues, for instance. There's so much that the TMCH doesn't have to deal with, but that we had to for .eu."

The .eu launch was the domain industry's moon mission. Since those heady days of blasting Saturn V rockets at Earth's satellite, there have been more hi-tech forays into space. But none as awe inspiringly difficult a challenge to pull off. Because, for the Apollo missions, everything was being tried for the first time. The risk of failure was omnipresent. The price of failure too high to even think about. Not dissimilar, then, to the way .eu was shot into the domain space...

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Learning to communicate

Since successfully completing the .eu project, instead of resting on their laurels, EURid's teams have continuously searched for ways to keep the European domain technically relevant and innovative.

Time and again, this attitude has helped .eu set the standard for the technical operation of a TLD.

Very early on, EURid's management recognised the importance of a solid technical platform as one of the foundations of a truly global, state-of-the-art TLD. They also understood that, in a nascent industry such as this one, customer service could easily set one suffix apart from the next.

General Manager Marc Van Wesemael had two main 'customers' to worry about. The first was the European Commission, to which EURid owed regular progress reports, and with which the registry needed to build an intimate relationship. The second was the registrars.

Under the Public Policy Rules, EURid is not able to sell directly to registrants and must instead work through a network of contracted parties: the registrars. In an increasingly competitive market, making sure registrars stayed motivated to sell .eu was key to getting the TLD in front of its end-users. If registrars didn't carry the product, or didn't push it, registrants would be less likely to choose it.

And in an increasingly political international Internet Governance environment, keeping the Commission in the loop was a prerequisite for EURid's continued prosperity. The contract to operate .eu is not a lifelong benefit – it's renewable every 5 years!

THE RIGHT MAN FOR THE JOB

Marc Van Wesemael needed to make sure EURid would excel at both the sales and the politics. The best way to achieve that was to get someone to look after those specific areas.

The person Van Wesemael was looking for needed experience of political situations and customer service. A rare mix. But he thought he'd met the right person when the Italian registry first joined the team that would become EURid. As an added blessing, the man in question had long since left ITT-CNR, so Van Wesemael would not risk offending a founding partner by offering Giovanni Seppia a job.

Seppia had left the Italian registry for CENTR, where he was general manager for 2 years, when a new opportunity presented itself: ICANN.

Seppia had hardly settled in before he was once again offered a change of scenery. *"Marc chased me for a while. But I'd just started working at ICANN and it seemed too soon to switch again. So I turned him down. We saw each other many times, during international meetings, and he would often offer me a job. So after a while I went to him to see if he was still interested. This was for the Internal Relations Manager, not my current position of External Relations Manager."*

With the timing right at last, Seppia started at EURid in June 2007.

PUTTING OUT FIRES

He hardly had time to catch his breath.

It's not that EURid was bad at external relations, it's that it wasn't bothering with them at all! The notion of looking after people external to EURid seemed as alien to the team as a Wi-Fi connection in the middle of the tropical rain forest. Van Wesemael was 110% right: someone to organise EURid diplomatic skills was sorely needed. Especially with the European Commission.

The registry of a geographic TLD almost always depends on the region's government for its right to operate. Looking after that governing body is Registry 101. EURid was not oblivious to this, but it wasn't at the centre of the registry's focus either. Relations with the Commission were part of a generic team job definition, but not at the top of anyone's list.

That's why Van Wesemael had chased after Seppia. He wanted someone

to take ownership of this crucial area for the sake of EURid's future.

In the first 6 months of his tenure, Seppia did just that. He put international relations – and relations with the Commission – at the heart of his work programme. This was sorely needed. The relationship was strained, calling for immediate 'tlc'. Because it had previously been part of someone else's to-do list, response times were poor.

Commission letters requesting explanations or specifics on .eu were not being dealt with expeditiously. The backlog was growing and so was the Commission's anxiety.

Seppia still remembers his first meeting with them, about 4 weeks into his new job. He'd gone with EURid's lawyer, Herman Sobrie, and endured a grilling. *"In the car coming back from the meeting, Herman turned to me and said: they just killed us in there!"*

ROLL UP THOSE SLEEVES!

There was nothing to it but get cracking, or watch EURid flush its .eu contract down the drain. The initial contract was enacted on October 12, 2004. That meant a second 5-year term would have to be negotiated in 2009.

Executing a transfer of registry functions can be a time-consuming and hazardous process, with the risk of breaking something that didn't need fixing in the first place. So, it is always presumed that an incumbent registry has the best chance of being kept on by its governing authority. But this is by no means a given. Especially if the registry is not proving itself very adept at keeping the powers that be in the loop.

As Seppia peeled back the outer layers of EURid's external relations onion, he found an imposing pile of Commission requests in dire need of some attention. *"It was my job to fix this. I set about rebuilding the circle of trust with the Commission. The first thing was for me to respond to all the letters. I think I spent 2 months responding to each letter item by item, with the help of all the EURid departments."*

It wasn't that Seppia's new colleagues had purposefully refused to respond to the Commission's questions. It's just that, at the time, EURid was very much in start-up mode, with limited resources, prioritising operational emergencies ahead of diplomatic ones.

