ANNUAL REPORT AND FINANCIAL STATEMENT

2020

eco

ASSOCIATION OF THE
INTERNET INDUSTRY

Content

Oliver J. Süme
Attorney-at-Law
Chair of the Board
Board Member for Policy, Law & Regulations

1. Foreword

Dear Readers,

2020 was an extraordinary year in every respect. Aside from all the negative and alarming elements ushered in by the Covid-19 pandemic, the year also showed us just how much potential there is in digital technologies and services if we use them decisively, responsibly and purposefully.

The crisis led to a surge in digitalisation and proved – even to those who are somewhat sceptical about the digital transformation – that digitalisation is not only a basic prerequisite for a revival of the overall economy and lasting global competitiveness, but that it is also part of the solution to many challenges that we will have to face in the coming years. Such challenges will have to be tackled with or without a pandemic – be it dealing with the climate crisis, demographic change or the constant struggle for justice, democracy and participation around the world.

The positive narrative on digitalisation was also the thinking behind our anniversary motto "25 Years of eco – 25 Years of Internet with Responsibility". The motto reflects how we see ourselves: namely, as an association with integrity. Because eco does not stand for an Internet in which only the strongest govern, nor for a digital economy that will simply do anything that is technically possible. We stand for a democratic, free Internet and a level of digitalisation that makes life better and more worth living for as many people as possible. I am glad to see that this message has repeatedly found its way into the media and politics, despite – or even due to! – the Covid crisis, given that the pandemic overshadowed everything and more than once threw our anniversary plans off course. This message is strongly evident in the numerous congratulatory messages and greetings that we have received from politics and business, from federal and state ministries, and from executive boards.

I am proud of how, as an association, we have been able to get through this disruptive year together with you, our members and our colleagues. We have learned to work together from the home office and have relocated many of our events to take place online. With our predominantly online events, we were able to reach over 6,800 attendees in 2020 - that's actually 70 percent more than had attended our on-site events the previous year! The outcomes and the resonance from you, partners and participants are both an honour and a motivation. Of course, like all of you, I hope that the vaccination campaign in particular will make more contact and in-person meetings possible again in the near future. At the same time, I am sure that we will take some of the lessons and experiences from this year with us into the post-Covid times and, for instance, make much greater use of digital technologies in communicating and working with each other.

In Germany, the year 2021 raises hopes that with a new federal government to be elected in September, there could also be a reorientation of digital policy in this country. And now is the time to define strategically-relevant topics and goals for the parties' election programmes. Our demand: Digital policy must be elevated from being a niche topic in federal politics to becoming the centre and focus of any new federal government.

In the run-up to the federal election, this and other core digital policy demands of the Internet industry will of course be purposefully placed on the media agenda as part of our campaign, "The Vote for Digital 21", and will be included in our exchange with leading digital politicians.

I'm looking forward to once again thinking challenges through holistically this year and, together with you, to coming up with joint solutions that benefit society as well as the economy and Europe as a digital location. The European infrastructure project Gaia-X, which was successfully launched last year with eco's support, and whose implementation we will continue to actively support in the future in the context of the federation services, can become a blueprint for jointly tackling global challenges. Gaia-X shows just how much we can achieve when society, business and politics work together.

On this note, I would like to thank all members and partners, my colleagues on the eco Board, eco's management team and, of course, all employees for their excellent and trustful cooperation in the past year.

Your

Oliver J. Süme

Harald A. Summa
Chief Executive Officer

2. *Report from the Management*

2.1 Out of the Crisis Through Connections

2020 was a year that will go down in history. Triggered by the coronavirus, the world was hit by a crisis that brought about multiple changes. While the Covid crisis is primarily a health crisis, the fact that the virus spread around the world and affected all segments of the population means that it induced an economic crisis, an education crisis, a scientific crisis, a democracy crisis and – depending on how each of us sees it – a chain of other crises that may continue indefinitely.

From the perspective of the Association of the Internet Industry, the Covid crisis is also a crisis when it comes to connections. In this regard, when we think about it, it's clear that the most important task of eco is to connect people from different companies and different sectors. No part of what eco gets up and running could succeed without these connections. And then, in this year of all years, the virus erupted in our anniversary year, a time when we were celebrating what we have achieved together in the last 25 years.

Figuring out how it could be tackled was not particularly difficult. Covid had barely entered

the world before how we could get rid of it very quickly became clear. If all 7.8 billion people simply stayed away from each other for a fortnight, Covid would be swiftly eradicated. Unfortunately, what became clear just as quickly was that it would not be quite that simple.

The reason being: While many of us had the privilege of being able to isolate ourselves to a large extent, this was simply not possible for many others, whose essential roles were highlighted in 2020; here, for example, I am thinking of the likes of carers. The perfidious thing about this virus is that recognising its

simplicity is not difficult. It just has to exploit our need for connection.

Fortunately for all, modern information technology was advanced enough in 2020 to enable many basic interactions to be shifted to the digital world. While we certainly don't want to overlook bottlenecks, malfunctions, injustices and tasks that are still urgently required, what the IT industry has done for working from home and home-schooling – and hence for the survival of many companies and the economy as a whole – deserves recognition.

Just how serious the transition was, and just how difficult it was – even for the digital pioneers in our industry – becomes clear from some of the articles in the annual report that look back on the extremely unusual year of 2020. Digital competence is one thing, but switching to digital tools overnight is quite another. The fact that we were able to continue our activities seamlessly and without obstruction throughout the entire year, and still come up with quite a few innovations in the process, is not something that can be taken for granted,

even for an Internet association. That, too, deserves recognition.

Digital infrastructure and the digital economy are critical for our solidarity and for our future. In the wake of Covid, there is definitely no need for any further debate on these matters. But we are certainly not running out of work because of it. On the contrary. As the digital world contributes to the economy and society in rapidly increasing and more complex ways, our remit as an association is evolving.

Technical progress has been completely unswayed by the crisis. In fact, in many instances it has been spurred on by the increased visibility of construction sites and associated surges in innovation. The digital ecosystem became even more diverse and complex in 2020. Personal mobility, for example, has been curtailed in Covid times, but work on the future of mobility has by no means been suspended. Connected mobility, autonomous driving, e-mobility and Smart City are already generating data characterised by hitherto unseen quality and quantity. Much of this data

is important not only for reasons of efficiency and sustainability, but also for purposes of privacy and physical security.

In 2020, we experienced a steep learning curve when it came to dealing with whether and how people can stay connected in a way which is Covid-compliant. This knowledge now features as part of the common good. When it comes to the importance of data and connections in digital space, society is still comparatively naïve. But there is no time to take a breather. It is up to us experts to shape our digital world in a manner where we live up to our responsibility.

The impending increased demand for services, including the associated platforms and infrastructures, can hardly be met with today's resources. To become fit for the future, closing old investment gaps would not go far enough. Instead, it is now time to quickly stake the claims that the future will bring. As a representative body for the Internet industry, in 2020 we did not pass up on a single opportunity to contribute our expertise to national and international policy and civil society bodies.

Above all, however, we were also able to benefit greatly in 2020 from the most important resource that an association like ours can have: our members. More than 1,100 companies are now assembled under our umbrella. An impressive collection of highly innovative and successful companies – all the more so when I consider how actively eco members shape the association's activities.

Ultimately, it isn't a company's membership that determines whether eco is successful or not – it is the commitment of individuals who inspire others with their passion and who, time and again, inspired me in 2020, in spite of all the year's adversities. These are personal connections with even more diversity and reliability than I could possibly hope for.

With your help, eco managed to build on the achievements of previous years in the difficult year of 2020: You worked with us on our topics and championed your topic over and above the boundaries of your own company. In times of perceived standstill, you have been committed to ensuring that digital life sustains analogue

life. Thanks to you, vital connections have been preserved.

I have great respect for what you have achieved – and it gives me a lot of confidence that we are shaping our digital future very well together!

Your

Harald A. Summa

Alexander Rabe
Managing Director

2.2 With Agility Through the Crisis Towards a Sustainable Digital Future

At eco, the picture in our heads of what our 25th anniversary year would look like was definitely different from how it turned out. In the first quarter of 2020, many of our plans for this special birthday were overtaken by the reality of the Covid crisis. But to quote John Lennon: "Life is what happens while you are busy making other plans."

Thus, the Covid crisis and its related reactions and actions suddenly gave our anniversary motto "25 Years of eco – 25 Years of Internet with Responsibility" a completely new, but entirely appropriate, context: What the crisis has shown each and every one of us – and also parties who were previously rather sceptical

about digital technologies – is that digitalisation, the Internet, offers solutions for many of the challenges presented by Covid.

Even at eco itself, our own Covid strategy gave us the chance to experience this in a very practical way: For example, the work-from-home requirement for all employees has been in effect at eco since 16 March 2020, and we have learned a lot during this time, especially that personal contact with our employees, our members, and our numerous contacts in state, federal and European politics did not have to suffer as a consequence.

Because despite lockdown and social distancing, despite working from home or home-

schooling, digital infrastructures, along with digital technologies and applications, have kept the show on the road. As such, "With Agility Through the Crisis" has been our motto since 2020.

More than ever before, it has been recognised that resilient and reliable digital infrastructures and technologies are now indispensable tools for shaping our social and economic lives.

And not only that: Digital infrastructures have also demonstrated their contribution to achieving the climate goals. In 2020 – the year of the Covid crisis – CO2 emissions in Germany fell significantly.

This is no coincidence – thanks to digital solutions, business trips could be dispensed with and even the daily commute to the office was substituted in these times by home office applications.

Greenpeace has calculated – conservatively – that one day per week working from home could save 1.6 million tonnes of CO2 per year in Germany alone. The University of Freiburg has also recently conclusively proven that every video conference saves a colossal 99 per cent of CO2 compared to a business trip undertaken for a conference-type event.

It goes without saying that digitalisation needs energy. If it's appropriately managed, however,

digitalisation will significantly reduce the CO2 footprint of our societal and economic activities in the medium term. Digital infrastructures are therefore part of the solution and contribute to the UN's 17 Sustainable Development Goals (SDGs), and not only in ecological terms: I am proud that our industry and above all, our members, are already shaping this sustainable, digital future today and at the same time are striving to become even better.

In this regard, under the umbrella of the Alliance for the Strengthening of Digital Infrastructures in Germany, which was founded in 2018 by eco, we have been working intensively since 2020 on these relevant facets of digitalisation and on topics such as the utilisation of waste heat from data centres.

In Frankfurt alone, home of DE-CIX – the world's largest Internet Exchange – almost all of the city's homes and offices could be heated in a CO_2-neutral manner by 2030 through the utilisation of waste heat from data centres.

Whether it concerns hyperscalers, colocation, cloud infrastructure providers or edge computing – we always take a holistic view of sustainability.

Because a modern and high-performance eco-system of digital infrastructures is absolutely essential for sustainable digitalisation. Broadband roll-out is still also a major determining factor in this regard. Switching data traffic to fibre optics alone can save up to 50 percent of the energy required compared to the copper cable transmission paths. Mobile Internet applications, which are becoming more and more popular, can also tap into enormous savings potential through the use of 5G – compared to 3G, here we are talking about up to 80 percent energy savings, according to a recent study by the "Green Cloud Computing" research project. Last but not least: Digital education is also an essential sustainability factor and must finally become an integral part of teaching in all schools and education establishments – just as computer scientists must learn, as part of their training, to programme energy-efficient algorithms through green coding, in order to further reduce the energy consumption of data centres.

Everything is interconnected. We need to shape this sustainable digital future in an accordingly responsible and collaborative manner.

And you can be certain of one thing: As the Association of the Internet Industry, we will shape this sustainable, digital future over the next 25 years with just as much passion as we have invested in laying the foundations for it in the past 25 years. And one thing remains the same: We will only achieve these goals together with you.

With this in mind, I look forward to our exchange with you and wish you an informative and hopefully a stimulating read of our eco Annual Report 2020.

Stay healthy!

Cordially yours

Alexander Rabe

3. Association Development

3.1 Finances

The year 2020 was a very special year for eco – Association of the Internet Industry, in which the special challenges of the Covid pandemic had to be managed in addition to the usual tasks of maintaining the regular association business.

We started converting all our face-to-face event formats to purely virtual events at the beginning of 2020, so that we were able to run all our standard formats, with a few exceptions.

The expansion and the subsequent perfecting of virtual event formats helped the eco Academy to steadily increase its number of participants.

The absolute highlight was our 25th anniversary, which was held under the motto of "25 Years of Internet with Responsibility". With over 400 participants, a huge birthday celebration commenced completely online on 26 June 2020. In addition to personalities from politics and business, those that added the perfect touch to the celebrations were our companions from the last 25 years who relayed countless congratulatory video messages.

eco's recipe for success for constantly and rapidly adapting to changing framework conditions is also reflected in the revenue and expenditure statement for 2020.

The first adjustment of membership fees since eco's establishment, effective as of 01.01.2020, caused a good 15% increase in income from membership fees. Service revenues and other revenues also developed on a very satisfactory basis.

Across all revenue items, the eco Association generated a significant increase

The slight reduction of 1.7% in funding contributions is due to the pandemic and the cancellation of some events and workshops – which will, however, be made up for in 2021.

There was an equivalent effect on the funding of the eco Complaints Office; apart from the reduced travel volume, the funding remained constant and can still be planned for in the future.

The subsidised Service-Meister project got off to a very successful start, even or perhaps because of its digitalisation aspect. Here, the initial deficits of the Covid-related downtime

could be well compensated for through restructuring processes.

The pandemic ramifications had a significant impact on the Auditor project, which was temporarily suspended, as a result of which the funding income was shifted to the following year.

We are very confident that all projects will continue in 2021 and resume at full speed.

In 2020, the European initiative Gaia-X was launched. The overall objective of Gaia-X is to design a federated data infrastructure with a focus on data sovereignty and data availability, based on European standards and values and the associated promotion of innovation in Europe. At the end of 2020, the "Gaia-X Federation Services (GXFS)" project, which is funded by the German Federal Ministry for Economic Affairs and Energy (BMWi) to the tune of around 13.5 million Euro, also started under eco's leadership. eco will specify the Gaia-X Federation Services together with partners and subsequently make them available in an open-source format for federation within the Gaia-X ecosystem.

Expenditure grew in proportion to income, so that the eco Association was able to successfully close the year 2020 with a balanced result.

In the process, expenditure items directly related to working time on-site in the office were reduced, whereas administrative and marketing costs were at a high level.

The subsidiary eco IT Service und Beratung GmbH was merged into eco Service GmbH on 1 January 2020 due to economic optimisation. As a result of higher sponsorship income and slightly declining costs, eco Service GmbH achieved a reasonable profit in 2020.

In the budget for the 2021 financial year, the eco Association assumes a moderate increase in membership fees and higher external funding contributions, so that a balanced result is expected, with planned small increases in expenditure.

Revenue and Expenditure for the Financial Year 2020					Budget for the Financial Year 2021	
eco e.V.	Actual Value 2020 in Euro	Percentage	Actual Value 2019 in Euro	Change from preceding year in percent	Planned for 2021 in Euro	Percentage
Income						
Member fees	2,211,900	54.8%	1,913,879	15.6%	2,225,774	54.5%
Public funding	519,756	12.9%	528,813	-1.7%	797,669	19.5%
Generated proceeds	985,408	24.4%	931,392	5.8%	910,600	22.3%
Other*	322,468	8.0%	278,785	15.7%	152,680	3.7%
Total revenue	4,039,532	100.0%	3,652,869	10.6%	4,086,723	100.0%
Expenditure						
Personnel costs	2,092,481	52.2%	1,874,404	11.6%	2,225,609	54.6%
Administrative costs	423,580	10.6%	156,481	170.7%	422,890	10.4%
Occupancy costs	143,985	3.6%	140,570	2.4%	158,291	3.9%
Contributions	36,982	0.9%	50,783	-27.2%	45,200	1.1%
Travel costs	42,192	1.1%	129,414	-67.4%	114,009	2.8%
Investments	17,096	0.4%	24,826	-31.1%	30,000	0.7%
Marketing/Projects	1,111,486	27.7%	1,038,312	7.0%	966,000	23.7%
Administrative/accounting/ legal costs	65,620	1.6%	77,029	-14.8%	55,000	1.4%
Other/taxes**	72,956	1.8%	125,845	-42.0%	56,458	1.4%
Total expenditure	4,006,378	100.0%	3,617,664	10.7%	4,073,457	100.0%
Surplus/deficit	33,154		35,205		13,266	

* Other revenue: including data protection officer, offsetting intercompany costs and charging benefits for cars, reimbursement of advanced costs, etc.

** Other expenditure: Bank fees, artists' social security contributions, insurances, further education, advanced costs, etc.

Katrin Mielke
Membership Manager

3.2 Europe's Largest Internet Association

With now more than 1,100 member companies from over 70 countries, eco is the largest Internet association in Europe.

Since its foundation in 1995, eco has played a decisive role in shaping the development of the Internet. The association promotes new technologies, infrastructures and markets, forms framework conditions, and represents the interests of its members vis-à-vis politics and in (inter)national committees. Key topics are reliability and the strengthening of digital infrastructure, IT security and trust, as well as ethics and self-regulation. eco is committed to a free, technologically-neutral and network-neutral Internet.

In more than 65 online events, eco members received information on crucial current as well as future developments and, together with experts, developed guidelines and quality standards for the market. eco enables members to engage in intensive knowledge exchange with experts and executives from the Internet industry, other sectors of the economy and important representatives from politics, academia and society.

The list of all eco members can be found in Chapter 13. More about the benefits for members is available at:
international.eco.de/about-eco/membership

Membership Development 1998-2020
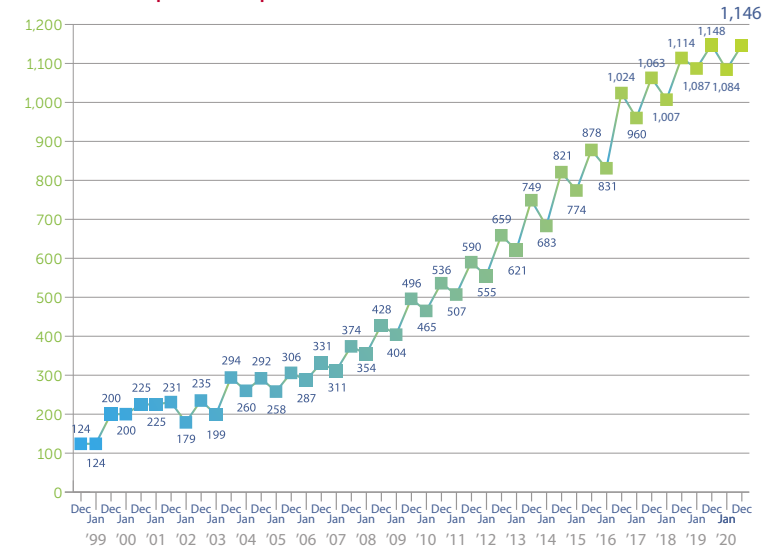
3.3 eco Association Structure and Presidency Committee

In 2018 the Board signed the asset transfer documents of the eco subsidiaries DE-CIX Management GmbH and DE-CIX International GmbH into the DE-CIX Group AG. In so doing, eco changed from being the parent of the DE-CIX companies to becoming the sole shareholder of DE-CIX Group AG, which acts as a holding company. The link between the association and the holding company takes the form of Felix Höger, Chair of the Supervisory Board and his Vice Chair Klaus Landefeld, both of whom are also members of the eco Board. The Supervisory Board of DE-CIX Group AG is rounded off with Rudolf van Megen.

eco Presidency Committee

During the 2018 AGM, the establishment of the eco Presidency Committee that was to assist the eco Board and senior management in a consultative manner was agreed upon. The intention is to enable high-level representatives from industry, research, the media and politics to provide valuable stimulus with their expertise, helping the association to identify on-trend digital topics more rapidly and to more broadly apprehend their impact, as well as to extend the Internet industry perspective by integrating multiple points of view and lines of thought from other fields. The committee is also intended to enable the promotion of an interdisciplinary exchange of views and experiences on the opportunities and challenges of digital transformation.

The position of eco Honorary President has been occupied since 2017 by Prof. Michael Rotert, who, prior to this position, spent 17 years as Chair of the Board. The eco Presidency Committee will be successively expanded. The first five committee members are:

Prof. Anja Feldmann
Director of the
Max Planck Institute for
Computer Science and
Leibniz Prize winner

Karl-Heinz Land
Author, Speaker and
Investor / Partner neuland.
digital consulting

Stefanie Kemp
Group Chief Innovation,
Transformation, Digitisation
with the Lowell Group
(from January 2020:
Head of Development of
Easy Software AG)

Saskia Steinacker
Global Head of Digital
Transformation at Bayer
AG and Member of the
High-Level Expert Group
of the EU Commission for
Artificial Intelligence
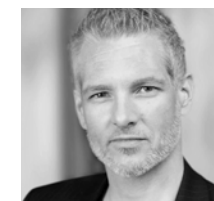
Oliver Weimann
Start-up Specialist, Initiator
of the RuhrSummit and
Managing Director of
ruhr:HUB
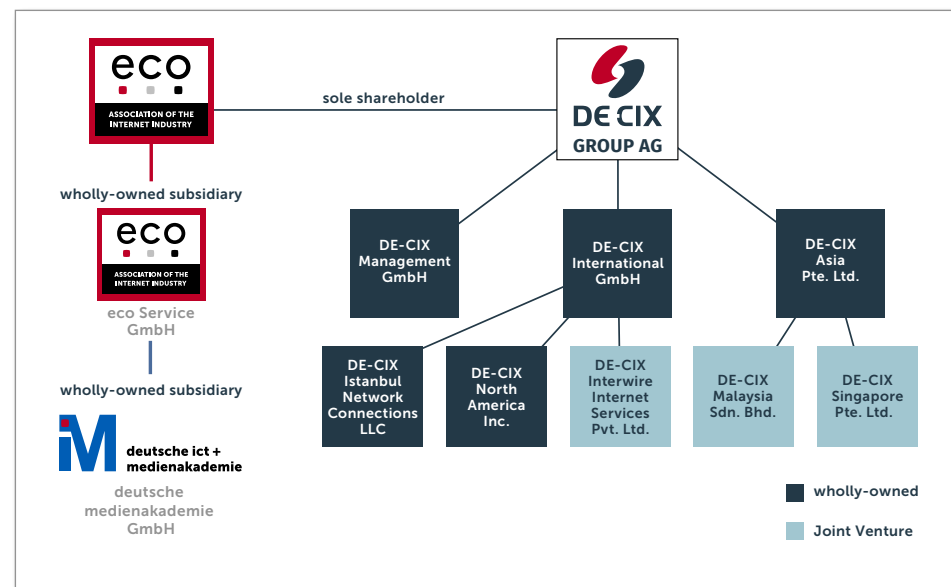
eco Board 2020

Oliver J. Süme

Chair of the eco Board, eco Board Member for Policy, Law & Regulations
Attorney-at-Law/Partner Fieldfisher (Germany) LLP

Klaus Landefeld

Vice Chair of the eco Board, eco Board Member for Infrastructure & Networks
CEO nGENn GmbH

Felix Höger

eco Board Member for Online Services/Cloud Computing
Chair of Supervisory Board DE-CIX Group AG
CEO Höger Management GmbH

Prof. Dr. Norbert Pohlmann

eco Board Member for IT Security
Professor and Managing Director of the Institute for Internet Security – if(is)

Prof. Michael Rotert

eco Honorary President
Managing Partner maxspot GmbH

4. Reports from the Board

4.1 Policy, Law & Regulations

In every respect, 2020 was an extraordinary year. Aside from all the negative and alarming elements ushered in by the Covid-19 pandemic, the year also showed us just how much potential digital technologies and services offer. High-performance digital infrastructures and digital technologies helped to keep economic, political and social life on track. At the same time, however, what became crystal clear were the areas where there is still a need to catch up in digitalisation. Digitalisation is part of the solution to many challenges that we will have to face in the coming years. The digital transformation must be politically managed and requires framework conditions that promote innovation and offer companies legal certainty and economic room for manoeuvre.