"*We've always considered the Commission to be a key partner,*" says Marc

Van Wesemael. "*But at the time, we just weren't the customer-focused organisation we are today. We were just becoming operational. Anyone who has ever worked in a start-up knows that, during this phase, some essentials can get side-lined because the priority is to just bring the product to market.*"

In EURid's case, that product was .eu: taking it from theory to reality, knowingly choosing not to expend a uniform level of effort on all ongoing projects. Commission relations had suffered from this necessary triage – so Seppia had been hired to focus on everything not directly related to the operational part of EURid's business.

Seppia set about building a process to coordinate every EURid department and ensure an organised reporting flow. Reporting had to become second nature to these teams, even when they felt it wasn't a priority. Mind-sets had to be changed so that reporting would no longer seem to be an insurmountable hurdle, but instead, an efficient way to actually save time and resources.

Every department was asked to report to Seppia every 3 months. From this, he would then compile EURid's overall report to the Commission.

LIKE A HOT KNIFE THROUGH BUTTER

Slowly but surely, the work started to pay off. The people at the European Commission began to feel that, once again, there was someone at the other end of the line. "*I saw the shift in the Commission's attitude when, instead of receiving formal letters, we started to get e-mails again. Now when the Commission needed something, they would call me, and vice-versa. I worked on that until September 2007. It was a lot of effort.*"

Giving the Commission a new face, which wasn't actually a new face, had been Van Wesemael's stroke of genius to deal with a dire communications problem. The European Commission representatives had known Seppia in his previous positions at ICANN and CENTR. There, he'd gained a reputation for having a structured approach and being savvy enough not to irk public bodies. Seppia's experience also helped the EURid teams, because, up to then, they had not been trained in the art of keeping political institutions happy.

The real reward for this overhaul in communications came when it was time to look at renewing the initial 2004 .eu registry contract. Had it been

so inclined, the Commission could have made the process very formal, with a full tender and new call for expressions of interest. But by then relations with EURid were good enough that a simpler solution was found.

The work done since 2007 to restore the Commission's goodwill towards its TLD operator served as the foundation for the contract renewal. This ended up being a painless process, completed almost exclusively through phone calls and e-mails. There was complete trust on both sides once more.

The renewal was granted without any requests for changes to the KPIs[1], the reporting scheme or any other features of the contract. It was a simple ratification of the continuation of the initial contract.

The work done to restore the relationship between the two entities had been a great help, but that alone cannot explain such smooth sailing when the time to renew the initial contract term arrived. Fortunately, two other developments, concurrent with the end of the first term of the .eu contract, gave the EURid teams additional chances to highlight their abilities to excel at project management and to work in close collaboration with the Commission.

In 2009, EURid started getting involved in planning an ICANN meeting in Brussels, which ended up happening in June 2010[1]. Even though the Commission endorsed the meeting, they remained quite sceptical about it: they understood the amount of work it would entail for EURid, with no certainty of a positive impact on EURid's image as a result. In the end, the Commission was appreciative of EURid's work, and Seppia feels this also had a positive influence come contract renewal time.

A much more crucial endeavour for EURid, the Commission and .eu was begun in 2008 and completed the following year, when Internationalised Domain Names were introduced at the 2nd level.

Not only was this a challenge on a technical level, it was also politically sensitive. By moving away from being exclusively ASCII[2], .eu could at last embrace all the official European Union languages. Not only would .eu be able to handle accents or special characters in languages like German or

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[1] Key Performance Indicators

[2] The American Standard Code for Information Interchange is the most ubiquitous character set used on computers. It is close to the Latin alphabet and does not handle special characters like accented letters or scripts such as Greek or Cyrillic.

French, but even different scripts like those used by countries such as Greece or Bulgaria. One of the Commission's initial commitments for .eu was for it to be truly European – so it was important to get there, and to get it right.

But because the original PPRs did not include IDN characters, introducing them at the 2nd level (to the left of the dot in .eu domain names) was a huge undertaking, requiring regulatory and procedural changes at Commission level. If EURid did not work closely with the Commission to put those in place, there was significant scope for the project to go awry.

"The project required close collaboration between the Commission and EURid and could not have been done without that," confirms Seppia. *"Whenever they needed input from us on changing the regulation, or understanding how IDNs work, we were there to provide it. And whenever we were in need of their input on things like internal Commission procedures, they would provide it in a very timely manner."*

"I am sure that the fact that we worked so well together on a project – introducing IDNs – which was one of the objectives that the first contract had set for the .eu registry operator and which, therefore, had to be done before the end of that contract's term, was one of the reasons the Commission went ahead on the contract renewal without even issuing a call for expressions of interest."

The 2009 contract renewal ended up being a formality. It was like slicing through butter with a hot knife. But everyone at EURid knew this could only happen once. The Commission's legal department had looked at the regulations in detail. They were clear: there could be only one tacit renewal with no call for expressions of interest being issued.

At some point after the second 5-year term, the job of operating Europe's domain would have to once again be put out to tender.

MORE OF THE SAME?