In 2020, eco continued to work towards realising this policy-oriented goal and actively shaped numerous digital policy debates at national and European levels. Plans and developments for the sustainability of digitalisation, climate and energy policy, IT security, digital sovereignty, the importance of digital infrastructures, data retention, copyright: these were just some of the central topics that were in focus in the year under review.

Across parties and parliamentary groups, a political debate took place on digital sovereignty and the conceptualisation of a high-performance, secure, sovereign and European data infrastructure under the name of Gaia-X. In 2020, the topic of artificial intelligence was also on the agenda of German and European policy-makers. The same applied to the complex set of issues related to the handling and treatment of data, as well as data protection and data security. Here, however, important legislative processes such as the ePrivacy and the e-Evidence regulations could not be completed. In the year under

review, the expansion of digital infrastructures remained one of the key challenges for the German federal government in order to move closer to realising the goal of a Gigabit Society by 2025. The roll-out of the 5G mobile network and, in particular, the security requirements for network operators were also key topics of 2020.

Furthermore, the amendment of the German Network Enforcement Act by means of the Act on Combatting Right-Wing Extremism and Hate Crime was a much-discussed topic. In addition to a reporting obligation for social networks, special provisions are to be built into the Telemedia Act for data collection and dissemination, as well as for the issuing of passwords. At the German federal state level, the restructuring of media regulation through the amendment of the State Media Treaty was particularly relevant, as was the transposition of the AVMS Directive and the reform plans for the protection of minors in the media.

Oliver J. Süme, Attorney-at-Law
Chair of the eco Board
Board Member for Policy, Law & Regulations

Henning Lesch, Attorney-at-Law
Head of Capital Office
Head of Policy, Law & Regulations Division

When it came to digital policy, the developments in early 2020 were somewhat muted in light of the Covid-19 pandemic, but became increasingly dynamic as the year progressed. In Germany, this led in some instances to uncoordinated and inconsistent plans between the participating ministries, as well as the publication of discussion drafts and short-term revisions of ongoing legislative projects. This presented the Internet industry and the digital sector with entirely new challenges. At the end of the year, resolutions on the IT Security Act 2.0, the new Telecommunications Act and the BND Act were rushed through, and in view of the short deadlines, were virtually adopted without any appropriate association participation and consultation. The contravening measures in the areas of encryption and the adherence to data retention, which is actually inadmissible due to various ECJ rulings, also gave rise to concern and criticism.

At the European level, digital policy debates focused, in particular, on the formulation of the major legislative package presented by the EU Commission for the regulation of digital services (the Digital Services Act) and digital markets (the Digital Markets Act). These projects will decisively shape the Digital Single Market over the coming decades. Among other things, the E-Commerce Directive is to be adapted to the technical developments on the Internet. This concerns the next generation of Internet services and the regulation of all digital service providers on the European market, as well as competitiveness.

Looking ahead, the coming year in Germany will be dominated at the federal political level by the upcoming election campaign for the Bundestag elections. A newly elected federal government and the coming legislative term offer the occasion and opportunity for a strategic reorientation of German digital policy and the setting of new priorities. eco will use the occasion to intensively accompany the upcoming federal election campaign and to position itself and its member companies early on in the election campaign as a specialist actor and spokesperson for politics and public administration. The Policy, Law & Regulations division will develop industry positions on Internet and digital policy on an association-wide basis and together with its member companies. In an Internet Policy Agenda, eco will present its vision on digitalisation and compile the

Internet industry's most important demands and recommendations for action. This should lay the foundation for our political work and create numerous reference points and the basis for dialogue in the political arena with elected representatives and ministries, and for events and press relations.

Prof. Dr. Norbert Pohlmann
Board Member for IT Security

4.2 IT Security

The IT security industry has been one of the winners coming out of the Covid pandemic. Thanks to surging digitalisation and the need for office spaces in private homes, the importance of IT security has increased – which, in turn, has meant ongoing good business for companies in the field, with considerably higher revenues and profits.

According to "The Internet Industry in Germany 2020 – 2025", an eco study conducted with Arthur D. Little in 2020, the involvement of the cybersecurity segment in digital transformation has led to a particularly high level of acceptance. The segment is expected to continue to play an important role over the next five years, reaching growth of over ten percent. By 2025, revenues in Germany are forecast to increase from today's approx. 6.6 billion to 10.8 billion Euro. Finding enough cybersecurity experts to meet the increasing demand will, consequently, be one of the cybersecurity industry's greatest difficulties.

Cybersecurity plays a crucial role for a range of initiatives, including Gaia-X, which advocates for greater sovereignty in Europe. For cultural reasons, the US and Asian market leaders in software/Internet services and hardware strive for a different level of IT security than their German and European counterparts, a region which is more oriented towards the small and medium-sized enterprise sector and towards innovation. This is one of the reasons IT security will play a special role in the digital future.

eco Members' Workshop

At the Members' Workshop, the topic "(professional) development of experts for digitalisation" was pitched, and a majority of member votes voted it into first place.

The problematic situation in Germany is hard to ignore – companies are facing the challenge of recruiting skilled industrial technical specialists. In a survey by Indeed, just under half of the SMEs participating indicated that the search for suitable staff was their greatest challenge. eco believes the key to solving this problem lies not simply in searching for new personnel, but also in the dynamic further development of the existing workforce. In today's world, single qualifications like university degrees that are designed to hold lifelong applicability are a thing of the past. In times of constant change, how can we organise our own professional development and that of other employees as efficiently as possible? We have to be able to keep our knowledge up to scratch these days, flexibly and regardless of where we are. It was for this reason that eco decided to offer regular webinars oriented to practical applications.

The New Work Competence Group had already started working on concepts for the planned webinar series in 2019, aiming to create high-quality, compact and uncomplicated offers. Since early February 2020, members of the eco Association have been acting as speakers; our members are, after all, experienced experts in key issues of the IT industry. The webinar series also has the added advantage of generating external visibility for our members. The webinars themselves are free-of-charge for anyone wanting to participate. The video recordings, however, are only accessible to members in the closed members+ area of the eco website. There is a broad range of key issues around digital transformation, and they are becoming increasingly important for companies having to deal with digital trends in order to stay competitive. As a result, participants also had a broad variety of webinars to choose from: popular topics ranged from Industry 4.0, AI, the cloud, GDPR, and cybersecurity, to DevOps, smart IoT, Big Data and questions concerning New Work.

The Covid pandemic contributed to how well the service was received. An additional webinar library has been set up in the eco members+ portal: **international.eco.de/members/webinars**

DoH – DNS over HTTPS

"DNS over HTTPS" is used to perform DNS resolution via the HTTPS protocol. Preventing the interception and manipulation of DNS data through Man-in-the-Middle attacks means user privacy and security can be improved.

While the potential advantages of DoH are fairly evident, changes to IT infrastructure and new risks are more difficult to predict. A group of eco members have penned a discussion paper on DNS over HTTPS with the aim of clarifying some of the rather complex questions arising – of both a legal and technical nature – and making recommendations for the implementation and operation of DoH. The paper includes background information and explanations for non-technical readers, as well as recommendations on how to use DoH in a user-friendly way, in compliance with data protection.

The Secure Websites and Content Management Systems Project

Initiated back in 2017, the SIWECOS project continued in 2020. It offers a free website scanner for SMEs as well as a hoster service through which MOD security rules to defend against cyber attacks on CMS systems are created and quickly made available at the hoster. SIWECOS is now available to the community in an open-source format at: **github.com/SIWECOS**

Internet Security Digital Days

From 15 to 18 September, eco hosted the Internet Security Digital Days. After ten years of the annual two-day conference at Phantasialand, last year's conference instead took on a virtual format focusing on "Cybercrime: On the Hackers' Trail", "Human Factor: The Human Firewall", "Internet Everywhere – Security Everywhere?!" and "Best Practices: Learning from Experience". Despite being held online, the ISD 2020 maintained the same focus – top-class professional exchange and networking with the best minds in IT security. Over four days, we were able to welcome over 200 participants and 53 expert speakers via the talque.com networking platform.

Anti-Abuse Competence Group

The Anti-Abuse Competence Group is made up of representatives of the anti-abuse departments of German web hosters and Internet service providers (ISPs) and select experts from the anti-abuse field. As a closed group, the Anti-Abuse CG is used in particular for confidential exchange between departments of companies who are actually in competition with each other. In 2020, DNS over HTTPS (DoH) was a driving discussion topic within the CG. Their planned international meeting in the Netherlands had to be postponed indefinitely. In their virtual meetings, the CG focused on "Implementation of metrics and visualisations in day-to-day anti-abuse business" and subsequently on "Anomaly detection" in data streams. In addition, the CG was in contact with the KRITIS Working Group – during a joint gathering, members were able to meet and explore cooperation possibilities.

Security Competence Group

The IT Security Advisory Board met with the Board, the Competence Group leaders and management again in 2019 to discuss the topics to be addressed in 2020 and to define work priorities.

In 2020, the Security CG dealt with three focal topics: digital sovereignty, digital identities and the human security factor. Accompanying webinars provided background information while the CG's work included discussions with members on future developments and implications for the industry.

The Security CG's IT Security Survey 2019, which polled almost 300 IT experts, showed that companies are paying more attention to being prepared. They are improving their cyber resilience with contingency plans and regular employee training. Increasing employee awareness and encryption were identified as the top IT security topics for 2020.

Congresses and trade fairs

In 2020, eco was present at several virtual IT security events. The association was represented at the it-sa 365, for example, where it presented its cybersecurity offers, and was also present as an exhibitor at the international RSA Conference, based in San Francisco. eco's webinar program was expanded to include Security Expert Talks, a format which provides a platform for eco member companies to display their competencies while at the same time presenting eco itself as a knowledge platform for new contacts and prospects. The series was well received by member companies and participants and will be continued in 2021. Three talks were organised in 2020, on the topics of "Secure in the Crisis", "IoT Security" and "ISMS".

Felix Höger
Board Member for Online Services/
Cloud Computing

4.3 Online Services / Cloud Computing

Over eleven million office employees worked from home, school children were taught at home via videoconference, the weekly shop came straight from the Internet to the front door – this was Germany in 2020. Was it a success? In terms of digitalisation, the Covid pandemic has provided a fairly painful assessment of where Germany stands. So what was to blame? That would be twenty years of procrastination. What we now need is innovation in its very substance – and a redefined mindset for the country would go a long way, too.

Progress in working digitally

Germany took up on digitalisation at breakneck speed in 2020: The Covid lockdown saw the economy send a quarter of its workforce to virtual workplaces in the private home. According to the "Digitalisierungsindex Mittelstand 2020/21" (Digitalisation Index SMEs 2020/21), a remarkable 62 percent of SMEs set up home workplaces for their employees. Ifo Institute statistics suggest that 73 percent of all companies in the overall economy intend to continue relying on the New Work model following the end of the crisis. The transition to workplaces in the home has paved the way deep into SMEs for the public cloud – and that is not likely to change. All the same, progress was mainly limited to the transformation of office work. Investments were made in solutions for videoconferencing, remote access to computers, encrypted networks, and mobile devices.

Germany nonetheless falling behind

For all the excitement around the momentum of digital work in Germany, the real digital revolution is taking place elsewhere. Despite making progress, Germany fell from sixth to 14th place in just one year (2019 to 2020), according to a comparative study on digitalisation. Among the G7 states, Germany is in second-last place. During the crisis, over one in four German companies cut back on investments in robotics, artificial intelligence and virtual reality. The Scientific Advisory Board of the German Federal Ministry for Economic Affairs and Energy (BMWi) has spoken of both market and organisational failure. What do all these figures tell us? That other countries are learning faster and pushing us out of the top ten!

Citizens pessimistic

By now, Germans are starting to suspect as much. Whether it was the stress test for home broadband access, remote learning for children, registering for a Covid vaccination, or the "best Covid app ever" – Germans experienced the digital competence of the country on a broad scale for the very first time in 2020. Their verdict? According to a survey conducted by the European Centre for Digital Competitiveness, nine out of ten Germans are of the impression their country is not keeping up with digital transformation.

What is stopping us?

All the same, there is no need to be discouraged by such numbers. They simply show where we stand; most of the digital advances of the last few months were premieres, pilot projects, beginnings. The crisis forced us to jump over our own shadows. What is it that we have been shying away from in Germany for the past twenty years?

The devilish thing about procrastination is negative conditioning – the more we put something off, the greater our fear of beginning, the greater our expectations become of the result.

Eventually, the mountain becomes so high that no one wants to climb it.

Estonia shows the way

Our neighbours in Estonia did the very opposite – as a small, post-Soviet country, Estonia started to digitalise its administration as early as the 2000's. Today, they are European leaders. To begin with, of course, they were not. They learned what needed to be done by just starting – and then not stopping. Estonia, unlike Germany, does not have a reputation as a country of engineers and inventers. Nevertheless, they overtook us in an important area of digitalisation.

A more productive mindset

So, what is the source of German heedlessness? US psychologist Carol Dweck speaks of a static mindset, one which is based on the belief that our individual talents are unalterably fixed – that if you have to work hard, you do not have what it takes to make it to the top. This is what makes people with static thought patterns shy away from challenges – the fear that failure would reveal to the world their own inability. Praise or labels like "the land of engineers and inventors" inhibit action, because there is more at stake in the event of failure. Is this perhaps where the German perfectionism, for which we like to give ourselves credit, comes from? In Germany, we all too often perceive the

challenges of digital transformation as risks. It is through the very same challenges that Estonians, with their more dynamic mindset, have developed superior competence in this field.

Signs of a change of attitude

The new possibility of working online from home was long overdue. But our progress has been characterised, more than anything, by us catching up on innovations created elsewhere. However, signs of a changing attitude in Europe and Germany increased in 2020. Under the leadership of the Commission, EU Member States are finally setting ambitious goals for the shaping of the Digital Single Market.

Gaia-X on the agenda

The European initiative Gaia-X, in which Euro-Cloud Deutschland_eco and eco are closely involved, recently made it to the top of the political agenda in Brussels – and into Commission President Ursula von der Leyen's State of the Union Address. As part of the NextGenerationEU program, Gaia-X stands for the development of a European cloud ecosystem that promotes competition, collaboration and privacy rather than monopolies – and does so in accordance with European rules. Defying initial scepticism, Gaia-X is now gaining momentum and was a dominating topic among experts in 2020. As eco CEO Harald A. Summa summarised, "The support and momentum are

immense and Gaia-X is being spurred on by a very wide range of different stakeholders."

EuroCloud Germany working on rules for a European data space

One Gaia-X project group, which includes experts from EuroCloud Deutschland, has received 13.5 million Euro in funding from the German Federal Ministry of Economic Affairs and Energy (BMWi). These experts are developing concepts for open-source technologies which enable secure, reliable and trustworthy cooperation between distributed cloud services in the Single Market. Led by Andreas Weiss, eco Head of Digital Business Models and member of the Technical Committee for Federation Services of the recently founded association Gaia-X AISBL, EuroCloud Deutschland_eco is contributing to the realisation of Gaia-X's promise.

DE-CIX delivering interconnectivity for Gaia-X

DE-CIX's Apollon platform is technology that would work well as a blueprint for the European cloud ecosystem. The platform is the largest carrier and data centre-neutral data hub in the world, and it connects over 2,000 participating networks in more than 20 metropolitan regions across the globe. It could become the foundation for direct connections between future Gaia-X hubs that would be shielded from the

public Internet. Apollon's special feature is its immediate Internet connectivity – via interfaces, the platform establishes high-performance connections and handles administrative processes entirely automatically at the push of a button. In other words, Apollon already meets certain key requirements for a European data infrastructure.

EuroCloud Native & Channel2Cloud

But it was not only on the big stage that signs of new beginnings were perceptible in 2020. There was also a strongly positive response within the IT industry to EuroCloud Deutschland_eco's Cloud Native Initiative. Our aim of better connecting German cloud startups with both the industry and hyperscalers was received exceptionally well. The willingness on all sides to get the ball rolling is palpable. This is also what we hope to achieve with our latest initiative, Channel2Cloud, with which we support the most important IT service providers for SMEs – IT systems integrators – in adapting their business to modern cloud services.

A new beginning

Last year caused so much suffering for so many. This has been truly humbling for me and for each of us, and our thoughts go out to those affected. Let us take 2020 as a test and as a chance to make things better, step by step, in the future.

Klaus Landefeld

Vice Chair

Board Member for Infrastructure & Networks

4.4 Infrastructure & Networks

Dear Members,
Somehow, I had imagined the digital-isation of the world to be different – more voluntary and driven by the benefits for companies and users, not under huge pressure and born out of necessity, as we have now experienced.

In principle, the necessary elements remain the same – home office with a fast line, video conferencing, digital access to company documents, data, and processes. Digital transformation in administration and health care to digital learning and teaching opportunities. An evening's entertainment through streaming, gaming or in front of the social media network of choice.

As a rule, technologies are used that have been in development for more than 20 years – but had not yet made the convincing breakthrough to mass application. Will we continue to use them when the external constraint is removed?

I think so, because many of the developments are also simply comfortable and will become the norm. Now that we are all used to it, it will be difficult to explain to consumers why a visit in person to the local authority's or doctor's office should suddenly be necessary again, after we have been able to – and had to – avail of digital services and digital exchange from within our own four walls for over a year.

We, as an industry, have shown that we can already handle the volume of a digitalised world for the most part. Apart from a few minor "hiccups" in March – which were cleared up within a few days thanks to cloud computing – the services were mostly able to meet the demand. Many applications have since evolved with previously unimaginable speed in terms of quality and feature sets.

It is not surprising, however, that the beginning of 2020 was dominated by infrastructure issues. From the scaling of networks to access to infrastructure in lockdown – how quickly a company can become "systemically relevant" – to the increased call for gigabit and broadband expansion and the medium-term political goal of a right to broadband for all.

This development subsequently also triggered discussions on topics arising from the digital-isation of society: The future of work, the consequences of social media, fake news and the like, but also, for example, digital violence online, which has apparently risen sharply in pandemic times.

In direct connection, questions arose about the security of companies and networks as a whole in a digitalised world, as well as questions about the security and data use of applications – mostly questions that have been occupying us as eco for some time, but also occasionally new special topics such as the Covid warning app.

Central to these issues will be, among others, the new IT Security Act (ITSIG) and the new Telecommunications Act (TKG), both of which were presented by the responsible ministries in December 2020 after more than a year of waiting.

Totally inappropriately given the importance of these projects, however, this happened in parallel to a whole phalanx of other security laws, and on top of that the industry was given just 48 hours (TKG) and 24 hours (ITSIG) to comment – deadlines within which a consensus in an industry association simply cannot be achieved. As a summary, it must be said: December 2020 showed so clearly how much value is attached to the opinion of the experts surveyed and the content of the industry's

statements – because these are obviously perceived as dispensable.

Critical for the Internet industry in both legal projects is not only the expanded field of application resulting from the newly included sectors and the adjustment of the threshold value, but also the expenses for the companies concerned resulting from the certification and authorisation requirements. In all likelihood, these will significantly impede the development and expansion of the networks in the future.

In this context, law enforcement agencies and security services have also continued to go online – a logical consequence of the shift of "crime scenes" towards digital crimes or criminal offences committed with the

"computer as a means of crime". Methodologi-cally, unfortunately, there is no turning away from the desire for Trojans and other spying software. On the contrary, according to the wishes of the federal government and the German Federal Ministry of the Interior (BMI), all security services and federal police should now be able to access Trojans and an only slightly weakened version of the online search.

Unfortunately, the Council of Europe's approach of not weakening the encryption of data but being able to circumvent it for various areas of application through enforced technical measures, is also heading in the same direction. "Exceptional access" is the key word here, which is intended to make proposals such as GCHQ's "Ghost Protocol" socially acceptable.

This access should then be available not only to security authorities, but also to all law enforcement agencies throughout Europe. In this respect, the project is analogous to the draft regulation "E-Evidence", which has now entered the trialogue negotiations with only slight improvements so far.

Increasingly irresolvable is also the existing conflict between data protection, strengthened again this year by the position of the EU Court of Justice on the VDS, and the position of the Council and a large number of countries in their national legislation. So far, the states do not want to refrain from collecting data, no matter how often the conflict of values with the demands of a liberal society is brought to their attention by the courts.

But more: Real hacking is now also to be part of the security services' portfolio – as happened, for example, in the new German Federal Intelligence Service Act (BND-Gesetz), which was made necessary by a ruling of the Constitutional Court in the spring. These rights are also soon to be opened up to other services in the course of a "harmonisation" of the rights of the federal and state security authorities, combined with an obligation for providers to cooperate. Even a "hack-back" as a last resort is no longer ruled out today and is openly discussed even in law enforcement circles.

The floodgates have also been opened to new types of data: According to the ideas of the Chancellery, only "personal communication" between two human participants should be

subject to the protection of the 'Basic Law', the German constitution. "Automated communications", i.e., anything that a person exchanges with a computer system or a computer system exchanges with another automatically, is not be subject to this protection. Location data? IoT Booking data? According to the Chancellery, these are all not subject to the protection of Art. 10 of the Basic Law, a grey area would be automated retrievals of emails or similar, where only the connections in and of themselves are to be evaluated.

In the area of data protection, the technical protection of data and the uniform application of the GDPR both nationally and Europe-wide in a "single market" were increasingly discussed - triggered by the increased use and

the transfer of even the most sensitive data, such as health data, to the Internet. There are signs of extensive harmonisation here. Other topics included the consequences of Schrems II and the upcoming Brexit for data transfers and localisation of stored data by companies abroad.

As you can see, we never got bored in 2020, despite the difficult conditions. Details on the individual topics can be found in the reports of the working groups and the Policy, Law and Regulations Division.

Stay healthy!

Yours

Klaus Landefeld

Prof. Michael Rotert
Honorary President

4.5 An Involuntary Virtual Year

Just what kind of year was 2020? Even if eco was born and bred on the basis of digitalisation, having exclusively virtual, digital "meet-ups" every year is not something that we would strive towards. An association thrives on personal communication, networking, social contacts and discussions. Virtual/digital events are certainly more efficient than travelling in some cases, but exclusive virtual association work would require a completely different association orientation and different methods of organisation and communication.

At the start of 2020, no one knew what was coming down the line. Which is why only "normal" events took place in the first quarter. My active participation in the various committees in 2020 was divided into two parts. While I was still able to participate in direct meetings and events in January and February, my participation was limited to virtual events from March to July. But first things first:

In January, the New Year's receptions held by the European Council in Strasbourg, and by eco in Berlin, were still in-person events, while the EuroDIG planning meeting could also still take place as a physical event in Trieste, just as the German branch of the Internet Governance Forum (IGF-D) was still able to hold a steering committee meeting in Berlin. In February, the eco Board also met in person in Berlin.

After that, only virtual meetings took place. Whether it was the jury meeting of the ISPA-UK Awards, the discussion on "new IP" with the German Federal Ministry of Economic Affairs and Energy (BMWi), the eco Board and Presidency Committee meeting, or the Internet Governance Forum (IGF) meeting: all events were video conferences organised with the most diverse video systems. The first big event involving hundreds of participants via video was the EuroDIG in June – an event that should actually have taken place in Trieste, but which turned out to be a successful virtual event with two parallel streams. The eSports/skill-game project that I still oversee also met virtually. The topics here were regulation – Germany as a blueprint for European regulation of eSports – and certification of eSports providers by TÜV-Rheinland. Participation was by invitation only and participants had to be eco members.

In general terms, it can be noted that individual committees met much more frequently and were easier to coordinate than in-person meetings, which are, of course, more difficult to schedule due to their travel requirements. Then in September, I was finally able to once more participate in two in-person events: eco's Internet Policy Anniversary in the Kalkscheune in Berlin, and the German Internet Governance Forum (IGF-D) in Café Moskau in Berlin. Both events were also broadcast in parallel on the Internet. There was also another in-person event at the beginning of October at Tegernsee, close to Munich: this event, sponsored by Ernst & Young and involving high-ranking participation from politics and business, dealt with governance and the social market economy.

Rather than taking place in Poland as planned, this year's international Internet Governance Forum (IGF) took place virtually over a 14-day period and was managed over many parallel streams. 6,000 registered participants took part in over 20,000 sessions. This time around, the ISPA UK Gala, a black-tie event and award ceremony for the best providers in the UK, also took place virtually. For the laudatory speech, I forwarded a video which was then broadcast at the event.

Major highlights of the year were the virtual celebration of 25 Years of eco, not to mention eco and DE-CIX's traditional Christmas party, which this year also took place digitally. Here there was a smokers' lounge where you could meet virtually, and where, funnily enough, there were a lot of non-smokers – like the smokers' gossip corner in the schoolyard in years gone by!

All and all, this means that, despite Covid and virtual events, we had a packed year – but hopefully we'll once again soon have more in-person events!

Henning Lesch, Attorney-at-Law
Head of the Capital Office
Head of Policy, Law & Regulations Division

5. Political Representation

The Policy, Law & Regulations division coordinates all eco Association activities which concern the legal and regulatory framework for Internet and network policy. Through its Capital Office in Berlin and its office in Brussels, eco delivers on-location representation of the political interests of its members and keeps them up-to-date on current developments and legislative initiatives.

The Policy, Law & Regulations division brings together eco's expertise on the range of relevant topics and ensures a clear political positioning of the association vis-á-vis political stakeholders. The division's industry positions on the key Internet policy topics allow members' interests to directly inform political debate and to flow into accompanying event formats and political press and public relations work.

From the perspective of political representation, 2020 was an action-packed year, both in Germany and at a European level. Topical focal points continued to be the discussions on IT and cybersecurity, as well as the relevant security requirements for network operators and service providers – topics which had already become the focus of digital policy in Germany and Europe in the preceding years. Further intervention points for political representation stemmed from the discussion on the amendment of the German Network Enforcement Act (NetzDG) and the corresponding draft laws.

In the year under review, the amendment to the German Telecommunications Act (TKG) for the purposes of transposing the European Electronic Communications Code took on a concrete form. In comparison to the current legal framework, the changes to be brought about by the TKG amendment are both extensive and far-reaching. It sets the course for the next few years in key topic areas, such as market regulation, frequency policies, the protection of end users, and universal service. The expansion and inclusion of OTT services in the amendment's scope of application also raised new issues and activated intervention points regarding keeping member companies informed about current developments and intensively accompanying the TKG amendment.

In the field of data protection, numerous contact points also materialised in 2020 due to the further transposition of the GDPR, the Data Protection Amendment and Implementation Act, the new regulations in the area of telecommunications and telemedia, and the ongoing deliberations on the ePrivacy Regulation.

The plans for a Digital Services Act and a Digital Markets Act were finalised and presented by the EU Commission. The Digital Services Act is one of the central digital policy legislative processes at the European level and is, therefore, a key focus of the division's activities.

When it came to the German transposition of the European directive on copyright (the DSM Directive), the drafts issued for consultation also provided an opportunity to critically accompany the debate on the modernisation of copyright and the legislative efforts relating to European ancillary copyright, a licensing obligation, and the threat of content filters.

eco has set itself the goal of integrating its European and international member companies more closely into the association's work and of applying a greater focus to addressing legal policy issues at the European level and in the international context. In the year under review, the Policy, Law and Regulations division expanded its portfolio with English-language formats in order to convey information on

relevant topics from the policy field and to create additional opportunities for participation. With the BXL Talk, an independent event format was established. This successfully raised the profile of eco and its position papers, expanded and extended the Brussels and European network, and optimally positioned the topics at the European level.

eco actively shaped developments at the European level through its Brussels office and the close exchange with EuroISPA, the umbrella organisation of European Internet service providers. With Thomas Bihlmayer becoming a newly elected board member of EuroISPA, eco was able to advocate even more strongly for the interests of its member companies in Brussels and at the European level.

In the coming year, eco will continue to keep track of the important political processes for its member companies and advocate for optimal political framework conditions for the Internet industry. In Germany, the coming year will be marked by the upcoming elections for the German Bundestag and the end of the legislative term. The election year offers eco the opportunity to accompany the political discourse and to position itself and its member companies as a professionally relevant actor and as a contact for Internet and digital policy issues in the spheres of politics and public administration.

The current position papers, statements, background papers and PR activities are available on the division's eco website at: international.eco.de/policy-law

The topics described in the following pages were a particular focus of our work in 2020.

Henning Lesch, Attorney-at-Law
Head of the Capital Office
Head of Policy, Law & Regulations Division

Thomas Bihlmayer
Policy Adviser
Brussels Office

Philipp Ehmann
Legal Consultant for Internet Law &
Telemedia Regulation

5.1 Legislative Processes & Focus Topics

IT security

In the field of IT security, new developments at both the European and national level presented eco with intervention points for further political work. To begin with, in spring 2020, the European Commission introduced a new version of the NIS Directive and presented it for discussion via a consultation in which eco also participated. The draft of the successor NIS Directive was published at the end of 2020. In 2021, the draft directive will be the subject of more intensive work on eco's part. In Germany, in the year under review, the debate on the regulation of IT security was further pursued. An unofficial draft of an IT Security Act 2.0 (IT-SiG 2.0) had previously been published in 2019 and, in December 2020, the German

federal government presented a discussion draft, followed in quick succession by the official draft act. eco dealt with both in detail, submitted comments, and took a position on the plans. The political debate on the IT Security Act will continue after the cabinet decision on 16 December in 2021 and will continue to be intensively accompanied by eco.

Artificial intelligence

In 2020, the topic of artificial intelligence was driven first and foremost by a heightened level of activities at the European level. In addition to the Digital Strategy, the Commission also published its White Paper on Artificial Intelligence, a paper on which eco provided extensive commentary. eco also commented on the

European Data Strategy, which is closely linked to the Commission's plans for artificial intelligence. It can be assumed that the Commission's plans will be further concretised in 2021 and converted into proposals for regulations and directives. In Germany, eco contributed to the debate by commenting on the German federal government's Data Strategy and emphasised that, in addition to clear data protection rules, clear options for data processing are also needed. Thanks to its previous engagement and expertise in this topic field, eco is well-positioned and prepared for these plans and the further developments to be expected at the national and European level. At the end of 2020, the EU Commission published the Data Governance Act, which intends in particular to

regulate data fiduciaries. eco will take up on this aspect and continue to pursue the topic of artificial intelligence in the coming year.

Digital Services Act

Twenty years after the E-Commerce Directive (ECRL) came into force, at the end of 2020, the EU Commission presented its proposals for the successor regulation: the Digital Services Act (DSA). Factors that are to be retained from the ECRL include intermediary liability limitations and the ban on general monitoring of content by intermediaries. Among other measures, it will also introduce a regulated notice and take-down procedure with nationally authorised trusted flaggers, as well as a complaints procedure. Transparency reports and audits, together

Nicolas Goss
Legal Consultant for Telecommunications Law &
Regulations

Dr. Folke Scheffel
Legal Consultant for Internet & Media Law

Johanna Tantzen
Legal Consultant for Policy & Law

with an extensive penalty framework, are to ensure compliance with the rules. The legislative project is of particular relevance for the entire Internet industry, as it will regulate and prescribe the general legal framework and general conditions for the provision of digital services at the European level. The legislative process is not expected to be completed before 2022 and will be a process in which eco will actively engage. In June, eco participated in the consultation on the DSA and organised a successful online panel discussion with representatives from politics and business.

Platform regulation

On the grounds of various legislative initiatives, the regulation of digital platforms was further concretised in Germany in 2020. The German Federal Ministry of Justice and Consumer Protection (BMJV) presented several draft acts to

transpose specifications of EU law. These included a draft Act for Transposing Aspects of Contract Law for the Provision of Digital Content and Digital Services, a draft Act to Amend the German Civil Code to Strengthen and Modernise Consumer Protection Provisions, and a draft Act to Strengthen Consumer Protection Rights in Competition and Trade Law. eco contributed to all of these legislative initiatives on the basis of a brief commentary. The introduction of the draft acts is planned for the first quarter of 2021.

Regulation of competition

In January 2020, the German Federal Ministry for Economic Affairs and Energy (BMWi) published the draft for the 10th amendment of the German Act against Restraints of Competition (GWB). The amendment aims to create a focused, proactive and digital Competition Law

4.0. In addition to adjustments to merger control and cooperation between companies, the draft act contains an ex-ante provision on the regulation of companies with predominant cross-market significance. This provision is only to apply to companies in the digital and Internet industries. eco participated in the amendment of the GWB by submitting written statements and comments and took part in the BMWi's hearing. In July, eco organised a webinar on the 10th GWB amendment with the participation of the responsible department head at the BMWi, Dr. Käseberg. In autumn 2020, in its first reading, the draft act was introduced for consultation in the German Bundestag. In November 2020, a hearing on the planned amendments to the GWB was held in the Committee for Economic Affairs and Energy. Adoption of the act by the Bundestag is planned for the first quarter of 2021.

Digital Markets Act

The debate on the progression of European competition policy, especially with regard to digital and Internet companies, also became increasingly significant at the European level. The EU Commission held a consultation on the development of a new competition tool. The aim of the consultation was to assess the market situation, structural characteristics of individual markets, and possible starting points for a new competition tool. eco took part in the consultation. In December 2020, Margrethe Vestager, Commissioner for Competition and Digital Affairs, presented the draft Digital Markets Act (DMA). With the DMA, central platform services – so-called gatekeepers – are to be specified and ex-ante obligations (prohibitions and bans) are to be imposed on the gatekeepers in order to ensure contestable and fair markets in the digital sector. The deliberations

of the European Parliament and the Council on the DMA will begin in 2021. eco will continue to monitor the topic and comment on the Commission's corresponding proposals on the Digital Markets Act.

Digital tax

Negotiations on the introduction of a digital tax at the level of the Organisation for Economic Cooperation and Development (OECD) were stalled as a result of the withdrawal of the American negotiating partners under Donald Trump's administration. In autumn 2020, the OECD announced that the previous timetable could not be maintained and that an agreement for an international taxation framework would not be reached until mid-2021. The European Commission reiterated its interest in an international solution, but at the same time, clearly stipulated that it wished to present a European proposal on the taxation of digitally active companies if no OECD solution was found by mid-2021. Subsequently, the European Commission repeatedly referred to working on a European approach to the taxation of digital companies. eco advocated an international solution for the taxation of digital companies and business models that would: create a legally secure and practical taxation framework; eliminate the risk of double or special taxation insofar as possible; and ensure that digital business models are accorded the equivalent treatment as that applied to the economic branches of the "old economy".

German Federal State Media Treaty

The German Federal State Media Treaty (MstV), which also transposes the European AVMS Directive for Germany, was adopted on 5 December 2019. Although the EU Commission raised a number of concerns as part of the notification procedure, this did not inhibit the signing of the MStV. Following on from its submission to the German federal state parliaments, the MStV entered into force on 7 November 2020. On a technology-neutral basis, the MStV defines those who may broadcast without a broadcasting licence in the future. In addition to broadcasters, the MStV is aimed at telemedia providers, including media platforms, user interfaces and video-sharing services. The practical implementation of the MStV is now the responsibility of the state media authorities.

German Federal Film Funding Act

Although it had already been introduced, the amendment procedure for the new German Federal Film Funding Act (FFG) could not be pursued as planned due to the Covid-19 pandemic. As the collection of the film levy based on the existing Film Funding Act (FFG 2017) was to culminate on 31 December 2021, the German Federal Government Commissioner for Culture and the Media published a draft amendment to the FFG in order to prolong funding. The associations ANGA, Bitkom and eco jointly submitted comments on the draft. No fundamental changes to the funding or the levy structure occurred, and the imposition of
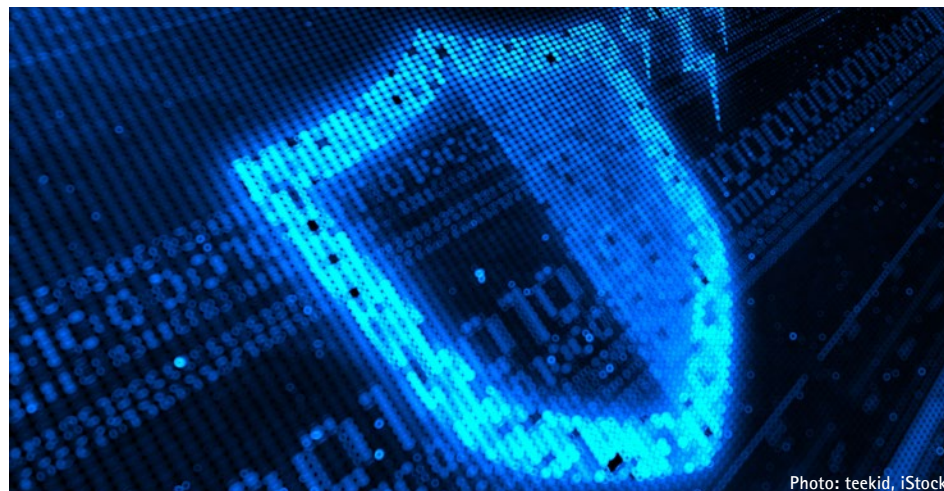

Photo: teekid, iStock

the film levy was limited to two years. The Film Funding Act is to come into force on 1 January 2022 at the latest.

Data protection/ePrivacy

In the field of data protection, the debate on the European Union's ePrivacy Regulation was at the forefront. After almost four years of deliberation in Parliament and Council, in autumn it briefly looked as though the German EU Council Presidency might achieve a breakthrough. Due to its restrictive approach, eco had commented on the German federal government's proposal in the form of a key points paper. However, the German Council Presidency did not manage to gain a Council majority for the ePrivacy Regulation, meaning that the law is now subject to further discussion. Alongside

this, a further element that played a central role in Germany was the debate on the new regulation of data protection in the telecommunications and telemedia sector. The German federal government's legislative initiative was first announced in March. The consultations will be continued in 2021. In addition, the 2016 General Data Protection Regulation (GDPR) featured once again in this field. The GDPR was evaluated by the European Commission. eco contributed key points to the evaluation and made it clear that a stringent data policy requires clear and proportionate rules.

Data retention

In October 2020, in four preliminary procedures from Belgium, France and the United Kingdom, the ECJ ruled that indiscriminate data retention
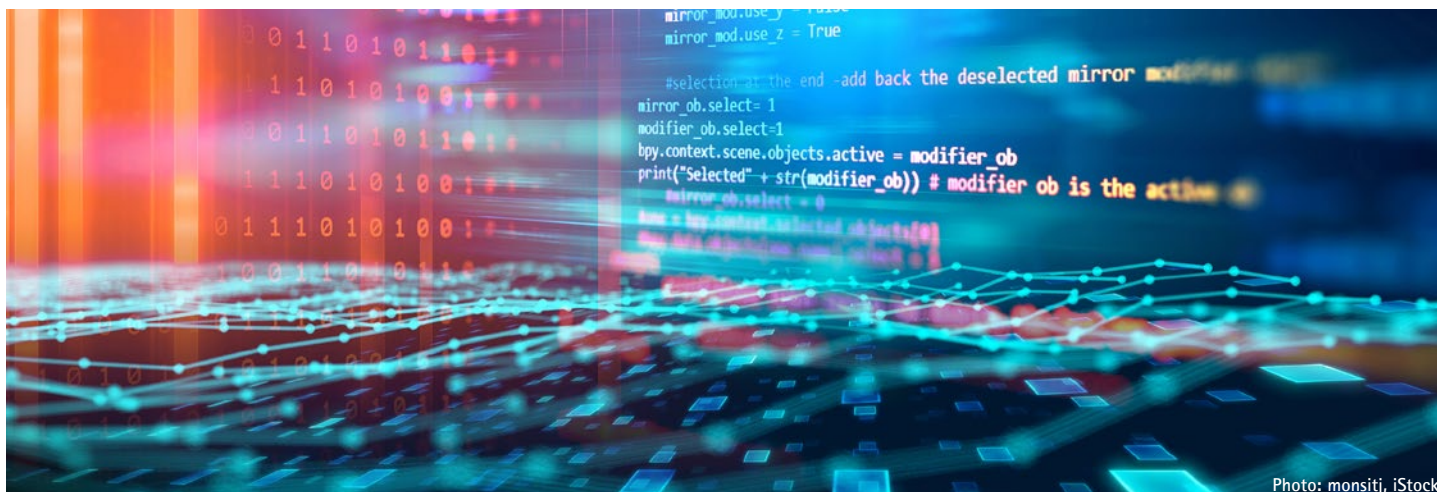
Photo: monsitj, iStock

on a general and unrestricted basis continues to be incompatible with EU law. The preliminary ruling on the previously successful lawsuit of the company SpaceNet against the German regulations on data retention is still pending before the ECJ. Whether or not a verdict will be reached in 2021 is not foreseeable. eco supports the lawsuit filed by its member company SpaceNet, and is of the view that the German regulations are contravening EU law. Against this background, it has expressed criticism of the German legislator's proposition, which seeks to once again adopt these regulations and to even extend them in part. eco will continue to campaign against data retention. This also applies to plans at EU level for a legal framework for data retention; for example, through limiting the scope of the future ePrivacy regulation.

Amendment to the German Act for the Protection of the Constitution

In August 2020, the German Federal Ministry of the Interior (BMI) presented a draft bill to amend the Act for the Protection of the Constitution. This would allow German intelligence services to deploy State Trojans. Providers of telecommunication services and network operators would be expected to participate in the infiltration of IT devices of target persons, including redirecting the data traffic of the target person to the respective service. This would constitute a massive infringement of the integrity of IT systems and would undermine the trustworthiness of communications. By the end of 2020, the draft bill had made its way to the Bundestag. The amendment essentially also offers the authorisation for online searches of

computers. This is a topic which is particularly volatile due to the imminent application to messenger and email services. In order to maintain and strengthen the resilience of IT infrastructures, eco will continue to campaign against the use of State Trojans.

German Telecommunications Act amendment/EECC

In November, after a considerable delay, the German Federal Ministries of Energy and Economic Affairs (BMWi) and of Transport and Digital Infrastructure (BMVI) presented a joint draft bill for the amendment of the German Telecommunications Act (TKG). This is also intended to transpose the European Electronic Communications Code (EECC) into national law. The EECC directive sets the legal framework in

the EU's Single Market for telecommunications in the longer term and is of fundamental importance for all market players. Among other factors, the roll-out of high-speed Internet infrastructures is to be promoted through co-investment and cooperation models. In addition, frequency distribution and management, including 5G, are to be more closely harmonised. Furthermore, in order to create a "level playing field", email and messenger services are in future to be subject to telecommunications law. Under the German plans, this expansion and wider integration is likely to lead to a significant extension of surveillance and of the number of companies obligated to comply. eco has taken a critical stance towards this expansion, as well as the planned, complex over-regulation in the area of public security of telecommunications services and networks; for example, through the security catalogue. In December, the draft bill was approved by the German federal cabinet. The TKG is likely to come into force in 2021. eco has commented publicly several times and will accompany the application of the act.

Data inventory disclosure

A ruling by the German Federal Constitutional Court (BVerfG) made it necessary to amend several existing laws, including the German Telecommunications Act (TKG), as well as other legislative initiatives that have not yet been adopted. For instance, these include the Act on Combatting Right-Wing Extremism and Hate Crime for the reform of the Network
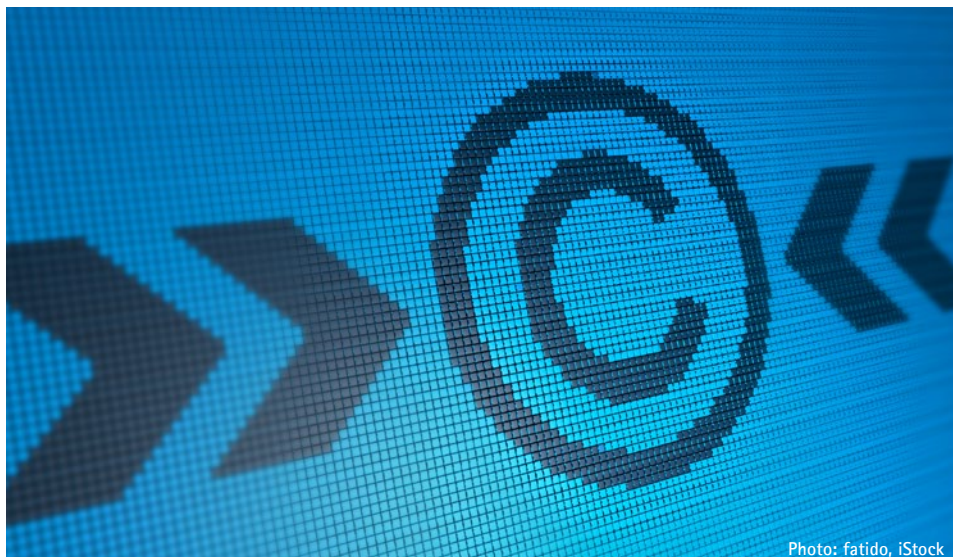
Photo: fatido, iStock

Enforcement Act (NetzDG). The court called for the restriction of data inventory disclosure; for example, of IP addresses. In formulating the draft of the NetzDG section, the legislator was found to have adopted unconstitutional standards. As a result, the German Federal President suspended this and other drafts. eco commented several times on all drafts relevant to the Internet industry. At the end of November, eco sharply criticised what was referred to as a draft Repair Act. In December, the federal cabinet adopted the draft. The legislative process is expected to be completed in 2021.

BND Act
In May 2020, the German Federal Constitutional Court (BVerfG) made a landmark ruling on the strategic surveillance by the German Federal Intelligence Service (BND) of non-German nationals when not in Germany. Here, the central provisions were found to be incompatible with the German Constitution. At the end of November, the German Federal Chancellery presented a draft reform to comply with the BVerfG's conditions. From eco's point of view, the draft circumvents a number of the constitutional requirements. In addition, the BND is now to be allowed to hack telecommunications networks and platforms abroad. eco commented on the draft several times and, as an expert,

was invited to attend both the BVerfG and the hearing in the Bundestag. The draft was passed by the federal government in December. The legislative process will be completed and enter into force in 2021.

Terrorist content online
Towards the end of the legislative term, the former EU Commission presented a proposal to involve companies more in the fight against the spread of terrorist content online and to assign them greater responsibility. The proposal envisaged short reaction periods of one hour, takedown recommendations, as well as preventive measures (such as upload filters). eco positioned itself clearly against these measures, which – for SMEs in particular – cannot be implemented on a practical basis, and criticised the renewed discussion of upload filters. After slight improvements by the European Parliament, the trilogue negotiations began. Shortly before the end of the year, the Council and the Parliament agreed on a common position. The main points of criticism have nonetheless not been tackled. The official conclusion of the legislative process is still ongoing.