The .eu contract was renewed right on schedule, in 2014. Even though, this time, there would be no opting out of a full tender process, there was still the presumption that the incumbent registry would be retained. *"From what we know, there was not that much competition to EURid for the second bid,"* says Seppia. *"But then, the call for expressions of interest itself was quite specific. For instance, it contained the clause that the winner must be based in the EU."*

There was also a clause to say that, whatever solution was presented in response to the bid, the applicant had to be able to manage it directly.

Outsourcing was not allowed. Many of the new gTLD registries outsource a lot of their registry operations. But that would have been impossible for .eu, because under the rules, the core business could not be outsourced. So only companies with clear DNS management expertise could bid.

Looking at it realistically, who would want to take over as .eu registry? Any organisation taking this on would have to be non-profit – so stepping in and replacing EURid, who by this time had 8 full years of operation under its belt and the means to live up to the Commission's ambitions for .eu, would mean large investments that would be difficult to recoup.

Not surprisingly, EURid is thought to have been the only bidder for the renewed .eu contract. Seppia feels this is also a testament to EURid's years of committed involvement in many domain-related forums and hard work maintaining good relationships with its industry peers. *"I believe that, because of the good relations we've built and the support we've given to the Community in the past 10 years, they didn't compete with us because they felt EURid was the right company to run .eu. They didn't feel it would have been politically correct to compete with us."*

The call published by the Commission wasn't that different to the first bid that had been put out in 2003. But rather than respond with the same solutions that had worked so well since that first day of .eu registrations on December 7, 2005, EURid chose to push past its comfort zone.

Building on the experience built up in the first decade of managing .eu, EURid also worked hard to add new dimensions to its response by anticipating future Internet trends as well as the possible desires of the next generations of .eu users.

The response was put together in a couple of months, including 3 full weeks of non-stop fine-tuning as the contributions from the various EURid departments were brought together and homogenised.

As part of its submission, EURid looked at the state of the domain industry and delivered a prediction of what could be expected in the next 5 years.

But this is an industry that is so fast moving, it's almost dizzying. Predictions are hazardous at best. So EURid also underscored some aspects of operating a major TLD like .eu which had not been considered in as much detail in the initial bid, when the world was a very different place. When EURid first bid, social media was unheard of. For most organisations, online marketing was less than 2% of the marketing budget. Nigh on non-existent.

Today, it can reach 90% of the marketing budget of a major company.

"We didn't keep to the same response that we'd submitted for the previous bid," says Seppia. *"We updated certain procedures. One element that was more prominent in the new response, for example, was the weight assigned to registrar relations, marketing and communications. The new response was both more of that, and more refined in those areas."*

The first 10 years have shown that EURid is capable of staying focused in the face of harsh criticism and able to adapt to new circumstances and changing environments – becoming a trusted operator with the respect of both its peers and governing authorities, seeking out the right people and the right partners to deliver best-in-class services to Europe's (and the world's) Internet users, and building technical infrastructures capable of withstanding extremely high levels of transactional activity.

Now, EURid's challenge is to stay one step ahead of the most dynamic and rapidly evolving medium in human history: the Internet!

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The .eu legacy

Europe's TLD has made history.

At the end of 2015, there were close to 4 million .eu domain names. For each of the last 6 months of 2015, EURid completed from 60,000 to 80,000 registrations. All this in an environment that has changed significantly since .eu first opened for business in December 2005 and went on to score the biggest TLD launch of all time.

Just to put those numbers in perspective. At the same July 31, 2015 date, only the top 10 of the 720+ new gTLDs activated on the Internet since 2014 had registered more than 100,000 names[1]. Not in a week, not in a month, but over their full lifetimes. Dot eu comes close to those numbers every month.

Domain name consumers have so much more choice than before.

When .eu opened in 2005, it was to a world of less than 400 ccTLDs and under 20 gTLDs. At the time of this writing, the number of ccTLDs has remained stable, but the g space has started the biggest expansion to Internet's namespace the Web has ever seen.

The new gTLD programme is still taking baby steps – but, so far, the increase in the number of generic Top Level Domains out there is over 3,500%! Not all use an open registration system. Some are so specific that they can only be relevant to targeted professions, interest groups or communities.

But the underlying truth is that, today, there are many more options out there when it comes to buying domain names.

This re-jig of the Internet's namespace has also meant major changes to the domain name industry and its distribution channels. Connect to a

registrar's website, and the shelf space is still basically the same. After all, the size of the average computer screen window hasn't suddenly doubled. Yet, registrars now have so many more products to sell.

And to connect to. Each time a registrar wants to offer its customers a TLD, it must first connect its systems to that TLD's registry. Doing so takes time, resources and effort.

Then, to be effective in selling this newly connected TLD, the registrar must also be able to put it in front of customers in an easy-to-see, simple-to-understand, quick-to-buy fashion. That was simpler to do when gTLDs numbered 20 instead of 720.

The domain industry is working to rewrite itself and cope with this influx of new products. It's also trying to find the most effective ways of selling them. In this environment, experience and expertise are worth more and more for both domain sellers (the registrars) and domain buyers (the registrants).