Copyright
The Copyright Directive (Digital Single Market Directive, DSM Directive) came into force in summer 2019 and is to be transposed by the EU Member States by June 2021. It consists in particular of controversial rules for a European ancillary copyright in favour of press publishers, as well as so-called "value gap" measures

(a licensing obligation and the threat of content filters). Various Member States, such as France, have either already enacted corresponding legislative measures to implement the DSM Directive or are on the verge of doing so. For the transposition in Germany, various proposals were put forward for discussion by the responsible German Federal Ministry of Justice and Consumer Protection (BMJV) and several consultations were held, in which eco actively participated and contributed with written comments and statements. Contrary to what had been announced, the guiding principles on Article 17 envisaged by the EU Commission for the transposition of the DSM Directive were not presented. The proceedings on the DSM Directive pursued by Poland before the ECJ are not to be ruled upon until after the summer of 2021. Further developments will be monitored by eco and actively accompanied.

German Act on Combatting Right-Wing Extremism and Hate Crime on the basis of the Network Enforcement Act
The German Federal Ministry of Justice and Consumer Protection (BMJV) presented a draft Act on Combatting Right-Wing Extremism and Hate Crime for discussion. eco submitted a detailed statement to the BMJV on the planned act and the envisaged changes, including the obligation to disclose passwords of telemedia service providers and to provide inventory data, as well as the introduction of a reporting obligation in the Network Enforcement Act

(NetzDG) for illegal content as part of a company's complaint procedure, naming the IP address and port number of the user.

At the end of January 2020, the BMJV presented a further draft bill for the amendment of the NetzDG. The intention of the amendment bill was to specify and expand the existing reporting obligations of social network operators, to make the complaint procedure more user-friendly, and to create out-of-court procedures for dealing with unlawful content, with the latter encompassing counter response and mediation. Likewise, parts of the European AVMD Directive on dealing with illegal content in video sharing services were to be transposed into national law. eco criticised the draft bill in a statement, drawing attention to the protection of trade secrets among operators of social networks and the proportionality of the planned measures.

The Act on Combatting Right-Wing Extremism and Hate Crime was introduced in the first reading in the Bundestag and was referred to the German Committee on Legal Affairs and Consumer Protection for consultation. As an expert, eco was invited to attend the Legal Affairs Committee's hearing on the proposed legislation. eco highlighted various European, constitutional and data protection concerns regarding the proposed legislation. Despite a ruling by the German Federal Constitutional Court (BVerfG) at the end of May 2020, which declared the legal basis for inventory data

disclosure in Germany to be unconstitutional, the German Bundestag passed the Act on Combatting Right-Wing Extremism and Hate Crime. The act is due to come into force in 2021.

The bill to amend the NetzDG was introduced for consultation in the German Bundestag in May 2020. Partly due to the ruling of the BVerfG on inventory data disclosure, the consultation process for amending the NetzDG was stalled. In addition, the parliamentary procedure added a research clause to the draft bill for the NetzDG. The purpose of the research clause is to enable scientists and academic institutions to access deleted or blocked content on social networks for research purposes. The bill for the amendment of the NetzDG is expected to be passed in 2021.

In order to address the legal uncertainties in dealing with illegal content and to provide an overview of the NetzDG's reform proposals, eco organised a policy breakfast in April 2020. In the course of the event, the eco guidelines for the reform of the NetzDG were presented.

Aspects of sustainable digitalisation

The debate on sustainable digitalisation intensified in 2020, starting with the presentation in March of Germany's first Environmental Digital Agenda by the German Federal Minister for the Environment, Svenja Schulze. The agenda sets out measures for achieving sustainable, climate-friendly and environmentally-friendly digitalisation in Germany. From the point of

Photo: chombosan, stock.adobe.com

view of digital infrastructure operators, the development of a data centre register and the revision of the European Ecodesign Directive are of particular importance. In a position paper, eco analysed and evaluated the planned measures, including strengthening research and development, establishing a cadastre of data centres, and revising the efficiency standards. In the course of the German Council Presidency, the aspects of sustainable digitalisation were discussed at the European level from July 2020 onwards. eco contributed to the dialogue with calls for sustainable digitalisation in Europe.

In September, the German Federal Environment Agency (UBA) published the key findings of the research project "Green Cloud Computing" on the energy and resource efficiency of digital infrastructures and produced recommendations for action. eco commented on a selection of the key research outcomes and stressed the need for European solutions to various issues. At the end of the German Council Presidency, the EU Environment Council of Ministers adopted conclusions for digitalisation for the benefit of the environment. Among other aspects, these conclusions called on the EU Commission to propose measures to record the documentation, transparency and reduction of the environmental footprint of data centres.

Whether a corresponding process will be initiated by the EU Commission remains to be seen.

Energy and climate policy

In late summer, the German federal government presented a draft Investment Acceleration Act (InvBeG), as well as a draft for the reform of the Renewable Energies Act (EEG). In its assessment of the Investment Acceleration Act's key points, eco noted the act's potential, while also pointing out that construction and planning law requirements had been overlooked; for example, in the area of cutting back on bureaucracy and accelerating procedures of digital infrastructure operators. In its position on the EEG, eco pointed to European developments and criticised the slow-moving roll-out of renewable energies, calling for economically attractive financing models for renewable energies independent of the EEG. The levying of the EEG surcharge still leads to considerable additional costs for the operators of digital infrastructures and thus has a direct impact on their competitiveness. At the European level, various strategies were presented as follow-up measures to the European Green Deal in 2020 and the preliminary work on reform processes was initiated. In late summer, the EU Commission launched numerous dialogue processes for the modernisation of energy regulations. These included: a consultation on the revised guidelines on State Aid for Environmental Protection and Energy; the consultation on the revision of the Energy Tax Directive; as well as impact assessments on the Energy Efficiency Directive

and on sustainable product design under the Ecodesign Directive. eco contributed to each dialogue process and highlighted the conditions and relevance of digital infrastructures in Europe.

European Industrial Strategy and SME Strategy

In March, the EU Commission presented both the European Industrial Strategy and the SME Strategy. The strategies define fields of action for the parallel ecological and technological transformation, and outline measures in these fields. In a position paper, eco commented on individual measures; for example, regarding roll-out of digital infrastructures, such as 5G networks, cloud technology and quantum technology. An announcement was made in autumn 2020 that, in order to address the economic consequences of the Covid pandemic, the European Industrial Strategy was to be revised by spring 2021. To revise the Industrial Strategy, the Industrial Forum was convened in December with the participation of 26 European umbrella organisations.

5.2 EuroISPA

eco is a founding member of the European umbrella organisation of Internet service providers, EuroISPA, an organisation which has its headquarters in Brussels and which has been actively representing the interests of its members at the European level since 1997.

The members meet regularly in seven committee groups, as well as at quarterly general meetings in order to both exchange information and views on national and European developments and to develop positions and statements. In the past year, EuroISPA's focal topics were those of cybersecurity, terrorist content online, e-evidence and ePrivacy. In addition, EuroISPA appointed a representative

to actively participate in the stakeholder dialogue on Article 17 of the Copyright Directive, which is still awaiting conclusion. In preparation for the upcoming Digital Services Act (DSA), EuroISPA members also worked within the Intermediary Liability Committee on an appropriate positioning for this legislative proposal. This work and the resulting discussions with the EU Commission fed into the DSA proposal.
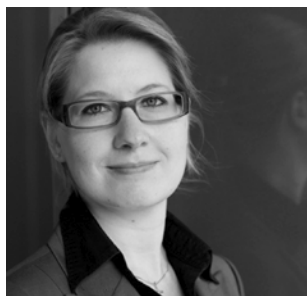
Alexandra Koch-Skiba
Attorney-at-Law
Head of Complaints Office

Kira Peek
Attorney-at-Law (Legal Counsel)
Consultant Complaints Office

Sebastian Fittig
Attorney-at-Law (Legal Counsel)
Consultant Complaints Office

Peter-Paul Urlaub
Attorney-at-Law (Legal Counsel)
Consultant Complaints Office

Christian Kubiak
Attorney-at-Law (Legal Counsel)
Consultant Complaints Office

5.3 eco Complaints Office: Combatting Illegal Internet Content and Youth Media Protection

Dedicated to combatting illegal content on the Internet

For close on 25 years, the eco Complaints Office has been fighting successfully against illegal content on the Internet and is committed to ensuring that illegal content is taken down and criminal offences are reported to the authorities. In fulfilling this commitment, cooperation with the various actors and neutral and transparent processes are of equal importance.

The work is based on voluntary cooperation with society as a whole, and its fundament is that of the self-regulation of providers and the engagement of Internet users. From the outset,

eco has cooperated with law enforcement agencies in the fight against child sexual abuse material and other illegal Internet content.

In addition, the eco Complaints Office is the contact point for eco members, for the state, society and politics.

Internet users can report suspected illegal Internet content to the eco Complaints Office, free of charge and anonymously, for example under complaints–office.eco.de. The Complaints Office's lawyers then assess whether the reported content violates German law and take appropriate measures if necessary.

The eco Complaints Office can also be reached via the portal www.internet–beschwerdestelle.de/en, which it operates together with the German Association for Voluntary Self-Regulation of Digital Media service providers (FSM), as well as via the German information platform for young people jugend.support.

Statistics

In 2020, a total of 14,420 complaints were reported regarding potentially criminal content or content potentially violating youth media protection. Just under 40 per cent of these reports were justified complaints. With 5,523 cases, in 2020 the eco Complaints Office

registered the highest number of justified complaints in its history, which came in at 18.7 percent more than in the previous year. The principal reason for this is that the proportion of justified complaints has grown in comparison to previous years.

Depending on the nature of the violation and the location of the server location, the justified complaints were forwarded to the law enforcement agencies, the content provider, the host or platform provider, and/or members of the INHOPE network.

Total Growth in Numbers of Complaints in the Field of Youth Media Protection

Usenet ■ Email ■ Web-based ■ Chat ■ Filesharing ■ Other

Source: eco Complaints Office, 2021

Proportion of Justified Complaints 2020 Compared to 2019 (Excluding Spam)

2020: 38.0%
2019: 17.2%
Justified

2020: 62.0%
2019: 82.8%
Unjustified

Source: eco Complaints Office, 2021

In terms of content, the majority of complaints related to depictions of the sexual abuse and sexual exploitation of minors, defined as Child Pornography in Section 184b of the German Criminal Code (StGB).

In comparison to previous years, shorter take-down times for depictions of sexual abuse of children were once again registered.

A total of 97.7 percent of the illegal Internet content reported upon by the eco Complaints Office – such as depictions of sexual abuse, incitement of the masses, and depictions of violence – were removed worldwide. This demonstrates once again that self-regulation works – also internationally.
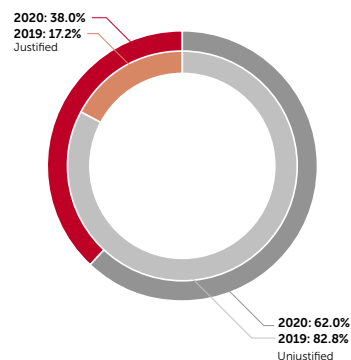
Network and committee work/political engagement in 2019: an excerpt

INHOPE – eco once again represented on the INHOPE Executive Board

INHOPE, the International Association of Internet Hotlines (www.inhope.org) was founded in 1999 by eco, among others. The international umbrella organisation of Internet hotlines – hotlines which accept complaints in particular concerning depictions of the sexual abuse of minors – consists in the meantime of more than 45 hotlines in over 40 countries.

Compliance with the minimum standards and best practices defined by INHOPE is reviewed as part of what is known as the Quality Assurance Program. In 2020, the regular rotational review of the eco Complaints Office took place. This again demonstrated that the eco

Complaints Office continues to more than meet all minimum standards and best practices.

In 2020, eco also advocated for the targeted expansion of the network and for the promotion of a worldwide deletion of child abuse depictions (notice & take-down) in the country of origin. In addition, eco contributed to the further development of the database for the exchange of complaints within the network.

Since June 2018, Peter-Paul Urlaub, eco Complaints Office Consultant, has been a member of the INHOPE Board. He was re-elected in July 2020 and has now taken on the role of Treasurer.

Safer Internet Centre Deutschland (saferinternet.de)

As (co-)operator of the portal www.internet-beschwerdestelle.de/en, the eco Complaints Office has been part of the German Safer Internet Centre (www.saferinternet.de) since 2008. Alongside eco, other members of the Safer Internet Centre are the FSM, jugendschutz.net, "Nummer gegen Kummer", and klicksafe.de (operated by the Rhineland-Palatinate State Media Commission and the North Rhine-Westphalia Media Authority).

Within the framework of this cooperation, on the occasion of the European Day for the Protection of Children against Sexual Exploitation and Abuse on 18 November, the eco, FSM and jugendschutz.net hotlines organised a joint and very successful virtual parents' evening on the topics of cybergrooming, depictions of abuse,

Growth in Number of Justified Complaints

Total

Child Pornography

Anti-constitutional Content

Source: eco Complaints Office. 2021

Justified Complaints 2020 (Excluding Spam)

1.3%
Anti-constitutional Content

19.4%
Rest

79.3%
Child pornography

Source: eco Complaints Office, 2021

Average Duration until Take-Down in Annual Comparison (Child Pornography)

■ Total Duration ■ Duration Germany

Source: eco Complaints Office, 2021
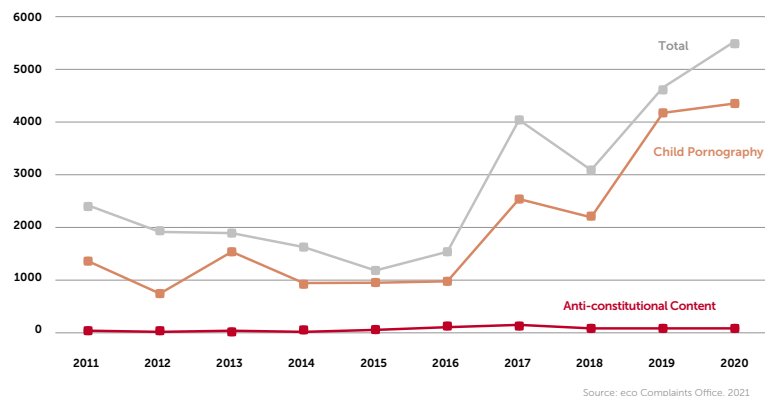
sexual violence and exploitation on the Internet.

In 2020, the German Safer Internet Centre once again received EU funding as part of the Connecting Europe Facility (CEF).

Cooperation on youth media protection with other relevant actors

At the invitation of the Commission for the Protection of Minors in the Media (KJM), the eco Complaints Office took part in workshop discussions on the technical protection of minors in the media, and also participated in a working meeting with KJM, the German hotlines, and the Federal Review Board for Media Harmful to Minors (BPjM) concerning the receipt and processing of tips from the public about youth-endangering online content.

In 2020, the eco Complaints Office continued to maintain a confidential exchange with the Entertainment Software Self-Regulation Body (USK) – in its general scope, but also with regard to questions in individual cases. Since 2019, Sebastian Fitting, eco Complaints Office Consultant, has also been active in assessment committees as a youth protection expert for USK.online.

"Trusted flagging/reporting" is an essential element of the eco Complaints Office's effective work. The special reporting channels for trusted reporters enable direct interaction between hotlines and providers, which also has a positive effect on reaction times. 2020 saw cooperation in this area being further expanded. For example, the eco Complaints Office was appointed to Twitter's Trust and Safety Council in the field of "Child Sexual Exploitation". In
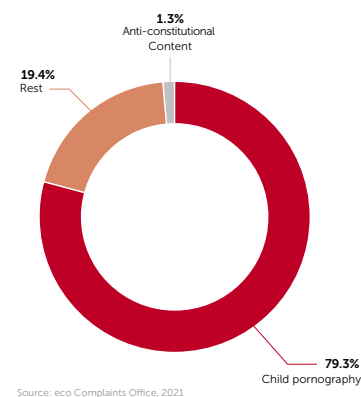
addition, the eco Complaints Office was awarded "Trusted Reporter" status by three further online providers.

Law enforcement agencies

In order to have illegal content taken down and to report criminal offences, the eco Complaints Office cooperates with law enforcement agencies at both German federal and federal state level.

In the fight against depictions of the sexual abuse of children, close and effective cooperation with the German Federal Criminal Police Office (BKA) takes place, with this also reflected in the German federal government's report on the success of deleting Child Pornographic web content. The most recent report, published in September 2020, once again showed that the principle of "take down instead of blocking"
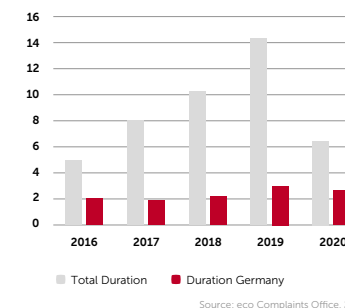
and the cooperation of the hotlines, the BKA, and the Federal Review Board for Media Harmful to Minors (BPjM) present very effective means for combatting illegal Internet content.

In the area of state security offences, the eco Complaints Office cooperates with police authorities and public prosecutor offices at both the federal and state levels. Since 2019, eco has also been a member of the North Rhine-Westphalian initiative, "Prosecute, don't just delete", and thereby actively supports the rigorous criminal prosecution of hate speech on the Internet.

In addition, the collaborative work between the eco Complaints Office and the police at state level is part of a cooperation agreement between eco, Networker NRW, and the North Rhine-Westphalia Criminal Police Office (LKA

Take-Down Rates Child Pornography (German Cases)

Percent

2019   2020

☐ 2 days ☐ 4 days ■ 1 week
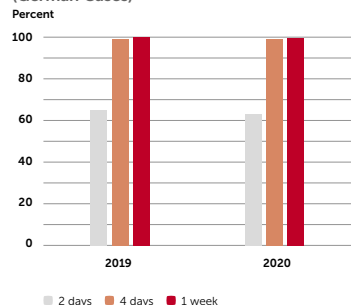
Source: eco Complaints Office, 2021

Take-Down Rates Child Pornography (All Cases)

Percent

2019   2020

☐ 1 week ■ 4 weeks
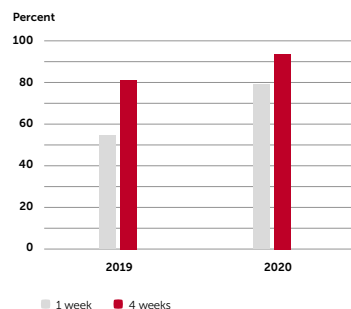
Source: eco Complaints Office, 2021

Total Success Rate for Web-based Content 2020

2.3%
Not Redressed

97.7%
Redressed
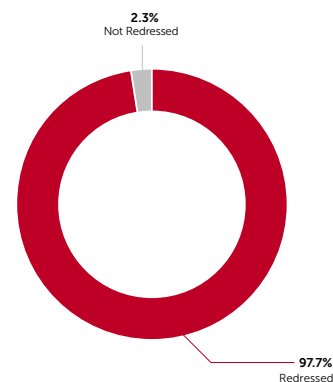
Source: eco Complaints Office, 2021

NRW).

Amendment to protection of minors in the media

In 2020, the German legislator presented concrete proposals for an amendment to the protection of minors in the media and put them up for discussion. Initially, a draft bill to amend the Protection of Young Persons Act (Jugendschutzgesetz or JuSchG) was presented at the beginning of the year. The amendment of the JuSchG is intended in particular to take the changed media usage behaviour of children and young people into account and to enable minors to participate in relevant media in safe interaction spaces without incurring any risk. The eco Complaints Office's contribution to the amendment process included participation in a hearing at the German Federal Ministry for Family Affairs, Senior Citizens, Women and

Youth (BMFSFJ) on 6 March 2020 in Berlin. From eco's point of view, for example, it is important to have a coherent legal framework accompanied by coherent supervisory oversight. What is also imperative is to acknowledge that there is no one-size-fits-all solution, given that different types of providers have different options for action when it comes to combatting illegal Internet content and protecting minors.

In the spring, the German federal states also submitted a discussion draft for the amendment of the German Interstate Treaty on the Protection of Minors in the Media (Jugendmedienschutz-Staatsvertrag or JMStV), which includes fundamental changes regarding the technical protection of minors. The eco Complaints Office contributed to the discussion by participating in an expert meeting on 9

September 2020, as well as in bilateral exchanges of views with representatives of the federal states, and highlighted concerns and existing problems regarding the proposed amendments. Of particular concern here are the proposed obligations for providers of operating systems and browsers and their technical fulfilment.

The Complaints Office also participated in the amendment process through taking part in the digital Future Workshop of the German Federal Review Board for Media Harmful to Minors (BPjM).

Annual Report of the eco Complaints Office

Transparency is essential for the work of a hotline. This being the case, in March 2020, eco launched the fourth independent Annual

Report of the eco Complaints Office in political event formats. Keynote speakers were Dorothee Bär (Minister of State in the German Federal Chancellery and Federal Government Commissioner for Digitalisation) and Dr. Maximilian Schubert (President of EuroISPA).

Youth Media Protection Expert Lunch & eco Youth Protection Officer Service

The portfolio of the eco Complaints Office is rounded off by individual services in the area of youth media protection that are offered independently of the general complaints work. As such, when it comes to assessing online offers and necessary measures, members can benefit both from the hotline's fully legally qualified personnel and its approximately 25 years of expertise in the field of youth media protection.

Youth Media Protection Expert Lunch

With the "Youth Media Protection Expert Lunch", the eco Complaints Office offers an open forum targeted exclusively at association members who are active in the field of youth media protection, with the aim of enabling the exchange of experiences and sharing information.

Two to three planned meetings are held per year, with additional relevant parties and external experts sometimes also invited to contribute. While these are ordinarily in-person meetings, due to the Covid pandemic, virtual or hybrid formats were offered as an alternative in 2020. Topics under discussion included, in particular, the plans of the federal and federal state governments to amend the German Interstate Treaty on the Protection of Minors in the Media (JMStV), the European Commission's strategy to fight child sexual abuse, and obligations for domestic service providers to take action in the case of foreign youth-endangering online content. Additional topics that were addressed included the eco Complaints Office's experiences in combatting illegal content and engaging in other political endeavours.

eco Youth Protection Officer Service

The roles and functions of the youth protection officers are:

- Advising the provider
- Contact person for users
- Point of contact for official oversight

Youth protection on the Internet is a task for society as a whole. With the eco Youth Protection Officer Service, both eco members and external companies have the opportunity to make their contribution to this cause. Certain telemedia providers with content that is developmentally-impairing or youth-endangering, as well as providers of search engines, may also be obliged to appoint a Youth Protection Officer in accordance with Section 7 of the German Interstate Treaty on the Protection of Minors in the Media (JMStV).

With the eco Youth Protection Officer Service, the eco Complaints Office comprehensively supports telemedia providers in the implementation of this obligation or in the voluntary appointment of a Youth Protection Officer. The Service offers the following functions and benefits:

- Comprehensive consultation on matters relating to youth protection
- A neutral point of contact vis-à-vis users
- A minimisation of liability risk
- Prevention of official fines and written warnings
- An increase in user trust through effective youth protection
- Current information and updates on developments and legal changes in the area of youth media protection

Further information on the working approach, statistics and services of the eco Complaints Office is available at: complaints-office.eco.de, as well as in the eco Complaints Office Annual Report 2020.

Melanie Busse
Office and Events Manager
Berlin Office

5.4 Events and Highlights of the Policy, Law & Regulations Division 2020

In 2020, the Policy, Law & Regulations division organised 28 events in the eco Capital Office premises, in external locations, or online, with the online events taking place from March onwards due to the Covid pandemic. Approximately 2,300 participants took part in the events.

The events of the Policy, Law & Regulations division are primarily aimed at political representatives and interested stakeholders from the political arena in Berlin and Brussels, as well as eco member companies. Here, eco's focused target group includes federal ministers, state secretaries, spokespersons on Internet policy from parliamentary groups, members of the German Bundestag and their colleagues, and representatives of the ministries and federal states.

In accordance with tradition, the year 2020 also began with the New Year's receptions at eco's representative offices in Berlin and Brussels. Other events such as the policy breakfasts in Berlin and Brussels and evening events such as the popular eco pol*IT*alks remained an integral part of the year's activities in 2020 and were in a number of instances very successfully adapted into Covid-compliant online formats.

An excerpt of the division's event highlights is set out below:

eco New Year's Reception 2020 in Berlin: IT security challenges in a connected world

The New Year's Reception on 28 January 2020 was held in keeping with tradition at the eco Capital Office in Berlin. For eco, 2020 was a special year – the Association of the Internet Industry celebrated its 25th anniversary. For the New Year's Reception, eco welcomed numerous guests from politics and the Internet industry to its Berlin office. In his opening speech, eco Chair of the Board Oliver J. Süme

called for a digital turnaround and a responsible handling of the Internet.

Among other factors, Klaus Vitt, State Secretary at the German Federal Ministry of the Interior (BMI), underlined the high value of digital sovereignty and the importance of cybersecurity.

The speeches were met with rousing applause from the approximately 150 guests of the evening. The latter comprised principally of member companies and representatives of the German Bundestag, ministries and the Internet industry.

eco netTALK – The new livestream format

eco netTALK – "Significance of digital infrastructures in times of crisis: A real opportunity for digitalisation or a gateway for attacks on fundamental rights & data protection?"

Technology scepticism can be seen as something of the past: In times of the Covid crisis, the significance of digital infrastructures and the use of innovative digital technologies started to grow exponentially. More and more concrete positive examples of the digitalisation of society became evident; these were very tangible

experiences that raised hope for greater future transformations of society. Even after just a few days, initial progress had been made: although, for years, this had seemed impossible, companies could now switch to working remotely, pupils were already learning online – albeit in a limited way, given that the German education system had not reacted to digitalisation for years. The Internet had become a societal super tool and was currently keeping social life going: Digital proximity in times of social distance!

At the first eco netTALK, alongside the SPD Federal Chairwoman Saskia Esken, eco Managing Director Alexander Rabe discussed and analysed

the central challenges and solutions around the following topic: The significance of digital infrastructures in times of crisis – what opportunities are arising for the digitalisation of society and where are do threats exist for irrevocable encroachments on our privacy?

eco netTALK – "Covid and its consequences for the digital economy: Crisis as opportunity? Potentials and challenges for digital companies"

Each and every one of us experienced how the situation triggered by Covid abruptly accelerated digitalisation processes in numerous fields. The most prominent fields (if not the only ones)

in which digitalisation had previously been very sluggish were those of digital work and digital learning. But now digitalisation was helping to maintain essential processes and structures, even in times of no-contact policies and curfews.

High-performance and sovereign digital infrastructures and innovative digital services and technologies were more in demand than ever – on the one hand, to cope with the consequences of the pandemic, but also in the direct fight against Covid, for example in the form of an anti-Covid tracking app.

But was the digital industry therefore really the big winner of this crisis? What were the consequences of the Covid crisis for different branches of the digital industry? What framework conditions did digital companies need? How could digital technologies be best used to overcome the crisis and its consequences, and how could sustainable trends for digital transformation be created from this?

At the second eco netTALK, along with Thomas Jarzombek – the Commissioner for the Digital Economy & Start-ups with the German Federal Ministry of Economic Affairs and Energy (BMWi) – eco Chair of the Board Oliver J. Süme analysed and discussed the central challenges and potentials of the digital industry, as well as the unique responsibility that the industry had been endowed with.

Internet Policy Anniversary Forum – Digital Germany 2030 – Digitalisation with Responsibility as the Key to Prosperity and Growth

At the Internet Policy Anniversary Forum held in KALKSCHEUNE on 29 September, Internet industry representatives held a talk with representatives from politics and academia before an audience of approximately 80 guests. For political Berlin, this fifth Internet Policy Forum formed a bridge from eco's 25th anniversary celebration, which took place online in June. It goes without saying that the forum was held in keeping with the eco anniversary motto "Internet with responsibility"; that is, a gathering which complied with Covid conditions, with selected guests on location and a large number of online participants. Together with high-ranking guests such as the Minister of State for Digitalisation, Dorothee Bär, the new Federal CIO Markus Richter and Thomas Jarzombek – Commissioner for the Digital Economy at the German Federal Ministry of Economic Affairs and Energy (BMWi) – as well as top speakers from eco's anniversary sponsors and members such as Huawei, Microsoft, IBM, Leaseweb and Google. At the same time, the aim was to take a visionary look ahead to digital Germany 2030 and the question: What must happen now in terms of digital policy so that we are well positioned digitally in 2030?

Participants at eco Berlin Events 2020

Total 2,301

Date	Event	Value
21.01.	Policy Breakfast AI Study	33
28.01.	New Year's Reception Berlin	120
05.02	Presentation AI Study Brussels	7
05.02.	New Year's Reception Brussels	54
12.02.	eco Roundtable - Morning Dialogue	20
09.03.	Complaints Office Expert Lunch	3
10.03.	Pres. of eco Complaints Office Annual Report 2019	18
26.03.	netTALK Saskia Esken (LiveStream)	576
30.03.	Online Pres. of eco Complaints Office Annual Report	32
03.04.	Schoko & Sushi (Webinar)	32
08.04	netTALK Thomas Jarzombek (LiveStream)	349
21.04.	Network Enforcement Act Policy Breakfast (Webinar)	46
30.04.	Press Conversation ADL Study (Webinar)	44
27.05.	pol/Talk Alliance (Webinar)	72
16.06.	The Digital Evolution - Brussels (Webinar)	174
23.06.	Press Conversation ADL Study	28
01.07.	Conversation with Policy-Makers - GWB-Digitalisation Act	43
07.07.	eco Roundtable - Corona (Webinar)	38
09.09.	Brussels Talk GAIA-X (Webinar)	133
25.09.	Schoko & Sushi	35
29.09.	Internet Policy Forum - Livestream	65
07.10.	Live-Stream: eco Web Talk: "The Future of Mobility"	56
10.10.	Complaints Office Expert Lunch	13
10.11.	eco netTALK - "Sustainability & Digitalisation"	36
18.11.	Virtual Parents' Evening - Complaints Office	132
10.12.	Virtual Information Event on Brexit	71
26.11.	eco Roundtable - Security Update	61
24.11.	Introduction to Borderstep Study	10

6. Association Communication

In 2020, the focus of the eco Association communication team was that of eco's 25th anniversary and the roll-out of the related campaign, "Digital Discovery – 25 Years of eco – Internet with Responsibility".

The campaign followed the path of highlighting, on the one hand, the vast developments that the Internet and digitalisation have been able to trigger in various areas such as education, communication, security, industry and mobility. On the other hand, eco's stance as an association with integrity which has worked for the past 25 years towards a good and responsible Internet was to be conveyed as a unique selling point, while, at the same time, the main sponsors were to be accorded visibility. This was accomplished both through targeted media work and consistent storytelling, as well as through eye-catching visuals, advertising motifs, and video content built into online and social media communication. The German-language campaign website 25jahre.eco.de was the showcase for the campaign.

From a communications perspective, the Covid-19 pandemic presented both a challenge and an opportunity for eco's PR. On the one hand, the loss of all live formats proved to be challenging, meaning that press conferences, press trips and on-site appointments had to be spontaneously replanned as online and virtual formats. From a topical perspective, the pandemic also initially caused a disruption of the communication plans originally drawn up for the anniversary. In the practical implementation, however, we managed to harness the crisis as an opportunity. In this respect, we repeatedly made the topic of Covid-19 and the numerous related digitalisation issues the reference point and hook for very successful agenda setting. We also profiled the Internet industry and digitalisation as a sustainable solution for many challenges related to the prevailing situation, as well as a driver for the overall economy and society.

The successful eco media work was reflected not least in an almost 25 percent increase in the total number of media reports offered by a consistent share of leading media in Germany.

What was also very successful in 2020 was the launch of the new eco German-language podcast "Das Ohr am Netz" ("An Ear to the Internet"), which is released bi-weekly and provides interesting insights into current digital topics and issues in the form of interviews with leading figures from the Internet and digital landscape.

Sidonie Krug
Head of Communications
Spokesperson Political
Communication

Christin Patricia Müller
Senior PR Consultant
Deputy Spokesperson
Political Communication

René Bernard
PR Editor

Hanna von der Au
Communication PR
Manager

Laura Treskatis
Junior PR Specialist for
Political Communication

Hanna Sissmann
Communication PR
Trainee

Since June 2020, Hanna Sissmann has reinforced the team as a PR trainee, primarily in the area of online and social media.
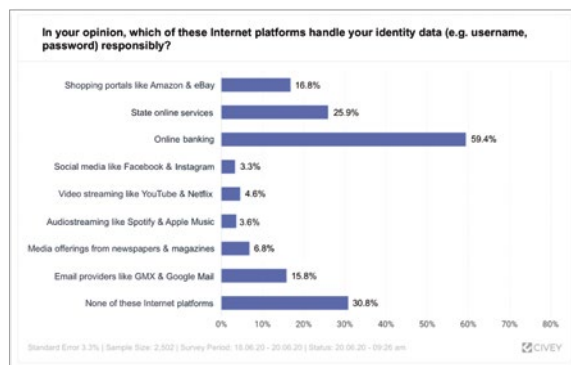
6.1 Communication of Industry Topics

eco's industry communications team tracked the impact of the pandemic with representative surveys of the German population. One interesting finding revealed that almost 75 percent of employees perceived positive effects emerging from the crisis. Digital infrastructures were also benefitting from Covid times in the medium-term, as demonstrated by eco and Arthur D. Little in a joint study. Following on from an online press conference on the study, the core message reported by dpa and numerous leading media was: We are facing a digital decade of superlatives. Up to 75 percent growth in revenue is expected by 2025.

Many opportunities for communication were also generated by the effects of the Covid pandemic. For example, due to employees having to switch to the home office, IT security aspects played a major role. The media reported, for instance, on eco's tips for phishing protection at home and for greater cyber hygiene in Covid times.

Communication on the potential of artificial intelligence

As in the previous year, artificial intelligence (AI) played a major role in communication. Press releases on the major eco AI study showed: Artificial intelligence can increase the German GDP by up to 13 percent by 2025. The total growth potential is forecast to amount to 488 billion Euro in Germany alone. February saw the launch of the Service-Meister AI project, the focus of which is upon harnessing AI's potential for maintenance and service

processes. eco's industry communications team flanked the progress of the subsidised project with press releases.

AI also presents marketing executives with a great deal of potential, but this is something that is often overlooked. This was the finding of an eco AI study jointly conducted in April with Dr. Schwarz Consulting; a study which attracted attention in the specialist marketing media. Similar findings were delivered by an eco study produced by the Digital Business Models division which, in July, underlined the potential for improvement in online advertising.

The eco Academy's webinar series, launched in February 2020, also offered occasions for communication, allowing companies to keep their digitalisation know-how up-to-date, on a flexible basis and from any location. As a new initiative with an online format, eco launched netTALKS. To take just one example: Arndt G. Kirchhoff, Vice President of the German Association of the Automotive Industry (VDA) and Karl-Heinz Land, member of the eco Presidency Committee, stated in October that "Cars and the Internet are merging", a message picked up by eco and shared in a press release.

Digital sovereignty and trust

Building trust is particularly challenging within digital ecosystems. Here, state institutions in particular have some catching up to do, as eco highlighted in 2020. A survey that received a lot of attention in the press showed that users'

trust when it comes to data protection is higher in online banking than in state services. Against this backdrop, the eco Association communication team repeatedly profiled the European cloud project Gaia-X. Towards the end of the year, the green light was given for communication on the Gaia-X Federation Services, with these to be specified by eco alongside partners.

Security remains as top theme

The 2020 edition of the annual IT Security Study once again examined the threat situation. eco presented the results to the public in the form of several press releases on various aspects, content which was picked up on by a wide range of specialist media. An eco study which was cited in a wide range of industry media publications examined the potential of blockchain-based solutions in small and medium-sized enterprises (SMEs). The eco Association communication team also applied a focus to the discussion paper on DNS-over-HTTPS. This white paper offers proposals for greater security in network environments and was reported on by specialist media.

The eco Association's commitment to a governance framework for a consortium blockchain with renowned partners received significant resonance in the business and specialist press. In order to improve the protection of vulnerable IoT devices, eco and AV-Test announced that they would increasingly work together in a collaborative context.

6.2 Political Communication

eco://awards as an online award ceremony

A communicative highlight of autumn was the 19th eco://awards. The winners of this very prestigious Internet industry award were announced by the eco Association communication team immediately after the online awards ceremony. In particular, a large number of media reported on the "Ladies in Tech" award won by Agnes Heftberger (IBM).

Digitalisation & Sustainability as new top theme

The topic of digital infrastructures has been a focal point of eco communication for many years, and has gained a particularly intensive focus since the Alliance for the Strengthening of Digital Infrastructures in Germany was founded in 2018 under the umbrella of the eco Association.

Selecting sustainability as a topical focus for the Alliance in 2020 proved to be the right decision. The topic was covered very intensively in media discourse, not least due to the Covid pandemic and the serious attention paid to the importance of digital services and efficient digital infrastructures, the significance of which is now visible to all. Additional media attention also resulted from the focus topic of the Digital Summit of the German federal government on the topic of "More Sustainability by Means of Digitalisation". In this context, eco was able to repeatedly position core messages of the Alliance in leading media and to effectively convey these to the political target group.

The sustainability effects that can be achieved on the basis of energy-efficient data centres, for example, were highlighted in the study "Data Centres in Europe – Opportunities for Sustainable Digitalisation", which the Alliance for the Strengthening of Digital Infrastructures in Germany produced and published together with the Borderstep Institute.

Due to Covid, the originally planned "Internet Locations" press tour could not take place on the occasion of the Digital Summit in the German city of Jena. However, eco was instead given the opportunity by the German Federal Ministry for Economic Affairs and Energy (BMWi) to acquire considerable visibility from the political and media target group in the form of an info film on the topic of sustainability and digital infrastructures. The film was produced by the Alliance and was broadcast during the intermission programme of the virtual Digital Summit.
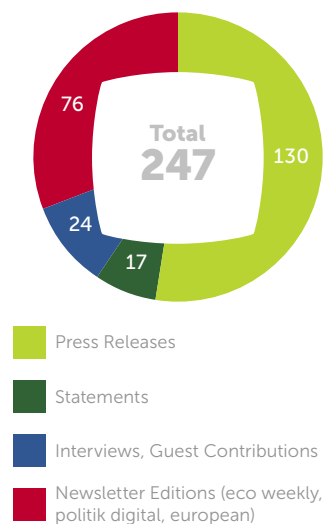
Successful expansion of EU communication

An important goal of the eco Association's 2020 political communication was to expand its media presence in European media and to boost the visibility of the association's topics and activities taking place in the Brussels European Office. To this end, for the first time, targeted contacts were established with leading European media, online press conferences were organised on internationally relevant topics such as the Digital Services Act or the above-mentioned Borderstep study on energy efficiency in data centres, and eco Board interviews were organised with international editorial offices. With 600 international media reports, a very promising initial rate of success was achieved.

A new English-language newsletter format, "eco European", is designed to achieve additional reach and prominence. The newsletter appears approximately every two months and provides an overview of current European policy topics which eco follows and comments on for the benefit of eco members.

PR Activities 2020 in Total (Industry and Political)

Total
247

76

130

24

17

■ Press Releases

■ Statements

■ Interviews, Guest Contributions

■ Newsletter Editions (eco weekly, politik digital, european)

Media Evaluation in Annual Comparison (Print and Online)

6,000

5,000

4,000

3,000

2,000

1,000

0

4,352

5,382

2019   2020

Proportion of Leading Media in Annual Comparison

14.1 %

Appearance in Leading Media

16.7 %

2019
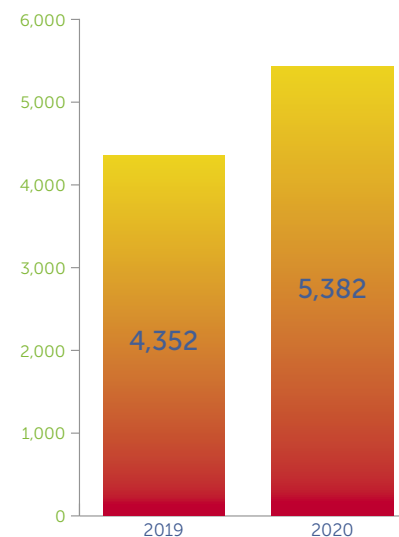**4,352**

Print & Online

2020
5,382

Significant media coverage for eco Complaints Office

In 2020, the eco Complaints Office's engagement was marketed in the media with a particularly high rate of success. The ongoing debate on the topics of hate speech and the German Network Enforcement Act (NetzDG) proved to be an opportune field for communication. Prominent speakers such as the Minister of State Dorothee Bär, who supported the presentation of the eco Complaints Office Annual Report, also had a positive impact on media attention. In addition, within the scope of media communication, the Complaints Office was repeatedly highlighted as an exemplary proof point for the eco anniversary motto "Internet with Responsibility".
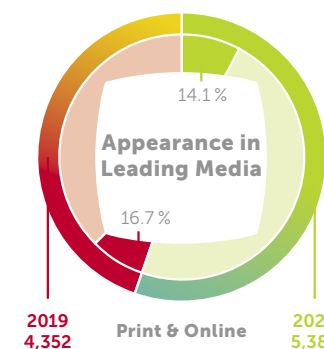
6.3 Selected Media Highlights
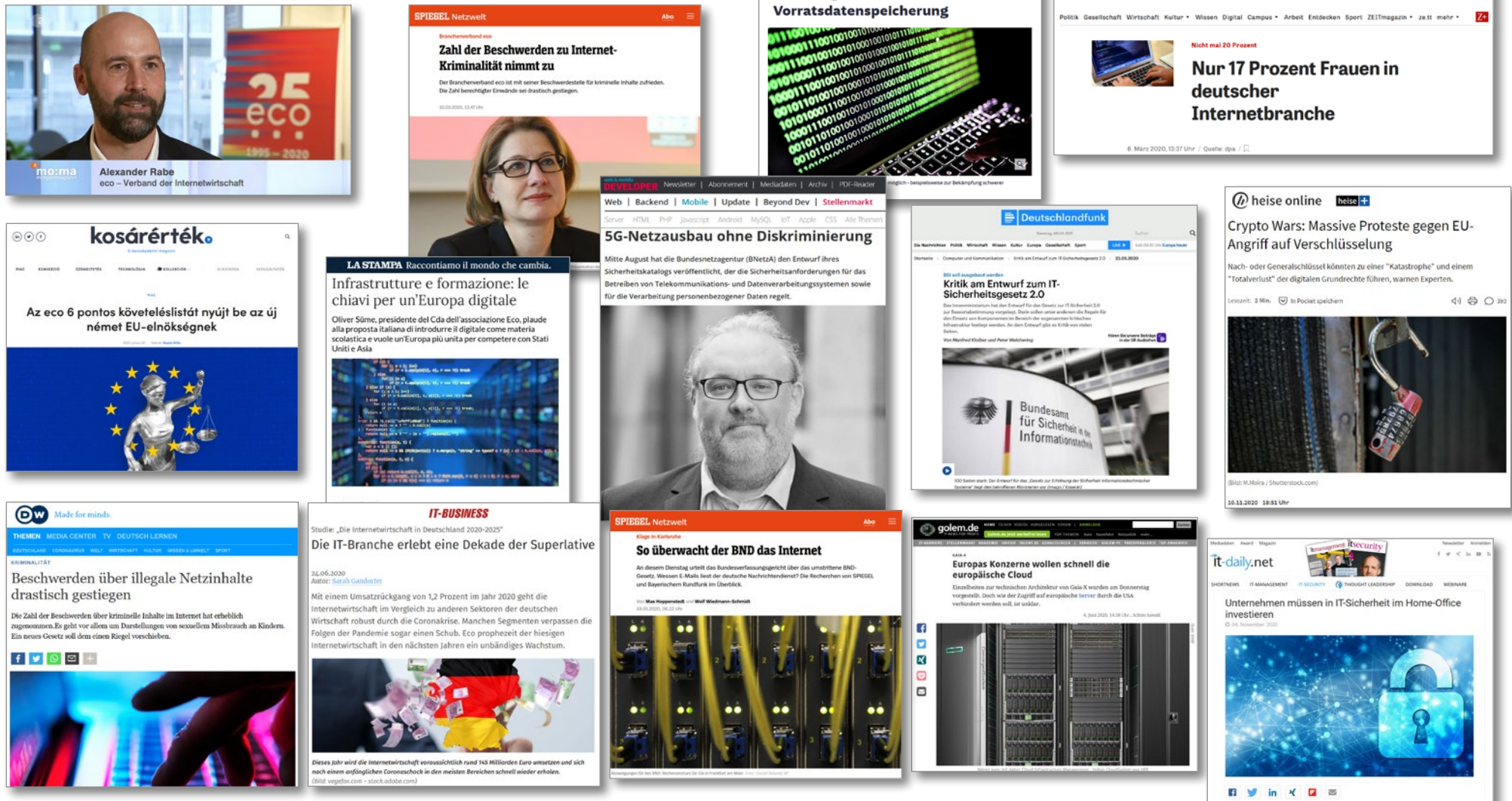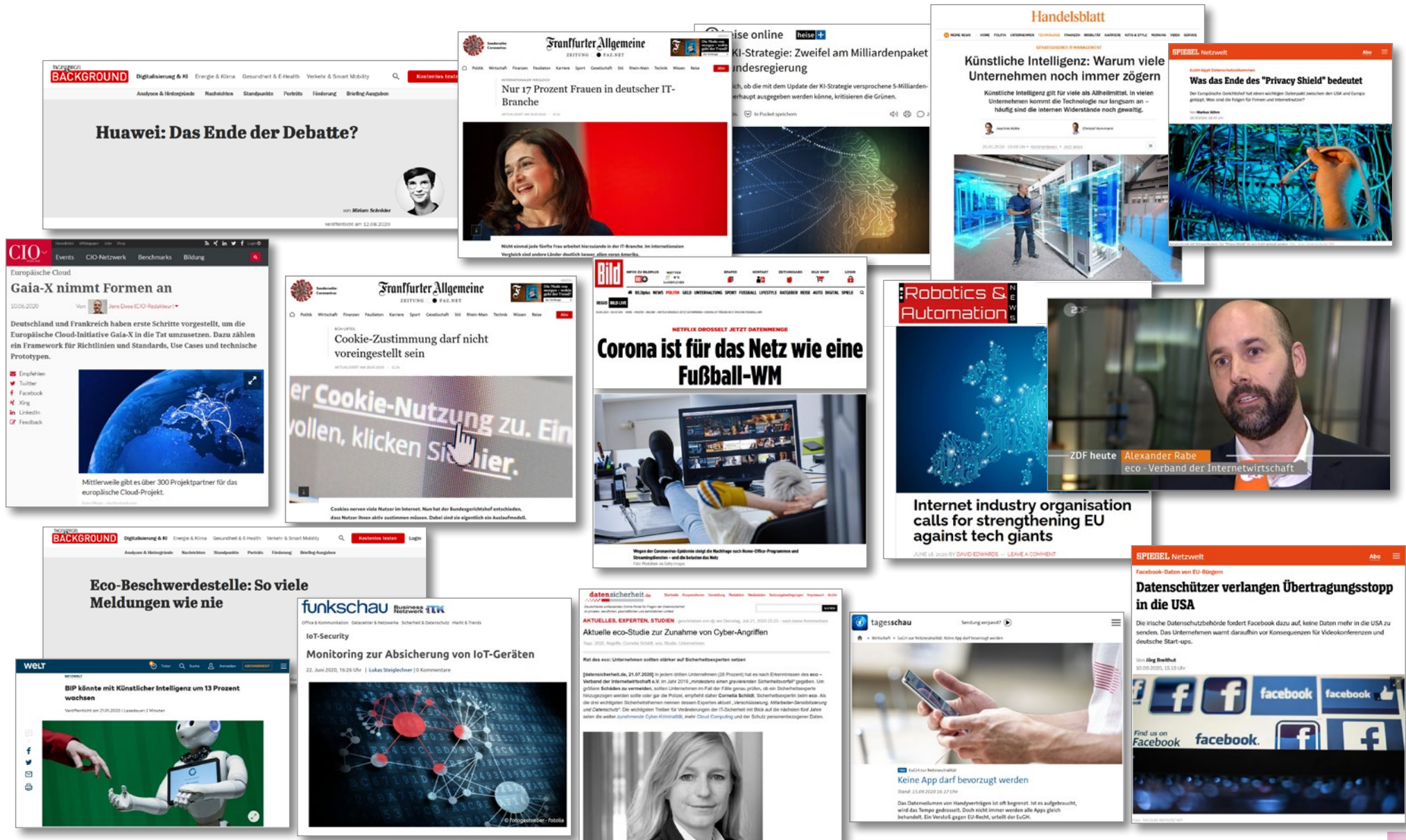
Benjamin Büttrich

Head of Web Development

6.4 eco Websites

When it comes to the eco websites, these also reflect the fact that 2020 was an extraordinary year.