This is an area where EURid can make a difference. *"I believe we are more able to listen than other registries,"* says Giovanni Seppia. *"So when we're presented with an issue, we guarantee a certain level of responsiveness. Also, we take note of what customers tell us. We take ownership of issues and make sure that, one way or another, we deliver."*

"Our registrars have told us many times that this is the real added value of EURid. So, when registrars are thinking about which extension to promote, many lean towards .eu because they know they have a reliable team behind this brand and this TLD to help them."

KEEPING CUSTOMERS HAPPY

The new domain landscape is forcing EURid to promote itself and its abilities ever more fiercely. *"We know that some registrars have encountered problems with the new gTLDs,"* says Seppia. *"But I've told my team that we should only talk about what we can do and deliver, not about the others. We know we can deliver a high level of service with .eu – and that's all we're focused on. That's why many registrars continue to promote .eu so heavily. They know it's a reliable product, with a reliable company behind it."*

This focus on service and excellence has helped EURid stave off the inevitable onslaught of new gTLDs and the accompanying allure of new products that could damage legacy TLDs like .eu.

So far, that hasn't happened.

"We've seen that, in those countries where registrars don't sell many new gTLDs, they keep .eu as one of the Top 3 extensions," says Seppia. *"That's due to the quality of the relationship we've developed with them."*

"Of course, there are some countries where .eu growth has diminished. Some registrars are more heavily involved in selling new gTLDs. But that doesn't mean they aren't still pushing .eu. One year ago, when the new gTLDs came out, those registrars were telling us that they were going to stop promoting .eu to make way for the new gTLDs. One year on, they've done no such thing."

Good results, but certainly not the time to sit back and expect customers to just keep on coming. On top of his responsibilities regarding International Relations and relations with the European Commission and the European Parliament, Giovanni Seppia stepped up his External Relations role in 2008. General Manager Marc Van Wesemael wanted to have someone take on the crucial task of focusing EURid's customer service efforts.

EURid had actively pushed for operational and technical excellence. Its relationship with its governing authority, the European Commission, was now excellent. But Van Wesemael was not satisfied. He felt there was still a lot of room for improvement on the business side. EURid had to get its rapport with its customers – the registrars – 100% right.

After all, the future was looming large. For the domain industry, that future is the new gTLD programme. Hundreds have launched. When .eu first blossomed, it did so in a general context of twenty-odd gTLDs and less than 400 country code suffixes. New gTLDs have shaken up that landscape like an earthquake in a disaster movie. Ten years after .eu launched, there are now close to 1000 more TLDs to choose from.

Granted, not all are open to the general public. Nonetheless, the domain name consumer has never been so spoilt for choice. At the same time, obligations placed on TLD operators have become much more stringent. As the industry has matured, so has its governing bodies. In the gTLD space, registries sometimes face extreme requirements just to stay compliant with the ICANN contract, which is their license to operate.

EURid has a clear edge here. It has a very sound base of over 3.8 million domains under management. It does not answer to ICANN and its often US-centric view of the world. But .eu is now finding itself in direct competition with many more TLDs than ever before. *"For a registry, the new battleground is the registrar community,"* says Van Wesemael. *"Because they have so much more choice in*

the products they can carry, but still only a limited amount of shelf space to show those products off to their customers, they will support those TLDs *that make their lives easy and bring them the highest levels of added value."*

EPIPHANY

With his background in customer support and sales, EURid's General Manager saw this shifting trend in the domain industry a while ago. He cites the Lisbon ICANN meeting in March 2007[II] as an epiphany moment. EURid held a registrar meeting there and, as Van Wesemael listened to the conversations in the room, what he heard was frustration and criticism.

He realised he'd allowed himself to be swallowed up in what had become the norm for TLD registries in the pre-new-gTLD era. *"A certain level of arrogance was a given,"* he whispers. There wasn't that much competition. The registries were in a position to dictate to a registrar community who desperately needed their products to ensure their own commercial viability. For a registry at that time, the incentive to actually listen to your sales partners wasn't that strong.

After Lisbon, Van Wesemael decided a cultural shift was needed at EURid. Under the call to arms "In search of excellence", he introduced organisational changes that spanned the whole organisation. The phrase he used is the title of one of the best-selling business books of all time, written by Peters and Waterman and published in 1982.

The new order turned everything upside down. As he launched the new initiative, Van Wesemael told his staff: *"Assume you have full authority to do what you feel must be done, unless or until someone stops you."* Up to then, EURid had operated with the top-down mentality of most organisations. Although staff are not empowered to take initiative, they are often on the front line when it comes to dealing with customer issues.

"We turned the helpdesk people into registrar account managers," Van Wesemael explains. *"Their brief was to get much closer to their customers. To make the registrars' problems their own. To put themselves in the registrars' shoes and fully understand their needs."*

Management, too, would need to have a change of mind-set. *"People have the right to make mistakes,"* Van Wesemael told them. *"Those who don't are probably not trying to do anything at all."* The message was clear: become a force of positive support to your team, rather than merely offering negative criticism.