In a year beset by numerous cancellations of face-to-face events, the websites were the central point of contact for members, partners and the entire network. This is where the entire content and the calendar of digital-only formats could be found. Even the 25th anniversary – which eco would naturally have liked to celebrate in a special location, as a reunion together with everyone – took place as an online format via its own microsite.
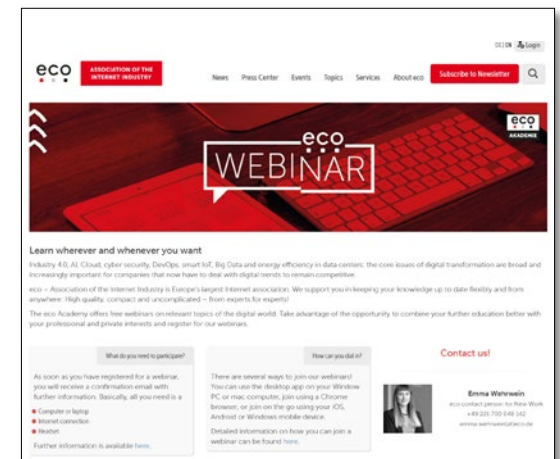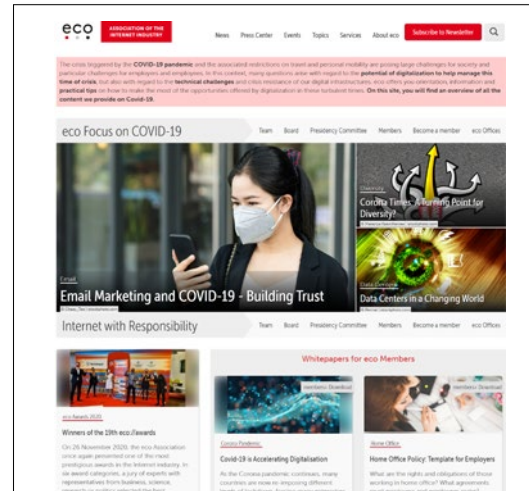
Like most other organisations, companies and private individuals, in 2020 eco increasingly integrated trusted and new tools into its web portfolio. Many website visitors were guided directly from www.eco.de or international.eco.de or from the newsletter to webinars and virtual events via a Software-as-a-Service solution.

The focus here – especially in times of lockdowns and restrictions – was on the reliable and transparent deployment of all tools. When in doubt, eco always opted for a secure and privacy-oriented solution. As a result, some visits and page impressions could not be fully incorporated into the figures for 2020.

As such, the eco web services set a good example:

Whether it comes to cookies, tracking or third-party content – eco leaves it up to its web users to decide what eco may offer and evaluate. The service-oriented optimisation of the offers goes hand in hand with GDPR compliance and other best practices.

As a result, even small decisions contribute to the fact that not only the importance of digital formats is growing – but also the trust in this development.

Visits to Events Sites

Internet Security Days
9,235

Other Events
25,588

Total
47,482

eco Awards & Gala
8,883

Internet Policy Forum
1,666

Gaia-X
2,110
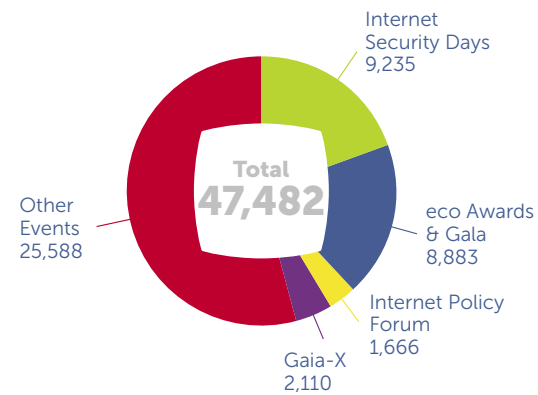
Visits to eco Association Sites 2020

- 297,277 Page Views
- 123,673 Visits
- 145,127 Page Views
- 92,041 Visits
- 442,404 Page Views
- 215,714 Visits

www.eco.de | international.eco.de | Sites in Total
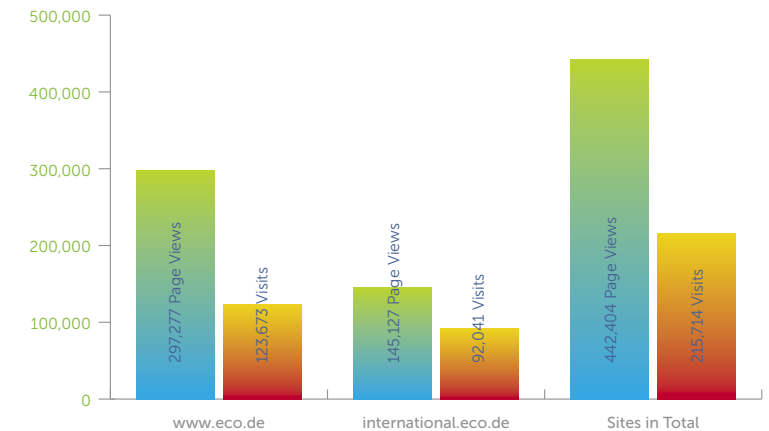
Visits to eco Services & Initiatives 2020 (Selection)

- 119,145 Page Views
- 58,705 Visits
- 85,337 Page Views
- 34,545 Visits
- 57,914 Page Views
- 32,083 Visits
- 26,228 Page Views
- 8,964 Visits
- 22,945 Page Views
- 10,187 Visits

Internet Complaints Office | CSA Websites | www.siwecos.de/ Initiative-S | EuroCloud | Other Websites
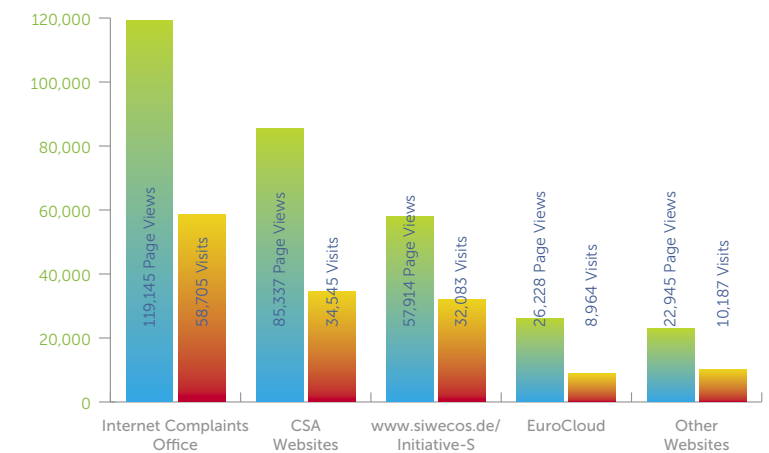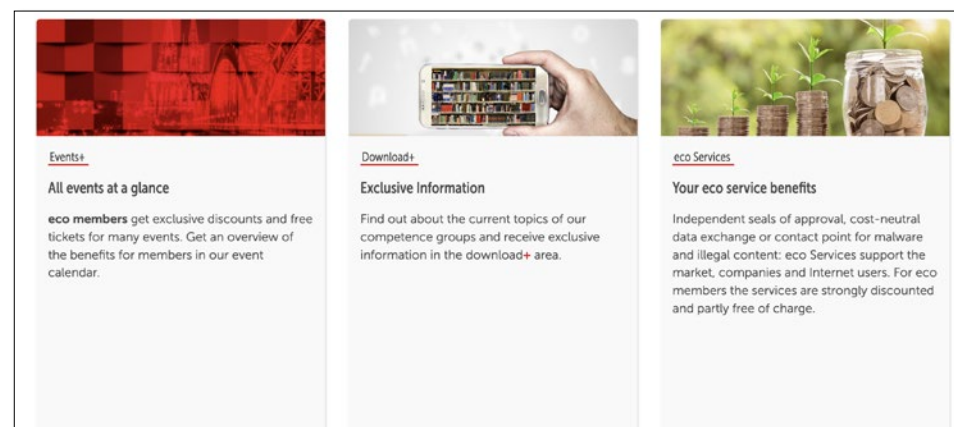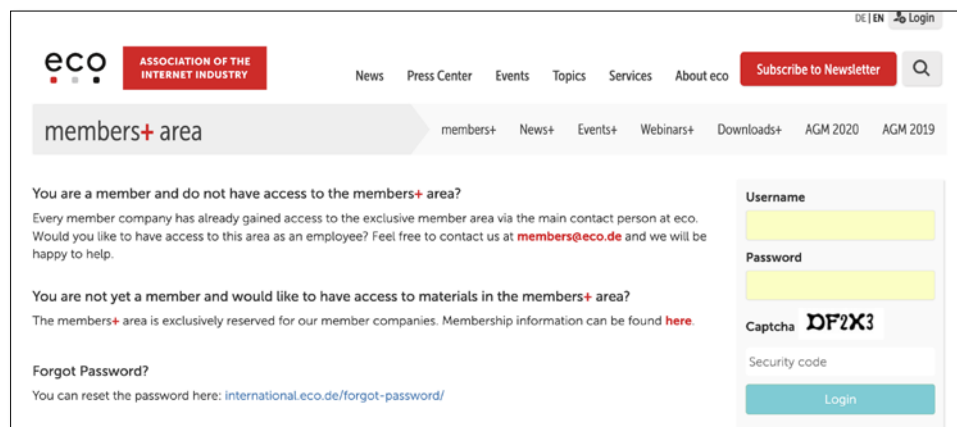
members+ Area – exclusive content for members only

For several years now, all eco members have been granted exclusive and free access to members+, the protected online area on the international.eco.de website. Here, for example, members can find exclusive studies and news, thus providing members with significant added value. The range of exclusive services is constantly being expanded and the attractiveness of eco membership is steadily increasing.

In 2020, all recordings of eco webinars were added to the Webinars+ category. In addition to any Competence Group sessions that members might have missed, the opportunity is also there for members to view all topic recordings at their leisure.

In 2020, over 30 percent of eco members were already using the members+ area. The exclusively available content that members downloaded there included, in particular, the study "The Internet Industry in Germany 2020-2025". In addition, further studies, guidelines and white papers, as well as all information on the eco Annual General Meeting and the eco annual reports of the past years, were available for download.

In the protected news section, logged-in members benefited from statements, exclusive information and offers. In the events section of the members+ area, they received exclusive discounts and free tickets for events.

But continuing education was also not left out of the equation: Recordings of the eco Academy webinars can be viewed again in the members+ area. A GDPR course is also available as one of the highlights. The online course provides an overview of the General Data Protection Regulation, and is intended to outline the changes in data protection law so that eco members can identify any need for action for their companies.

Are you an eco member, but do not yet have access to the members+ area? Then contact us at members@eco.de and we will be happy to help you.

6.5 eco Media

eco Newsletter: News from politics and the Internet industry

Each and every week, the "eco weekly" news-letter enjoys increased popularity – as evidenced by the growing number of subscribers and users. The free-of-charge weekly newsletter provides information on news, trends and services from the eco Association, guidelines and surveys on driving topics in the Internet industry, and infor-mation on top industry events. eco members have the optional Newsletter+ extension at their disposal, which allows them to receive current membership benefits directly in their email inbox.

In addition, the "eco politik digital" newsletter provides important insights every two weeks into eco's political involvement in Berlin. The English-language "eco European" newsletter provides you with free email updates over the current trends in Brussels.

Social media: highly topical and compact

The association's flickr account contains more than 53,000 photos that have already been viewed almost seven million times. On Twitter, Facebook, LinkedIn and XING, eco provides a wide range of information in compact form. More information on this can be found in Chapter 6.6.

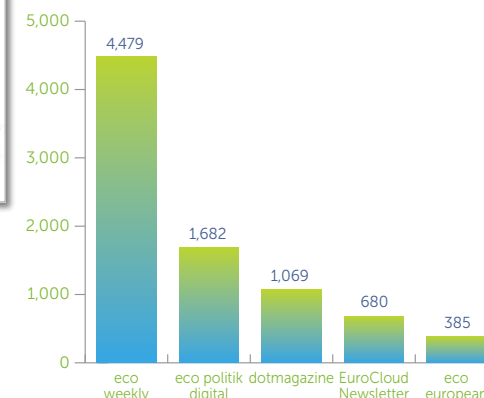## Joining the dots in the Internet industry

First published in 2017, dotmagazine provides information about the whole spectrum of the Internet industry: With monthly focus topics, the online magazine impressively documents the experience and expert knowledge of the association, its members and partners. In terms of content, the spectrum ranges from infra-structure to the countless applications and business cases that make the Internet possible in the first place. In addition, the newsletter dotmagazine is published twice a month in English and is aimed at interested parties from all over the world. More about this can be found in Chapter 7, eco International.

YouTube: Diversity in the moving image

eco's YouTube channel vividly reflects the diversity of the association's activities: From event documentation to expert interviews and specialist briefings, the videos are both informative and entertaining. In 2020, for example, viewers gained first-hand insights into the online eco://awards ceremony. The eco netTALKS, with eminent figures from politics and business, are also viewable, as are the con-gratulatory messages on 25 Years of eco – with a particular highlight here being the 25 Years eco Anniversary Party. Also very popular are the interesting "dotmagazine meets ..."

eco Newsletter Subscribers (as of December 2020)

- eco weekly: 4,479
- eco politik digital: 1,682
- dotmagazine: 1,069
- EuroCloud Newsletter: 680
- eco european: 385

interviews, which offer in-depth insights into the Internet industry. In the series "Ladies in Tech", inspiring female specialists and managers in the Internet industry have their say.
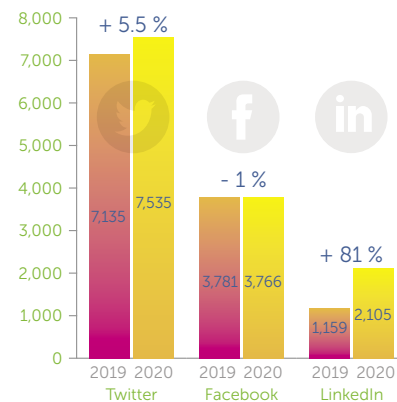
Further information is available at:

✉ international.eco.de/newsletter

⬤ www.flickr.com/ecoev

▶ www.youtube.com/ecoAssociation

51

Followers trend

6.6 Social Media

In 2020, an important goal of the eco Association was to further expand the positive strategic reorientation of its social media channels from 2019 and to once again further boost their performance. As had already become clear in the previous year, the greatest potential for extending our content formats for the eco Association communication stems from Twitter and, in particular, from the LinkedIn platform. This contributed to the strategic decision to apply a stronger social media communication focus on these two channels as we move into the future. Further optimisation included: Positioning people more visually and communicatively on the centre-stage; using facts from both eco's and external studies on socially and politically relevant topics; and broadcasting more moving image formats, such as short explanatory videos or personal statements, via social media.

Strong results on Twitter and LinkedIn

The number of followers grew positively on LinkedIn and Twitter, while on Facebook the numbers experienced a slight downwards rate of -1 per cent. We recorded the strongest follower growth on LinkedIn, amounting to a growth of 81 percent compared to the previous year. The reach per post also increased significantly in comparison to 2019: by 41 per cent on Twitter and by as much as 70 per cent on LinkedIn. Activities on Facebook declined, affirming the decision to accord top priority to the LinkedIn and Twitter social media channels for association communication.

25 Years of eco – 25 Years of Internet with Responsibility on social media

At the heart of communication on our social media channels was the anniversary campaign "25 Years of eco – 25 Years of Internet with Responsibility": for example, in the form of a moving image series in which political actors, top decision-makers in the Internet industry, leading eco figures and eco employees had their say and filled our motto "Internet with Responsibility" with life. A further highlight was the use of our social media wall, which succeeded in accumulating not only eco's own postings, but also a multitude of congratulatory messages from external social media users on the occasion of the digital birthday party in June 2020. Over the entire campaign period, we also broadcast selected milestones from the history of the Internet and 25 years of eco.

Other topics which proved popular among the eco community included content teaser formats for our Alliance for the Strengthening of Digital Infrastructures in Germany, for our #LiT
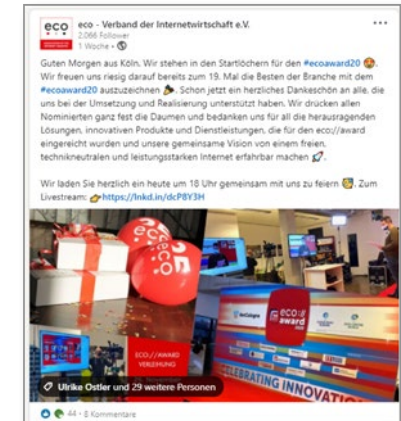
– Ladies in Tech initiative, and for the podcast "Das Ohr am Netz" ("An Ear to the Internet"), the latter having been launched in 2020 with high-ranking guests from politics, business and civil society. The coverage of our highlight events, such as the Internet Policy Anniversary Forum, the Internet Security Days and the eco://awards, also met with lively interest.

For further information see:

@eco_de
@eco_en
@CSA_eco
www.facebook.com/ecoverband
www.xing.com/net/ecoassociation
www.eco.de/linkedin

Lars Steffen
Director
eco International

Judith Ellis
Project Manager & Team Head
eco International Communications

Cáit Kinsella
Project Manager
eco International Communications

Eilín Geraghty
Project Manager
eco International Communications

7. eco International

After the New Year's Reception in Brussels in February, which included the presentation of the English version of the eco study on artificial intelligence, the international association activities were contin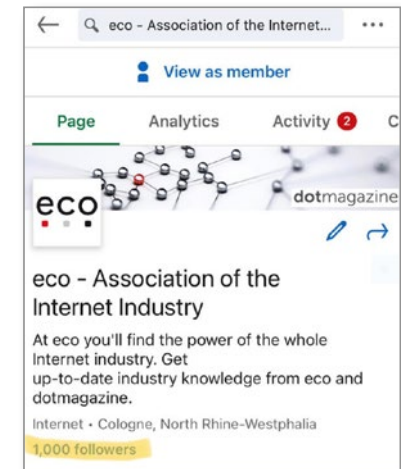ued completely virtually in 2020. As a result, two new English-language services were launched at just the right time: The "Policy & Law" division keeps eco members regularly updated about political and regulatory developments in Brussels and Berlin with the formats "Policy Alert", "Policy Digest" and "View from Brussels". Position papers are now also developed in English and agreed with members via the distribution list. In addition, the newsletter "eco european" now offers an overview of current topics from the association every six weeks in English.

The association's "Policy & Law" division provided information on the focus topics "the Digital Services Act", "EU Cybersecurity Regulation" and "BREXIT" in a series of English-language webinars throughout the year.

A central topic in communication with international association members since early 2020 has been the Gaia-X project. Throughout the year, the association was present at a large number of events – mostly online or virtual – at international level. In this context, the Alliance for the Strengthening of Digital Infrastructures also became increasingly visible in the public sphere in Europe.

International members

In 2020, eco had around 500 member companies based outside Germany, spread across more than 70 countries. The ten countries with the most member companies in the year under review were once again the Russian Federation, the United States, Great Britain, France, Austria, the Netherlands, Bulgaria, Switzerland, Italy and Poland.

Cooperative activities & events

The cooperation between eco and the Internet Infrastructure Coalition (i2Coalition), the U.S. partner association, continued in 2020 in the form of joint online events and regular content exchange on Internet policy issues in Berlin, Brussels and Washington.

In May, members of both associations gave an overview of the performance and resilience of the Internet in the face of the pandemic, under the title of "Maintaining the Internet during Covid-19". The now established "Transatlantic Dialogue" format was also set forth in October. Under the title "Intermediary Liability – Part I: The Internet Industry Speaks with the U.S.", Chair of the eco Board Oliver Süme and members of both associations discussed, together with the National Telecommunications and Information Administration (NTIA), the future

of "Section 230" in the Communications Decency Act and the associated liability issues for providers of online services in the United States.

The cooperation with ICANN, the Internet Corporation for Assigned Names and Numbers, was intensified in 2020. Together, webinars were offered on "DNS in the time of Covid-19", "DNS Security during Covid-19" and the read-out format for ICANN meetings was launched. The ICANN69 Readout in October was the kick-off to offering a compact summary of the conferences as a webinar after each ICANN meeting. ICANN and eco also organised joint panels on questions of the General Data Protection Regulation (GDPR) in the context of Whois at the IGF Germany and NamesCon Online in September. Thomas Rickert, Wolf-Ulrich Knoben and Lars Steffen represented eco members at all virtual ICANN meetings throughout the year.

eco and CENTR, the Council of European National Top-Level Domain Registries, also continued with their existing collaboration and content sharing arrangement in 2020. For example, Thomas Rickert and Lars Steffen from eco took part in the virtual Registrar Day and the CENTR General Assembly.

The existing cooperation between eco and CISPE, the alliance of Cloud Infrastructure Services Providers in Europe, was intensified. Together with other associations of the cloud and data centre industry, the associations interact every two weeks on their positioning and current topics.

After a Memorandum of Understanding was signed between eco and the Internet Society (ISOC) during the International Internet Governance Forum 2019 in Berlin, both organisations expanded their already existing cooperation in 2020. For example, eco joined the Global Encryption Coalition, founded in May. As a member of the eco Board, Klaus Landefeld participated in a series of webinars to discuss the future of encryption. The study "Women in Tech Across the Globe", published by eco in

Geographical Distribution of International Members 2020

total* **499**

- 311
- 61
- 50
- 44
- 37

Legend:
- Russia
- United Kingdom
- North America
- France
- Other countries
*not including Germany

dotmagazine Website Visits Growth Since Inception

dotmagazine Newsletter Subscriptions

Twitter and LinkedIn Followers
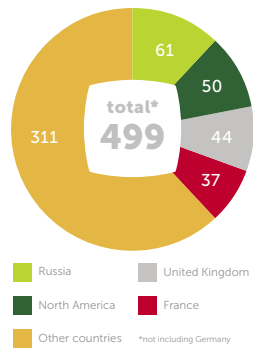
May, was presented and discussed in a webinar together with ISOC and the i2Coalition. Special thanks go to the author of the study, Eilin Geraghty. In July, eco CEO Harald A. Summa was elected as Co-Chair of the Organizational Member Advisory Council of the Internet Society.

In 2020, the eco Data Centre Expert Group, together with the Dutch Datacenter Association, launched the webinar series "Data Centre Trends in Europe" to regularly discuss current topics relevant to the industry. The CSA Summit was once again also a highlight for the international community in the eco event calendar.