Van Wesemael gave his new programme 3 key parameters: empathy, knowledge and enthusiasm. As he asked the managers to be agents of positive change, he also asked staff to take responsibility for their own actions. *"Don't blindly follow instructions as an excuse for not thinking about whether something would not be done better in a different way,"* he told them.

He wanted everyone at EURid to display empathy towards customer needs, to have a thorough understanding of the issues they faced, and to be enthusiastic about the business. *"Enthusiasm is contagious! If we are not excited about .eu, we can't expect our customers to be."*

To implement this bold new strategy, Van Wesemael needed a point man. Giovanni Seppia was interested.

"I knew that Marc was looking for someone to build the external relations department at EURid," says Seppia. *"At that time, the department was tasked with providing support to all the registrars and registrants, in the official EU languages – there were 23 then. They were also looking after procedures that were still being done manually, like bulk transfers or trades."*

EXTERNAL RELATIONS

Seppia had done similar work during his tenure at the Italian registry. He felt ready to take up the same kind of challenge, albeit on a larger scale, at .eu. Especially as the situation at EURid was far from being as dire.

"When I was working at .it, the call centre was receiving about 8 incoming calls per minute. Crazy. And there were about 1,000 e-mails from end-users and registrars to respond to every day. Although EURid was serving a much bigger market, the numbers were much smaller."

Seppia started in his new position at the end of the first quarter of 2008. Just as Van Wesemael had kicked off EURid's overall change of strategy by presenting it to the full staff under the "In search of excellence" banner, Seppia chose to rally his own team around the new ideals he wanted to see them make their own.

A retreat was organised, the first time the external relations team had ever gathered together in one spot for some high-level strategy work. *"It was a great way to motivate them, to get them to share the problems they were seeing and where improvements were needed,"* says Seppia. *"The impact was felt immediately. The team pushed harder and, over the past 6, 7 years, we've seen the team's role expand to*

marketing and reseller. The team has really become the channel for driving .eu's growth."

With new gTLDs now a reality, Seppia's team is set on a course of continuous improvement, with the goal of being more professional than ever. With more than 20 people, External Relations is well structured to look after EURid's customers. The team is split between the Diegem office in Belgium and the 3 regional offices in Stockholm, Pisa and Prague. Seppia manages the team centrally from Diegem and visits each office at least once every quarter.

The External Relations team is designed to provide the best possible service to registrars, and hence motivate them to keep .eu at the top of their shopping lists. To guarantee continued excellence, it keeps a watchful eye on its own performance to make sure it is still up to par with the customers' expectations. *"We monitor our performance to make sure we are meeting the registrars' expectations. For example, we have KPIs for responsiveness so that, when a call or an e-mail comes in, the team knows it has to be answered in a set number of hours. We've also set growth targets in the different regions."*

EURid's customer service is built around the idea that .eu is not just another TLD. This is engrained in the very DNA of Seppia's team. The product is Europe's identity online. It represents the European Union. *"It's a bit like providing a public service in a way,"* Seppia adds. *"We feel we are looking after a public resource, working for the public interest."*

IGNORANCE IS NOT BLISS

EURid is a European organisation providing a crucial service for Europeans. A statement of fact, but also a guiding principle for the .eu operator. Ensuring .eu's future means making sure Europe remains a major player on the Internet.

EURid's responsibility is to consider ideas that may not seem necessary yet. Developments that users don't even know they might one day want. Even if doing so means fighting for years to make change happen.

A good example of this is Internationalised Domain Names, or IDNs.

On June 26, 2009, the European Commission proudly announced the imminent arrival of new types of .eu domain names. *"Three years after its launch, .eu has become the valued option for an increasing number of businesses and citizens who want to choose a European Internet identity,"* said Viviane Reding who

was the EU's Commissioner for Information Society and Media in 2009[III]. *"Opting for .eu is a very simple way for businesses to show that they are established in one of the 27 EU countries and subject to the high standards of EU legislation, particularly when it comes to data protection, consumer rules or the EU's financial market regulations. So, it's only natural that the domain names chosen by Europeans be permitted to be as diverse as Europe itself. This is why we have decided that .eu should become available in all of the alphabets used in the Member States."*

"The European Commission today amended the rules for .eu so that it is possible for Internet users to register .eu domain names using different alphabets such as Cyrillic or Greek. Until now, domain names registered under the .eu Top Level Domain could only contain the characters 'a' to 'z', digits '0' to '9' and '-'. In future, it will be possible to register names using characters such as 'à', 'ą', 'ä', 'ψ' or 'д' under '.eu'. EU citizens and businesses will be able to register domain names in non-Latin scripts, which is essential for languages such as Greek and Bulgarian."

So EURid started working on bringing alternative script versions of the 2-letter code .eu to the European Internet user. Seven years later, on December 2, 2015, ICANN announced *"the successful evaluation of the proposed IDN ccTLD string in Cyrillic script for the European Commission."*[IV]

Taken out of context, this announcement makes it sound like keeping .eu in the technological vanguard of the domain industry was plain sailing. In fact, nothing could be further from the truth.

In their efforts to add Greek and Cyrillic versions of .eu to the existing Latin character TLD, EURid and the European Commission faced a disheartening lack of understanding and cooperation.

Europeans clearly understand the high level of technical coordination needed to safely introduce a new addressing technology to the Internet. EURid had closely followed ICANN's introduction of its IDN ccTLD Fast Track programme, which was approved by the ICANN Board at its Korean meeting in 2009[V] with the explicit intent of allowing national governments to better serve their citizens by helping them access the Internet in their own alphabets. A laudable logic – that didn't seem to apply to Europe.

"I participated in all the discussion meetings held on this by ICANN, and I think the organisation failed to be community-oriented," Seppia says. *"The IDN ccTLD Fast Track really should have been seen as an experimental moment. Instead, ICANN approached it in a very procedural – very bureaucratic – way."*

After the Korean meeting's approval of a process apparently designed to

achieve exactly what the European authorities had in mind, EURid met with ICANN staff during both subsequent meetings – in Nairobi in March 2010[VI], and on the registry's home turf in Brussels in June of that same year[VII]. The idea was to get guidance from ICANN on the proper way to apply for these IDN TLDs.

"When we told them of the 2 TLDs we wanted, I think there was a total lack of competence from the ICANN people at the other end of the table," Seppia criticises. *"Their answer was: the only way to know if your TLDs are OK is to apply! They didn't understand that, by applying, the European Commission would have no further opportunity to consult with Member States and look for alternatives."*

"Up to then, the European Commission had explained to ICANN that there was still time to go back to the Member States and say that one of the 2 TLDs did not meet the requirements and that an alternative should be chosen. This was explained to ICANN in over 30 languages! But it was like talking to a wall."

"So we had to apply, and then the whole '.eu in Greek' saga started."

FROM THE RIDICULOUS TO THE... EVEN MORE RIDICULOUS!

ICANN's apparent inability to understand the politics of a situation as sensitive as language, culture and scripts may leave lasting damage. Especially in the context of a union as complex as the EU. Seppia harbours no ill will towards the organisation that once employed him. Yet, ICANN's convolutions and circumventions have left even him with a bitter aftertaste.

"Initially, the Greek .eu application was rejected because we were told we were too similar to an existing TLD. We were surprised and pressed them for more details. During an informal lunch meeting, we were told that we were actually too similar to... ourselves!"

Bewilderment at the unfathomable logic ICANN seemed to be applying to this case soon turned to ire, as ICANN then proceeded to ask EURid to pledge that, if they were to be given .eu in Greek, they would only support domain names in the same script, both at the 2nd level and at the top level.

The Greek script version of 'eu' is spelled with the letters epsilon and upsilon: ευ in lower case or EY in capitals. Neither version is comparable to an existing Internet Top Level Domain. Not only did ICANN's request not have any basis in fact, it was tantamount to direct interference in Europe's policy for non-Latin scripts as domain names in .eu.

This policy had been wrought by a public body. The European Commission had been explicit in allowing Greek script at the second level in the ASCII version of the .eu TLD. Yet ICANN would have had the Commission rewrite those rules to exclude all Greek characters in .eu and allow them only in the Greek .ευ.

Despite apparently flying in the face of the public interest, nothing was going to stop this madness.

"After that, the application was rejected a second time because ICANN determined that we were confusingly similar to 2 other strings in the ISO list[1]. One of the 2 strings is not assigned. The other is assigned to an organisation called the European Patent Organisation[VIII]*. This organisation told us, and the Commission, that they would never use the string as a country code!"*

In 2014, EURid was informed that an ICANN-selected panel of linguists had re-evaluated Europe's IDN TLD request and determined that the Greek .eu was no longer confusingly similar to the aforementioned strings... in lower case!

According to the panel, the risk of Internet users finding the IDN .eu confusingly similar to an existing string still remained when one of them was written in upper case.

Apparently, this is something the ICANN rules hadn't even envisioned. Hence, no decision on whether Europe should be able to deploy .eu in non-Latin scripts...

"The most ridiculous thing is that, in the new gTLD programme, ICANN has allowed TLDs like .car and .cars to coexist," Seppia objects – referring to the fact that singular and plural versions of the same word are not deemed likely to confuse Internet users, even though they may not even be operated by the same registries, or use the same registration rules: *"But something that is written in a totally different script is."*

Even though this alleged similarity is like saying a younger and an older version of yourself should not be allowed to coexist, it is not very likely to happen because the two could never meet.

"We are talking about a similarity between two things that do not coexist in the same environment! For example, type kalimera.eu in Greek, so Epsilon Upsilon.