In addition, in 2020 eco joined the European Internet Forum, and Thomas Bihlmayer was elected as Treasurer in the European umbrella organisation EuroISPA.

International communications & dotmagazine

dotmagazine

The English-language membership magazine was able to grow again in 2020. In the course of the year, the portfolio grew by more than 100 articles from members of the association, as well as from partners with whom eco cooperates. Readership of the online magazine increased by around 20 per cent. Close to 75,000 visitors from all over the world

accessed the high-quality articles, interviews, podcasts and videos.

dotmagazine is open to all eco members as a platform for their content. The thematic focuses, changing monthly, cover all relevant areas of the value chain of the Internet industry – from the underlying infrastructure to cybersecurity and sustainability, and on to digital business models and online services. To get involved, we invite interested members to contact **dotmagazine@eco.de**.

Newsletters

The bi-weekly newsletter dotmagazine informs subscribers about association activities and presents the latest articles published in
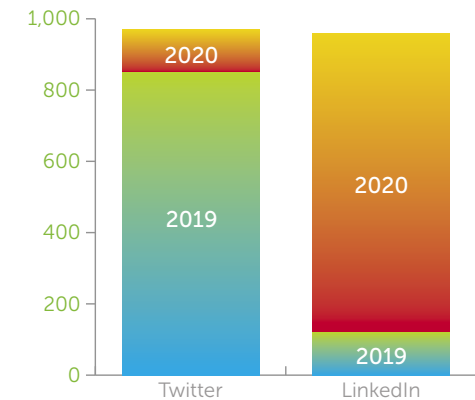
dotmagazine. The number of subscribers increased by 20 per cent during the year.

Together with the "eco european", which was launched in 2020, the two newsletters offer the international audience an overview of current topics, events and news from the eco Association, as well as newly-published English-language eco white papers, studies and guides. The column "The View from the Political Arena" moved from dotmagazine to "eco european" and offers up-to-date information on dates and legislative projects from Berlin, Brussels and Washington.

Social media

The number of Twitter followers of the English-language eco account increased by 15 percent over the course of the year. The English-language LinkedIn profile, which was re-launched in October 2019, was able to attract almost 900 followers again by the end of 2020. An account has been opened on the CircleID.com industry platform to provide regular information on association activities and to increase international reach.

News, studies, reports and other support

The eco International Team also successfully continued its translation and support work for all association areas – including DE-CIX, CSA and EuroCloud – all whilst working from home. During the year, around 140 English-language association news items were published on international.eco.de, an increase of more than twelve percent compared to the previous year.

The publications produced during the year included the annual reports of the eco Association, the eco Complaints Office and DE-CIX, the eco studies "Artificial Intelligence", "The Internet Industry in Germany 2020-2025", "Women in Tech Across the Globe", "Data Centres in Europe, Parts I + II", "eco Digital Marketing Trends", the "DNS over HTTPS Discussion Paper", the summaries of the "Transatlantic Dialogues" and the "CSA Digital Summit 2020", the updated eco portfolio, a large number of reports, position papers, contracts, training documents and updated guidelines.

Further information is available at:
international.eco.de
dotmagazine.online

Executive Board of DE-CIX Group AG

Harald A. Summa
CEO
Chair

Ivo Ivanov
COO
Vice Chair

Sebastian Seifert
CFO

8. eco Services & Initiatives

8.1 DE-CIX

In the remarkable year 2020, DE-CIX experienced growth across all regions and business units. Despite the global Covid pandemic, the company was able to maintain its position as the operator of the worldwide largest carrier and data centre neutral interconnection ecosystem, and was able to provide stable and secure interconnection services. DE-CIX helped to keep economies afloat and people in contact throughout the physical lockdowns.

Globally, the DE-CIX customer base grew by nearly 18 % in 2020, bringing the total figure to over 2,200 connected customers. In total, increase in peak traffic averaged at around 30% across locations, and peak traffic records were broken multiple times around the globe. The geographical reach of DE-CIX services grew in parallel: In addition to announcing new Internet Exchanges in Barcelona, Chicago, Richmond, and Singapore, DE-CIX also implemented new Exchanges with partners in Athens (SEE-CIX) and the Ruhr Region in Germany (Ruhr-CIX) through the DE-CIX as a Service programme. By the end of 2020, the global total of DE-CIX-run Internet Exchanges stood at 27. To top this off, an impressive

32 Exabytes of accumulated data traffic flowed through the DE-CIX Internet Exchanges. In addition, DE-CIX was once again recognised as Best Internet Exchange at the Global Carrier Awards.

In the consolidated annual financial statement for 2020, in comparison to the previous year the global revenues of all company parts grew by 10 % to 43.4 million Euro. Revenues from international activities jumped by 34 % in comparison to 2019 and represented 17.4 % of total revenues.

25 Years DE-CIX — a big "thank you" to all partners and stakeholders

In 2020, DE-CIX celebrated its 25th birthday under the motto of "Without You". With the approach of its 25th birthday, DE-CIX decided not only to celebrate the special role that it has played in the development of the Internet, but above all to highlight the fact that the creation of the world wide web would have never been possible without the entire ecosystem of different stakeholders, including DE-CIX employees and partners. The DE-CIX story, together with Internet milestones, formed the focus of the DE-CIX 25 Years anniversary campaign, "Without You", along with the voices of DE-CIX partners and staff of many years. This resulted in many interesting contributions from DE-CIX partners Interxion, Angola Cables, Axians, Nokia, GasLINE, EdgeconneX, Corebackbone, ITENOS, TeleMaxX, and Capacity Media, who offered a deep insight into the development of

DE-CIX Group AG – Supervisory Board

Felix Höger
Chair of the Supervisory Board
eco Board Member
CEO, Höger Management GmbH

Klaus Landefeld
Vice Chair of the Supervisory Board
Vice Chair of the eco Board

Rudolf van Megen
Member of the Supervisory Board
CEO, S.T.O.L. Verwaltung GmbH

Growth and geographical expansion during pandemic

In the challenging year of 2020, within just a few days in March, the average data traffic at the DE-CIX Internet Exchanges rose between 15% and 30%, depending on the region. A new peak traffic world record was set in Frankfurt at 10.3 Terabits per second (Tbit/s), and New York, Madrid, Mumbai and Dubai also recorded record peak traffic growth. This enormous growth was complemented by increasing geographical growth for DE-CIX in 2020. DE-CIX established four new Exchanges during the year, announcing Barcelona, Chicago, Richmond, and Singapore, with Chicago becoming ready for service in December 2020. A further 11 enabled sites were implemented at existing DE-CIX Internet Exchanges during the year. Two further Exchanges were established as part of the new DE-CIX as a Service programme: "SEE-CIX powered by DE-CIX" in Athens, in partnership with the data centre operator Lamda Hellix (now Interxion); and "Ruhr-CIX powered by DE-CIX" in Germany, in collaboration with the data centres of DOKOM21, TMR and GELSEN-NET, in the cities of Dortmund, Bochum, and Gelsenkirchen respectively. As part of the DE-CIX as a Service programme, DE-CIX delivers the technical set-up needed for an interconnection platform as a fully pre-configured and standardised "DE-CIX in a Box" solution – easy for data centre operators to plug and play.

the Internet over the last 25 years from various perspectives. Central to the campaign was the virtual DE-CIX Anniversary Party on 26 June, which received more than 8,600 unique views from all over the world, while the website withoutyou.de-cix.net was visited over 70,000 times. Thus, in its 25th birthday year, DE-CIX was not only able to enjoy an outstanding celebration, but more importantly was able to raise awareness for the significance of DE-CIX, its partners, and its community.

Looking into the future – supporting the transition to a digital world

Even before the pandemic, it was already clear that user experience declines with increasing distance of digital infrastructure from the users. As digital applications and services become more sophisticated and assume increasingly critical roles within society, the more essential it becomes to improve their performance through secure and resilient digital infrastructure. To achieve this, minimising latency is a must, meaning that digital applications need to get closer to the users. It will not be long before the uppermost limit for latency reduces to 20 milliseconds. As a result, latency is becoming the new currency – also for business success.

Even today, applications like interactive online gaming and live streaming in HD/4K need to be less than 1,200 km from the user. Smart IoT and critical applications like autonomous driving demand much lower latency: in the range of 1-3 milliseconds, or 50-80 km from the user. Gone are the days when centralised data centres or cloud infrastructure on one continent could serve the needs of people and business on another.

DE-CIX is supporting the transition to a digital world of working and living. To achieve this, DE-CIX is using a two-pronged approach: Firstly, it is working towards greater geographical density through the opening of new locations and working with transport partners to bring customers from outlying areas to DE-CIX Exchanges. For example, data centres are being given the opportunity to create their own Internet Exchange managed by DE-CIX, through the DE-CIX as a Service programme. Secondly, DE-CIX is further developing its portfolio of premium interconnection services, with a view to specific market environments and a focus on supporting enterprises to overcome their interconnection challenges as they digitalise their products and services. In this way, DE-CIX is helping to pave the way for the bright future of the digital economy and the digitalisation of companies of all sizes.

DE-CIX Global Total Customers

2,500
2,000
1,500
1,000
500
0

+18%

2019   2020

DE-CIX Global Total 100GE Ports

600
500
400
300
200
100
0

+45%

2019   2020

DE-CIX Global Total Customer Bandwidth (Tbit)

80
70
60
50
40
30
20
10
0

+33%

2019   2020

DE-CIX Frankfurt Peak Traffic (Tbit/s)

12
10
8
6
4
2
0

+28%

2019   2020
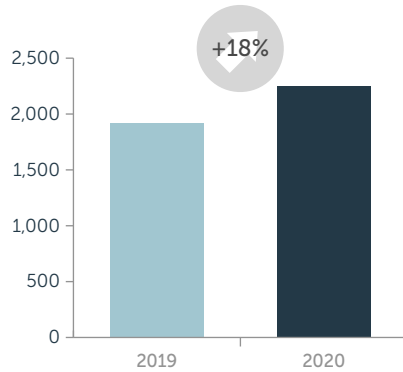
DE-CIX global and regional growth in 2020

DE-CIX enjoyed close to 18% growth in customers globally in 2020, bringing the total figure to over 2,200 customers. Continued growth in excess of 45% in 100GE ports was also in part responsible for the 33% growth in connected customer bandwidth, which reached a massive 73 Terabits during the year.

DE-CIX in its home market in Germany – solid growth and huge demand for more bandwidth

As a result of the pandemic, DE-CIX Frankfurt broke its own record twice in 2020, reaching 9 Tbit/s data throughput in March and crossing the 10 Tbit/s barrier in November, an overall plus of 28% compared to 2019. Customers extended their bandwidth at the DE-CIX flagship Internet Exchange by 26% to close to 52 Tbits connected capacity, with a 33% growth of 100GE ports. On top of this, DE-CIX Frankfurt also celebrated its 1000th customer.

In 2020, the German regional Exchanges also extended their success story. DE-CIX Hamburg increased its customer bandwidth by 127%, and peak traffic rose by almost 150%. DE-CIX Dusseldorf experienced customer growth of close to 65%, while peak traffic at DE-CIX
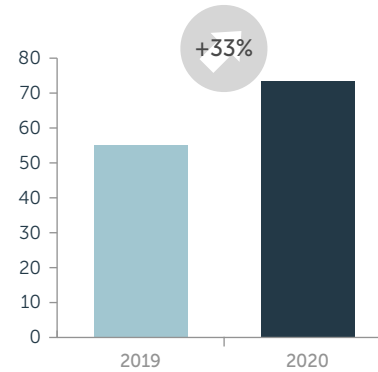
Munich grew by over 105%, with customer bandwidth rising by roughly 30%.

Creating the largest neutral interconnection ecosystem in North America

DE-CIX's importance for the interconnection of networks in North America was confirmed again in 2020. The number of 100GE ports sold in North America grew by 150%, and aggregated connected customer capacity increased by over 70% to nearly 10,000 Gbits. DE-CIX New York, the region's largest neutral Internet Exchange and one of the top five in the U.S., enjoyed growth in customers of 15%. Customers at DE-CIX Dallas, ranking among the top 20 Internet Exchanges in North America, increased by 38%. Peak traffic rose by more than 45% in New York to 844 Gbit/s, and by more than 80% in Dallas, to 210 Gbit/s.
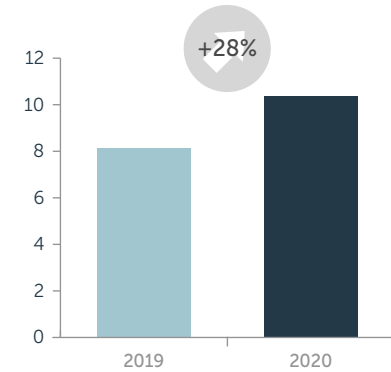
Highlighted during the virtual DE-CIX Interconnection Summit North America in December 2020, the opening of DE-CIX Chicago and the announcement of DE-CIX Richmond represented significant strategic action – a step which doubles DE-CIX's footprint in the North American market, creating the foundation for the largest carrier and data centre neutral interconnection ecosystem in North America.

Solid growth for Southern Europe's Internet Exchanges

In 2020, the four DE-CIX Internet Exchanges in Southern Europe – Lisbon, Madrid, Marseille and Palermo – experienced solid and continuous growth. The connected networks across all locations grew by close to 25% to 385, while the total connected customer bandwidth rose by almost 40% to 4776 Gbits. Upgrades to 100GE ports (+69%) in Madrid accelerated the

DE-CIX Frankfurt Customer Bandwidth (Tbit)

+26%

60	
50	
40	
30	
20	
10	
0	2019 · 2020

DE-CIX North America Total Customer Bandwidth (Gbit)

+73%

10,000	
8,000	
6,000	
4,000	
000	
0	2019 · 2020

DE-CIX New York Customers

+15%

300	
250	
200	
150	
100	
50	
0	2019 · 2020

DE-CIX Southern Europe Total Connected Customers

+25%

400	
350	
300	
250	
200	
150	
100	
50	
0	2019 · 2020
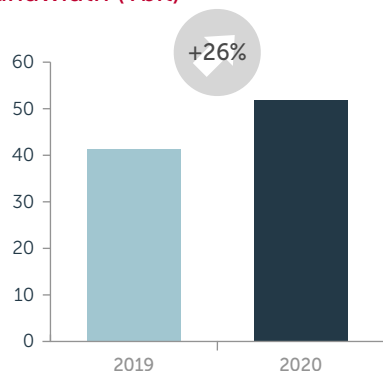
growth in customer bandwidth, which rose 41% to 3465 Gbits, and the number of connected networks grew by 17% to over 200. DE-CIX Marseille's peak traffic grew by almost 90% and the total customer bandwidth by 42%. Within its first year of full operation, the number of connected networks at DE-CIX Lisbon rose by 89%, and the total customer bandwidth by 57%. DE-CIX Palermo also enjoyed considerable growth of 63% in connected networks.

During the first edition of the DE-CIX Virtual Interconnection Summit, customers and partners welcomed DE-CIX Barcelona to the DE-CIX family. The new Internet Exchange will serve local eyeballs and key enterprises in Catalonia and beyond, and is planned to be ready for service in spring 2021.

Moscow and Saint Petersburg offer DE-CIX interconnection services

After the successful start of the partnership in 2019 between DE-CIX and MSK-IX – the leading Internet Exchange operator in Russia – the two locations in Moscow and Saint Petersburg picked up considerable momentum in 2020. From the past year on, DE-CIX customers worldwide are not only able to peer remotely at the two Russian locations; they can now also use the DE-CIX services VirtualPNI and DirectCLOUD.
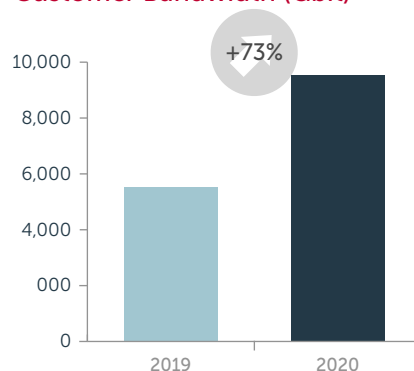
Celebrating 5 years of DE-CIX Istanbul

DE-CIX Istanbul celebrated its fifth anniversary with industry experts and government officials during a virtual summit at the CNN Türkiye studios in late 2020. In five years of operation, DE-CIX Istanbul has grown to be an important interconnection gateway between the Middle East and Europe. In 2020, it experienced growth in customers of 16%, bringing the connected customer capacity to a new all-time high of more than 1000 Gbits (+37%). The regional situation during the pandemic and customers upgrading to more capacity led to an increase in peak traffic at DE-CIX Istanbul of 54%.
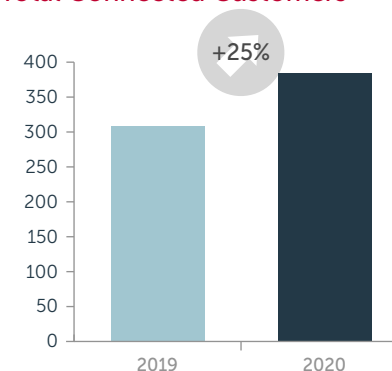
UAE-IX expanding to new locations in the United Arab Emirates

"UAE-IX powered by DE-CIX" in Dubai is the first data centre and carrier neutral Internet Exchange for the Middle East that interconnects global networks, network operators, and content providers in the GCC region. In 2020, due to the global pandemic, leading providers of collaboration tools increased their capacity by up to 400%. UAE-IX experienced a growth in total customer bandwidth of 65%, increasing to 1403 Gbits. The new peak traffic record of 210.45 Gbit/s represents an increase of 73% and results, among other things, from the huge wave of working from home and home schooling. UAE-IX is to be extended to further sites and data centres in the UAE, including Dubai, Abu Dhabi, and Fujairah.

DE-CIX Madrid Customer Bandwidth (Gbit)

+41%

[Bar chart showing 2019: ~2,450 and 2020: ~3,480. Y-axis: 0, 500, 1,000, 1,500, 2,000, 2,500, 3,000, 3,500]
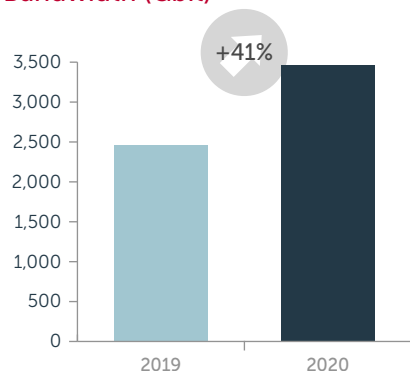
DE-CIX Istanbul Customer Bandwidth (Gbit)

+37%

[Bar chart showing 2019: ~790 and 2020: ~1,070. Y-axis: 0, 200, 400, 600, 800, 1,000, 1,200]
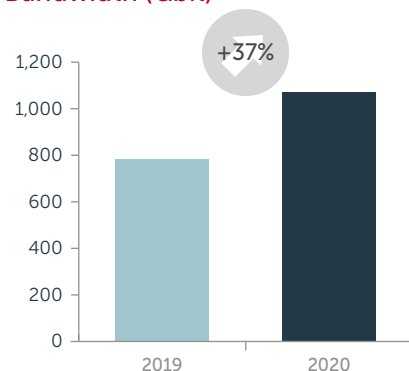
UAE-IX Peak Traffic (Gbit/s)

+73%

[Bar chart showing 2019: ~120 and 2020: ~210. Y-axis: 0, 50, 100, 150, 200, 250]

DE-CIX Mumbai Customer Bandwidth (Gbit)

+75%

[Bar chart showing 2019: ~1,700 and 2020: ~2,960. Y-axis: 0, 500, 1,000, 1,500, 2,000, 2,500, 3,000]
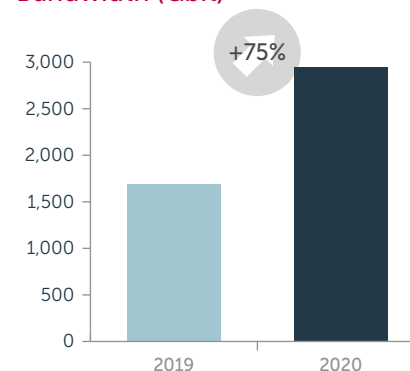
Exciting innovations and expansion for DE-CIX India in 2020

DE-CIX Mumbai, the largest of the four Indian Internet Exchanges, gained the ranking of the second largest Internet Exchange in the Asia Pacific (APAC) region in 2020. DE-CIX Mumbai enjoyed a total customer bandwidth growth of 75%, due to both new customers and upgrades of existing customers, and an increase of 67% in 100GE ports. At the end of 2020, the Internet Exchange counted 280 customers – up 53% from December 2019.

The DirectCLOUD service was launched in Mumbai in 2020, enabling connection to cloud services provided by Microsoft Azure and Google Cloud, Amazon Web Services and Oracle Cloud. Several Points of Presence (PoPs) were added to DE-CIX India, including Sify Technologies and GPX2 in Mumbai, and STT Telemedia's

(Tata Communications) data centres in Chennai and Delhi. DE-CIX India also expanded its DWDM network capacity in all four markets to increase capacity up to 320GE.

Gaining a foothold in new markets – expanding into Southeast Asia

DE-CIX followed a strategic expansion plan into the Southeast Asian region in 2020. Announced in late 2019, DE-CIX and the local Malaysian Internet Exchange provider JBIX (operator of Internet Exchanges in the greater Kuala Lumpur, Johor Bahru and Singapore region) successfully merged in 2020 to form DE-CIX Malaysia and DE-CIX Singapore. With excellent international and terrestrial connectivity to the rest of Southeast Asia and beyond, Malaysia has the potential to complement the major content hub of Singapore by providing regional interconnection for growing local needs. DE-CIX Singapore,

announced in early 2020, will form the centrepiece for DE-CIX in Southeast Asia, driving expansion in the region and building a robust and secure interconnection ecosystem.

Expanding the DE-CIX Partner Program

In 2020, the DE-CIX Partner Program was substantially extended. Not only were the resources doubled within the team, DE-CIX also introduced a programme component for Channel Alliance partners: The onboarding, support and commercial conditions were tailored towards the n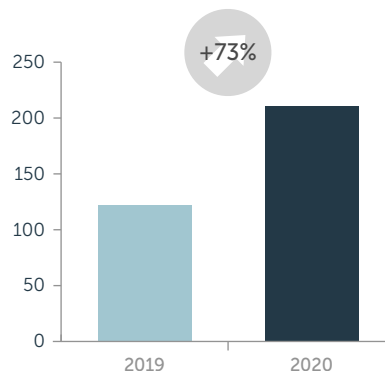eeds of the 'Trusted Advisors' of enterprise customers. At the same time as expanding the footprint of the programme, DE-CIX also relies on the force of the existing and strong reselling partners. These partners were responsible for adding more than 100 sub-customers in 2020, across all DE-CIX

Internet Exchanges worldwide. The top three resellers in 2020 were GlobeNET, RETN and Turk Telecom International.

DE-CIX premium interconnection services – catering for increasing demands

With its research and development expertise and 25 years of experience, DE-CIX is a driver of digitalisation and constantly sets new standards for interconnection. DE-CIX services enable high-performance, secure and reliable interconnection, and continue to grow in number, as well as in customers. DirectCLOUD users increased by 51% in 2020, while the services GlobePEER – with an increase of 65% in users – and GlobePEER Remote – with 47% more users – also enjoyed worldwide success in 2020. The year also brought a customer increase of 57% globally for Virtual PNI.