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[1] Used as the reference list for determining confusing similarity in the ccTLD Fast Track process : https://www.icann.org/en/system/files/files/idn-cctld-implementation-plan-05nov13-en.pdf

Then type kalimera.ey, which is one of the two strings that was deemed confusingly similar. Kalimera.eu in Greek may resolve, there may be a website that goes with it. But because .ey is not a delegated TLD*, kalimera.ey would never resolve. So there is no risk of confusing similarity. An Internet user cannot be taken to a fraudulent environment, because it simply does not exist!"*

As EURid continues to look to what .eu's future should be, ICANN's IDN debacle is like a stain on a new shirt. *"*ICANN *really has made a mess of this. And it was made even worse by the fact that, since Paul Twomey*[1]*, every 6 months every* ICANN CEO *has made a commitment to all the European Commissioners in charge of this at the Commission that they would sort it out. We've been told this since 2010. So Viviane Reding, Neelie Kroes, and now the cabinet of Mr Ansip*[2]*… all have been told by the various* ICANN CEOS *that the matter would be resolved inside of 6 months."*

"What ICANN *doesn't understand is that this is generating false hopes at the Commission, which reports to the European Parliament. So, when the European Parliament asks how this is going, the Commission can only respond that, according to* ICANN*, it will be sorted out in 6 months. Then, 6 months later, the Parliament checks in with the Commission, and the Commission can only say that what* ICANN *told them was not actually true…"*

However, EURid's instance has finally started to pay off. In December 2015, ICANN announced that the Cyrillic version of the .eu suffix had been approved at last…[IX]

A STRONGER CONNECTED EUROPE

Despite these problems, .eu has clearly made a huge difference to the way Europeans use and benefit from the Internet. A mission that is described by the European Commission[X] as complementing existing Internet suffixes by giving *"users the option of having a pan-European Internet identity for their Internet presence. For citizens, this* TLD *is a place in cyberspace in which their rights as consumers and individuals are protected by European rules, standards and courts."*

"For companies, a .eu enhances their Internet visibility within and beyond the EU *single market, advertises their pan-European outlook, and provides greater certainty*

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[1] ICANN CEO from 2003 to 2009.

[2] Former Prime Minister of Estonia and current Vice President of the European Commission and Commissioner for the Digital Single Market: https://ec.europa.eu/commission/2014-2019/ansip_en

as to the law, which should in turn foster electronic commerce and boost economic competitiveness and growth."

So, as it looks to its own future, .eu does so understanding that it has been successful in meeting its original goals.

"Before .eu, firms wishing to take advantage of the single market were obliged either to base their Internet presence in one country or to create websites in each of the EU *countries in which they operate,"* the Commission asserts.

Christopher Wilkinson agrees that this is an accurate measure of the contribution .eu has made to building a unified Europe. *"Travelling in Europe shows how effective .eu has been in building this identity. Who is the most effective user of .eu domain names? As you can clearly see whenever you drive on Europe's motorways, it's the international transport companies. If you're from Poland, Romania or another place where the national code is almost undecipherable, you can get a .eu name and use the same domain throughout your business, and throughout the European continent."*

"So I think that goal has been achieved. Not only for electronic commerce, but for any company. Especially new companies and SMEs*."*

Providing a true public service is prevalent in all aspects of the management of .eu, both at EURid and the Commission. The collaborative approach described by EURid's technical team is not bluster. It's the underlying philosophy that has helped .eu become a crucial TLD. Not just in terms of domain name use, but also by giving Europe more clout in the international arena.

Today, .eu is recognised by its peers in the domain arena. So is Europe. *"In the ccTLD community such as* CENTR *and the* ccNSO[XI]*,* EURid *has gained standing as a major ccTLD,"* Wilkinson points out. *"Considering the fact that all the other ccTLDs of the same scale are 15 to 20 years older, the extent to which* EURid *has caught up with the leaders in the industry is quite remarkable. That has given our representatives significant standing. The fact that Giovanni Seppia was just elected Chairman of the* CENTR *Board of Directors is an illustration of this."*[1]

Having to look after a successful TLD has also invigorated Europe's politicians into a greater sense of responsibility towards what happens in the once-obscure corridors of Internet governance.

"I think .eu's success has also helped in the political arena," Wilkinson confirms. *"The Commission has probably changed status within the* GAC*, but they've also realised that, as the political authority responsible for* EURid *and .eu, they have to be more involved."*

[1] In March 2015: https://centr.org/about

"The Commission is putting more staff and work into Internet governance across the board – not just ICANN*, but also the* IGF[1]*, Eurodig*[2] *and elsewhere – in a way in which they were certainly not doing before .eu. I think one of the reasons for that is that they've discovered that they are actually wearing rather big shoes and a large overcoat, and that they'd better be as big as the clothes they've inherited."*

"When I was at the Commission, there was no interest above my level. Today, the level of interest in Internet governance at the Commission goes much higher. I think one thing led to another. Vivian Reding became Commissioner and suddenly discovered she had a success story in her portfolio! The Commission put up that enormous poster on the Berlaymont[3] *building which read: .eu, your identity in Europe, more than 3 million names!"*

LEARNING TOGETHER

As Europe's civil servants have become sensitive to the importance of the political gravitas .eu has given the Continent, so has EURid stepped up its own efforts to share the experience brought by years of managing .eu.

It's all about passing that knowledge on and making sure it serves the greater good.

A recent EURid initiative, the .eu Academy[XII], is the exact embodiment of these values. *"With over 50 years of cumulative experience in the domain name system industry,* EURid *management is pleased to announce the launch of the .eu Academy,"* says an August 2015 EURid press release. *"The initiative's goal is to contribute to the education of industry peers, registrars and future generations about the basics of the Internet, its history, functioning and marketing-administrative-security-legal facets. The Academy's motto – 'we'll learn together' – will be the basis for various actions planned."*

By sharing best practices with fellow registries and TLD operators, by educating registrars, and by fostering DNS classes in colleges and universities, EURid hopes that tomorrow's Internet will be made stronger. Because everyone is working together.

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[1] The Internet Governance Forum is a multi-stakeholder platform designed to foster discussion of key public policy issues pertaining to the Internet: http://www.intgovforum.org/cms/

[2] Similar to the IGF, the Pan-European dialogue on Internet governance is a discussion forum set at European level: http://www.eurodig.org/about/

[3] The Berlaymont is home to the European Commission headquarters in Brussels, Belgium.

EURid feels a responsibility to educate Europeans – be they students or active domain name registration companies – because that fits with the public service mission thrust upon its shoulders when the European Commission signed that first contract in 2004.

Examples of concrete actions include:

- raising awareness about DNS technical, policy and business aspects,
- encouraging participation in the different regional and global fora relating to DNS,
- supporting the growth of the domain name industry in Africa and the Middle East,
- conducting educational workshops to share Registry / Registrar business and operational best practices, and
- promoting the use of Internationalised Domain Names (IDNs).

VIRTUOUS CIRCLE

When the whole domain name ecosystem thrives, everyone benefits. As the gateway to the Internet, domain names are a key part of this world-changing invention. The easier they are to register, the safer they are to use, the more desirable they will be.

As EURid celebrates .eu's first decade, there is some real avant-garde thinking going on about what the future could bring. Take Yadifa[XIII]. Built by EURid's tech team, this open source technology is designed to bring enhanced performance to the way domain name database management is done. It's also meant to be shared, and to serve the Internet community as a whole.

And what about free domains? As Giovanni Seppia explains, that could be an option under some very specific conditions. EURid's brainstormers are really prepared to push the envelope far beyond current market practices as they search for bold new ideas.

"At some point, if we really want .eu to be the domain name for Europeans and offer a stronger alternative to US-based domain services, there has to be a way to empower the European user to have it as a public service," says Seppia. *"And why not as a free public service."*

The concept of a free domain name is anathema to a domain industry dependant on revenue from domain registrations. Yet it's not as new as it may sound.

Free distribution models – such as the one used for .tk – where the revenue comes from advertising rather than registrations, have existed for several years.

But there are issues.

In general, providing a free service on the Internet has tended to decrease the perception of value for users of that service.

Also, for the domain industry specifically, there are real (and sometimes hefty) costs involved in maintaining high levels of service excellence, technical performance and security requirements.

Change may not come immediately – but to fulfil its true ambition, .eu has to at least consider shaking up the established mould. *"For the near future, I don't see many changes coming,"* admits Seppia. *"I'd say .eu will continue as it is now, with the possibility of perhaps having* IDN *versions at the top level. There will be some refinements brought to our marketing. Things like that. If realistic at all, the free model is more what I could see in 20 years' time, when the landscape will be completely different. And I think the people behind .eu at a political level should start thinking about that now, not in another 10 years."*

Enacting bold new ideas always takes time and open minds. There are enough obstacles standing in the way of a free .eu that it may never become realistic.

Or maybe it will. As a mechanism for thinking outside the box, the Internet is peerless. It has broken down frontiers and borders. It has eluded state or commercial control. It is by nature a decentralised system made to be difficult to manage centrally. This reality has to be taken into account by governments and citizens who want the best of both worlds: the dynamism of this new medium with the safety of old-world laws and habits.

Because they already exist in other TLDs, EURid had to start thinking about free domains in .eu. The commercial equation is actually a red herring to the real concern: Trust.

I HAVE A DREAM!

Making the Internet more secure will make it more trustworthy. Users of .eu domains know there is a precise set of regulations behind the TLD. That may not be the case for those rare TLDs that market themselves through a free model dependant on advertising revenue for its continued existence.

Europe has privacy rules and .eu has to abide by them. For example, EURid cannot allow .eu to be used as a tool to spy on users or filter content.

To EURid, building trust is the real future. Based on some of the technology it has developed for the Yafida project, the registry is currently working on advanced systems using predictive analysis.

By combining historical analysis, the characteristics of the domain name being registered, and self-learning algorithms, EURid wants to provide its user base with new ways to fight abusive domain name registrations.

Imagine a registry database query that would return warnings on potential infringements when you enter a search term as an intended domain name registration? Currently, WHOIS responses are binary. The domain name is either available, or it isn't. It would be useful to be informed that, although it may be available, registering it might also mean you risk walking on someone else's law.

For now, these ideas are still science fiction. But from Christopher Wilkinson's initial European TLD ambition, through the technical courage of Peter Janssen's team, to the service-minded approach of Giovanni Seppia, .eu has been constructed and operated as a mould breaker.

As EURid General Manager, Marc Van Wesemael's first obligation is to make the European Commission's dream come true – to empower all Europeans by providing them with a financially accessible, state-of-the-art, secure and flexible online identity: *.eu*.

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