DE-CIX Mumbai Connected Customers

+53%

300	
250	
200	
150	
100	
50	
0	
2019	2020
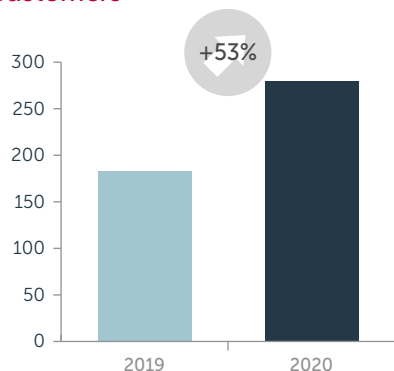
SEECIX *powered by DE CIX*

RUHR CIX *powered by DE CIX*

DE-CIX Top 3 Reseller 2020:

RETN®

Türk Telekom International

globenet

A selection of the innovative services and highlights from the DE-CIX portfolio:

- **DE-CIX as a Service (DaaS)** is a pioneering solution enabling partners to have their own interconnection platform, operated by DE-CIX. Examples include "UAE-IX powered by DE-CIX" in Dubai, "SEECIX powered by DE-CIX" in Athens, and the German Ruhr-CIX.

- In the face of ever-growing DDoS attacks, DE-CIX has developed **Blackholing Advanced**, which revolutionises DDoS mitigation at Internet Exchanges. The patented mechanism gives customers the opportunity of fine-grained filtering of unwanted traffic based on transport protocols and ports.

- DE-CIX's interconnection system allows dedicated **Closed User Groups (CUG)** to be set up as logically separated services to serve enterprise interconnection needs. CUGs can be used either for exchanging data only with selected, trusted partners, or for a dedicated service. The CUG Microsoft Azure Peering Service enables a one-hop connection with the highest possible quality regarding security, bandwidth and latency. Microsoft customers that are connected via this service can benefit from an Internet telemetry service to monitor their traffic.

- Announced in June 2020, DE-CIX is a founding member of the European data and infrastructure project **Gaia-X**, which aims to facilitate data sovereignty, data availability and digital innovation on a European level, in accordance with EU standards. DE-CIX is actively contributing to the design and success of Gaia-X.

Further information on DE-CIX growth in 2020 is available in the Annual Report at: **www.de-cix.net**.

More on the anniversary campaign is available at: **withoutyou.de-cix.net**
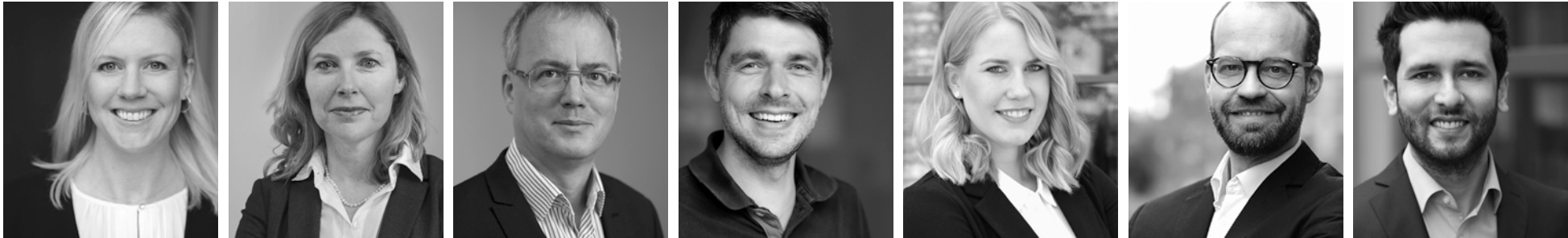
Julia Janssen-Holldiek
Director

Astrid Braken
Legal Counsel

Stephan Hradek
Systems Engineer

Sebastian Kluth
Technical Lead

Maike Marx
Marketing & Customer Relations

Florian Mielke
Manager Business Development

Qadir Rostamzada
Marketing & Business Development

8.2 Certified Senders Alliance

The Certified Senders Alliance (CSA) was founded in 2004 as a central certification body for email senders. The joint project with the German Dialog Marketing Association (DDV) establishes high legal and technical quality standards and certifies companies that meet them. Certification offers numerous advantages: In addition to improving the delivery of emails to recipients, organisations can also counteract poor reputation and dissatisfied recipients, as well as penalties for legal violations.

Growth with an international focus

For the CSA, 2020 was also a challenging year. Nevertheless, as in previous years, the CSA was still generating positive returns. This was not least because, in a time when physical life stood still and communication was almost exclusively digital, meeting quality standards when sending emails was of even greater importance. The CSA received 249 requests for certification. Only one sixth of concrete applications could be concluded with a certification. This ratio shows CSA's continuingly high-quality standards. At the end of 2020, the CSA processed over 132,000 IP addresses from certified senders, a growth of 91 percent compared to the previous year.

Even though international trade fairs and conferences could not take place as usual, various remote and digital meetings and events formed the basis for deepening cooperation with international anti-spam associations and mailbox providers.

The majority of the newly certified companies and partners are based outside of Germany, which shows that the CSA is successfully implementing its internationalisation strategy.

Added value for participants

Protecting your brand in marketing means protecting your domain and IP reputation for email marketing. In the age of information overload and dangerous spoofing attacks, companies need to send emails that are relevant to users, meet common quality standards, and allow clean conclusions to be drawn about the identity of the sender.

The CSA also set itself the goal for 2020 of providing certified senders with the best possible support in protecting their existing and future reputation. To this end, internal tools were further developed and partnerships expanded. With the launch of the CSApi, certified senders have exclusive access to the data of mailbox providers. In this way, the threshold and reputation values applicable in the CSA criteria can be monitored. By automating the data, vulnerabilities can thus be quickly identified and reputations protected.

Dissemination of quality standards

In November 2020, the CSA Blog was launched to share knowledge in the field of email marketing, especially on legal and technical topics. The CSA Blog offers the opportunity to respond to current topics at short notice and to clarify corresponding questions from this area.

The legal and technical CSA criteria have again been adapted to the current requirements of the mailbox providers and the current legal basis in order to reflect the requirements of the market in the best possible way.

This year's CSA Email Summit took place digitally for the first time from August to December in the form of various webinars and was a great success. The demand for the webinars was very high, with the result that more than 600 interested people from all over the world took part and benefited from the knowledge of international experts from well-known companies such as Google, Verizon Media, or 1&1 Mail&Media. The CSA also provided relevant content in several webinars and was able to further establish the CSA Email Summit as an internationally relevant industry event. More details are presented in Chapter 10.3.

Continued high demand for advice dealing with the General Data Protection Regulation (GDPR)

The quality control of the CSA Whitelist is always a top priority for the CSA. This is due to the promise of quality made to mailbox providers, as well as the promise made to senders that they are on the legally safe side.

Even though the manual checks of certified senders are largely automated, individual consultations provided by the eco Complaints Office remain an important pillar for ensuring quality. The GDPR, which came into force in 2018, still created a need for intensive consultation in 2020 due to uncertainties among senders.

The CSA looks back on a successful year in 2020, with a growing international focus, and is continuing to work on legal and technical standards and their implementation in order to improve the quality of commercial emails.

Further information is available at: www.certified-senders.org

8.3 deutsche ict + medienakademie / eco Academy

For twenty years, the deutsche ict + medienakademie has been providing executives with high-quality knowledge from a wide variety of perspectives on the latest high-tech trends. Current developments in the fields of new media and new communications, IT, telecom-munications and the Internet are brought together on a neutral platform on the basis of well-founded studies, reports and experiences of specialist experts. As a company of the eco Group, it is also responsible for parts of the eco Academy, which offers members of the association and other interested parties the optimal mix of neutral professional development at the highest level and expertise in the daily business of the Internet industry.

To do so, the Academy uses various formats, such as expert roundtables, in-house training & coaching and, from 2020, also webinars & e-learning.

In 2020, the deutsche ict + medienakademie celebrated its 20th anniversary. Due to the pandemic, the celebrations have been post-poned to autumn 2021.

Academy & the pandemic

With the start of the first restrictions on public life in March, the Academy also had to react quickly and reorganise the already planned annual programme. Since the Academy deals with digital formats in any case, and always adapts the formats to current requirements, the switch that occurred was quick and smooth.

The Academy has set itself the following goal: Implement as much as is reasonably possible on location – implement everything else as best as possible online.

In this regard, after a short transition phase, the Academy was able to offer all expert roundtables and conferences in either hybrid format or totally online. With this model, guests could be welcomed on location time and again throughout the entire year 2020. At the same time, the option of online participation helped to double the average number of participants.

Expert roundtables, conferences & webinars

In 2020, the Academy held around 30 events, equipping around 1,600 leaders with high-level knowledge and sound and balanced informa-tion. With around 300 high-ranking experts, a highly qualified platform for knowledge exchange was offered, which is unique in this form in Germany. Topics such as biometrics, cloud, digital identity, "Everything as a Ser-vice", infrastructure, Internet of Things (IoT), artificial intelligence (AI) and marketing tech were covered. Many of the events were organ-ised within the framework of the eco Academy and many others were facilitated by the eco Association.

Selected events are highlighted here:

"Future Internet" roadshow

Interconnection is the fundamental principle of these years, motivating and driving research and innovation, new business models and social developments. While the essential technical performance parameters are continuously improving, the corridor in which developments take place seems to be becoming more frag-ile – traditional interconnection approaches are increasingly being questioned, the essential players are changing, and states are intervening.
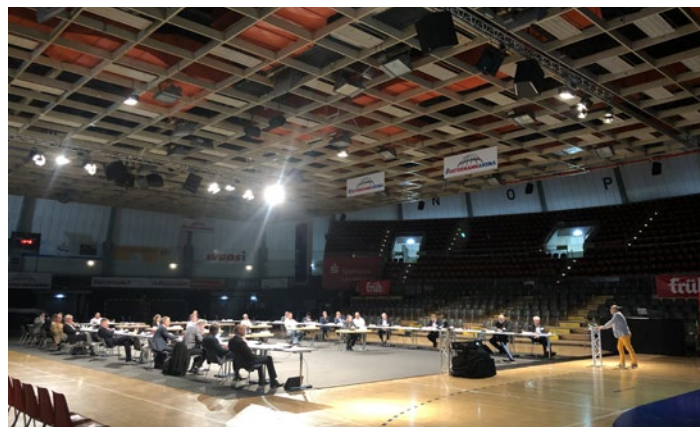
With the support of DE-CIX and 1&1 Versatel, the Academy ran the "Future Internet: Build-Your-Own-Broadband Internet?" roadshow in the second half of 2020. Due to the pandemic, the seven events took place partly on location, in a hybrid format, or – in some cases – online only.

Supported by BREKO, Heise Medien and vatm, high-ranking experts from TU Dortmund, TU Dresden, DE-CIX, 1&1 Versatel, eco and many others deliberated the future of the Internet in well-attended panel discussions.

25th Broadband Forum

For many years, the deutsche ict + medienakademie has dedicated itself to the development of digital infrastructure in Germany within the framework of the Broadband Forum. The 25th Broadband Forum on the topic of "Broadband Resilience: Learnings & Doings

2020" was the first purely online discussion with knowledgeable speakers from very different areas of the industry. Supported by the Hessian State Chancellery – Hessian Minister for Digital Strategy and Development, Digital Hessen, Hessen Trade & Invest, Huawei, PwC and TÜV Rheinland, more than 130 participants were welcomed again this year.

Over the past 20 years, the Broadband Forum has established itself as a meeting place for the industry and offers the opportunity to engage in a direct exchange with experts away from frontal presentations.

Cooperative ventures

As a neutral platform, the German Media Academy cooperates with a wide variety of associations and institutions. Many events were implemented as joint events or with the support of partners, including BREKO, DFK, Digital

Health Germany, FKTG, Fraunhofer, GIMI, IHK Köln, IfKom, RFH – University of Applied Science, City of Cologne, VATM, VAUNET and many more.

Within the framework of the cooperation, the Academy was able to design and implement the following events on behalf of others:

• The "Everything Streaming?" panel at BREKO FIBERWEEK20
• Blockchain2020 – Blockchain Real Lab in the Rhenish Mining District
• A webinar series of the BMWi-funded project "Service-Meister" with the three topics
  • Acceptance of AI
  • Platforms in AI
  • Data strategies in the AI environment

eco Academy corporate training & coaching

The Academy offered various in-house trainings for clients. The leitmotiv was: Client orientation is the top priority. The clients determine the focus and requirements of the in-house training – the Academy develops qualification concepts to precisely fit the requirements. Intensity, content and scope are specifically geared to the previous knowledge and learning objectives of the participants. The focus here is on all topics related to the Internet and communication.

Further information is available at:
www.eco.de/akademie

Markus Schaffrin
Head of Member
Services

Cornelia Schildt
Project Manager IT
Security

Michael Weirich
Security Analyst

Sebastian Fitting
Attorney-at-Law (
Legal Counsel)
Consultant Complaints
Office

8.4 Cybersecurity Services
8.4.1 Smart and Safe on the Internet (SUSII.nrw)

"SUSII – Smart and Secure on the Internet" is an Internet security portal aimed at both the citizens of Cologne and small and medium-sized enterprises (SMEs) in North Rhine-Westphalia (NRW). SUSII is a joint project between botfrei and the eco Complaints Office, and sees itself as a local complement to their existing services. The project is implemented in cooperation with local police authorities.

The security portal is a central contact point for victims of cybercrime with a focus on first aid and prevention. It also summarises

important tips on cybercrime prevention in simple language. In this regard, as a special measure, a catchy "Cologne IT law" was published that summarises the most important IT rules in eleven paragraphs in the local dialect, Kölsch.

After its successful kick-off in cooperation with the Cologne Police Department in the previous year, the initiative was also put online for the city of Leverkusen in early 2017. Autumn saw the first cooperation with an entire German district, that of the Rhine-Erft. The local services are now accessible via the central website **www.susii.nrw**.

SUSII is also supported by the State Criminal Police Office of North Rhine-Westphalia (NRW LKA), and the cooperation on SUSII is also part of the cooperation agreement signed in September 2017 between the LKA, networker NRW and the eco Association. Further cooperation with regions and cities in NRW is planned for the future in order to expand the SUSII project to other cities and regions in NRW.

In the course of its cooperation with the NRW LKA, SUSII actively promotes the prevention campaign of the NRW LKA at **www.mach-dein-passwort-stark.de**.

Further information is available at:
www.susii.nrw

Clarissa Benner

LL.M. Attorney-at-Law

Legal & Compliance

Ivo Ivanov

Attorney-at-Law / Legal Counsel

Head of Legal & Compliance Division

DATA PROTECTION
OFFICER

8.5 eco External Data Protection Officer

The eco External Data Protection Officer service is aimed, in particular, at small and medium-sized member companies, which are often overwhelmed by the complexity of the General Data Protection Regulation (GDPR) and are concerned about high sanctions from the supervisory authorities. The customers of the service are supported by the eco data protection experts, particularly with regard to adapting their business processes to the requirements of the GDPR. In addition, the service offers assistance with the introduction of new processing procedures as well as the training and sensitisation of employees with regard to data protection.

Advantages of an external data protection officer

Companies in the telecommunications and Internet industries are a particular focus of data protection efforts, as data processing in these sectors is associated with great risks. A number of member companies have therefore decided to use the services of the eco External Data Protection Officer service. In this way, they can not only save internal resources and avoid conflicts of interest that may arise from the other roles that an internal data protection officer may hold within the company, but also outsource the existing liability risk.

Data protection continues to develop dynamically

In 2020, the eco data protection experts continued to support customers in adapting their business processes to the provisions of the GDPR and the new German Federal Data Protection Act (BDSG-neu) by conducting data protection audits and workshops and advising them on data protection issues. Data protection law continues to develop dynamically. With the use of new technological possibilities such as artificial intelligence, Big Data, the Internet of Things and blockchain, companies continue to face major data protection challenges. Companies need to follow these developments closely in order to identify and respond to potential risks to their own operations. To this end, the eco External Data Protection Officer service is available to companies in an advisory capacity.

eco External Data Protection Officer service

The eco data protection officers are qualified data protection experts with years of experience in the telecommunications and Internet industries.

In the coming year, eco will continue to support the service's customers with regard to further upcoming new regulations and any questions on the topic of data protection. If member companies have decided to cover the topic of data protection in-house, these members can book workshops and audits via the eco External Data Protection Officer service. The eco data protection experts are also available to advise these companies. In this way, eco helps to make companies even more aware of the relevance and importance of data protection.

The service is implemented in cooperation with Rickert Rechtsanwaltsgesellschaft mbH and dp.institute Data Protection Consulting GmbH.

Further information is available at:
international.eco.de/eco-data-protection-service

Andreas Weiss
Director EuroCloud Deutschland_eco

Peter Koller
Senior Project Manager Cloud Computing

Nils Klute
Project Manager Communication Cloud Services

8.6 EuroCloud Deutschland_eco e. V.

Showing system integrators the way to the cloud, bringing hyperscalers and cloud-native startups into the business and driving the Digital Single Market with Gaia-X – how EuroCloud Deutschland has set themes and gained new members in 2020.

Kick-off for EuroCloud Native

Pooling interests, promoting exchange and creating transparency – that is EuroCloud Native, or ECN for short. Since the kick-off on 29 September, EuroCloud has been bringing providers, hyperscalers and customers into the business through the cloud-native initiative. The founding members include numerous cloud-native providers. Hyperscalers and public cloud providers support the ECN as alliance partners.

Gaia-X: Europe's declaration of independence for the Cloud

As a Day 1 member, EuroCloud Deutschland is driving Gaia-X forward. The architecture of Gaia-X ensures growth for those who share with others; this was demonstrated, for example, at the event organised by Wobcom and the eco Association on 6 October in Wolfsburg, which was moderated by Andreas Weiss, Director at EuroCloud Deutschland. On 28 October, Weiss answered questions from politicians in the Bundestag, the German parliament, on the progress of the initiative. More than 5,000 registrations made the Gaia-X Summit on 18 and 19 November a success: Weiss explained in his keynote what the business community can expect from the initiative.

A platform for system integrators

Do system integrators still have a future in the cloud? As the backbone for digital transformation in SMEs, they themselves are struggling with the change: EuroCloud Deutschland supports the companies on their journey. Bernd Krakau and Felix Höger, both board members at EuroCloud, have been positioning the association as a pilot for the cloud in the system integrator industry since September.

Network, drive and connect

Cloud Security Alliance and EuroCloud have been cooperating since 12 February to harness security synergy potential for a global, international cloud community. Together with member companies, the association has hosted numerous webinars: In March, for example, one webinar reported on data protection mishaps in line with the GDPR, with another reporting in June about the importance of the hybrid cloud for digital transformation.

AUDITOR is also forging ahead. The funding project has submitted the documents for accreditation to the German Accreditation Body (DAkkS). It is expected that the first certifications according to the GDPR-compliant testing scheme will be possible at the end of 2021. At the same time, the foundations for the internationalisation and recognition of the certificate at European level were developed.

The Annual General Meeting took place on 20 November. EuroCloud welcomed 38 new members in 2020. In addition, EuroCloud is sharpening its profile in the target sectors: Since summer 2020, Nils Klute, a long-standing IT trade journalist and expert in content marketing, has been driving the association's communication.

Further information is available at: eurocloud.de

© Matthias Leitzke | Wobcom / eco

Andreas Weiss
Head of Digital Business Models

Hauke Timmermann
Digital Business Models Consultant

8.7 Service-Meister

The Service-Meister project started officially on 11 February. The consortium met for the kick-off meeting in Frankfurt. The team wants to collaborate optimally in order to quickly develop practical AI solutions for SMEs and industry.

Digital tools should support SME service teams in their work, and also enable them to carry out complex repairs, such as those that may be necessary for laser systems from Trumpf. For service knowledge to be scaled in this way, groundwork is necessary. In the Service-Meister research project, companies such as KEB, Atlas Copco, Würth, Krohne and Trumpf are working in tandem with implementation

partners USU, Inovex and Grandcentrix. The tandems are there to digitally support individual service use cases in six "speedboat projects". What is necessary for the work to be a success? "Teamwork, dialogue, discussion – and all of that from the very beginning", says Hauke Timmermann, who is organising the project at eco, the consortium leader. "The consortium also includes numerous associated partners from industry and academia."

Use cases like these illustrate how Service-Meister wants to give SMEs a taste for artificial intelligence (AI). Despite the Covid-19 pandemic, the milestones set for 2020 were achieved. The results of the six speedboat projects: The tandems from industry and

implementation partners digitally solved individual use cases in industrial services. And whether it involves smart advisors, chatbots, augmented reality applications or apps – this is how an AI ecosystem for technical service in the age of Industry 4.0 is being created. "We are on the cutting edge with Service-Meister", says Hauke TImmermann, the project's organiser on behalf of eco, the consortium leader. "AI is becoming more prevalent in SMEs."

For the transfer to SMEs to be successful, there are still a number of cross-cutting issues to be addressed: the connection to Gaia-X, the consideration of industry standards, data spaces that are just developing, ethics, security and data protection. A very important special

mission is the further training of users and AI trainers in the technical service.

For all of these things, Service-Meister can show partial results and a broad active network with more than 50 Associated Partners at the end of the first year. With numerous events, articles and personal discussions, the project was not only able to achieve wide dissemination, but also to take up requirements of SMEs as well as new developments. Those interested in the future ecosystem are excited about the generic services and the platform.

Further information is available at:
www.servicemeister.org

Roland Broch
Senior Project Manager Digital Infrastructures
Project Lead Datacenter Star Audit

8.8 Datacenter Star Audit

The goal of the Datacenter Star Audit is the assessment of the performance of data centre infrastructure on the basis of an objective catalogue of criteria. In 2005, the first ideas for the Datacenter Star Audit were already being mooted. A year later came the market introduction and, since then, numerous data centres have been certified with this indepen-dent assessment instrument.

In addition to the overall redundancy assess-ment of the data centre, the evaluation also includes security aspects from the fields of Organisational Security, Structural Building Security, Supply Security and Technical Securi-ty. The evaluation of the data centre is carried out according to predefined criteria and evalu-ation matrices by at least two independent auditors.

The customers of data centre operators benefit here from increased market transparency. The auditing itself can be used as a basis for assessments by auditors, banks and insurance companies.

In 2020, the data centre of DMI GmbH in Leisnig was successfully recertified once again in the category "Single Site Audit". The provider repeatedly achieved three stars in the catego-ries of Redundancy and Technical Security. In the categories of Organisational Security, Structural Building Security and Supply Security, the data centre even achieved a rat-ing of four stars.

In addition to the certificate awarded in 2020, the first preparatory talks for recertification in 2021 were successfully held.

Further information is available at:
dcaudit.com

Matthias Kurzhals
Coordinator CEBRA and Coordinator
School Development, Berufskolleg Ennepetal

8.9 CEBRA

With the CEBRA initiative, eco imparts up-to-date and immediately applicable business knowledge, and the participants qualify with a Certificate of "Counselor for E-Business Related Assignments".

The accreditation, participant administration, test administration and certification are processed in cooperation with the Vocational College Ennepetal. In addition to the coordination input of Matthias Kurzhals, Head of School Development at the Vocational College Ennepetal, a student assistant supports the administrative processes, as well as the maintenance and further development of the learning platform and learning content.

On the one hand, the initiative is geared in particular towards vocational schools or comparable educational institutions who choose to provide their students/participants with up-to-date e-business training. On the other hand, it is aimed at companies seeking further training for their employees working in e-business-related areas. The action-oriented CEBRA learning modules allow cloud-based learning over the eco-cebra.de Moodle server.

Certified e-business knowledge – practical and flexible

Applying a case study approach, the training offers practical content and places the focus on imparting competence-oriented action strategies for solving real problems encountered in e-business. Having acquired the multilayered learning, the participants demonstrate their progress in regular online tests and in a final examination.

After successfully passing their exam, the participants receive a certificate issued by eco, which certifies their extensive knowledge and skills in the topic of e-business. In 2020, the initiative attracted new schools, particularly in North Rhine-Westphalia. More than 400 participants at vocational colleges and other educational institutions took advantage of the offer and successfully acquired certification.

In 2020, the maintenance of the technical platform and further development of the content was again the focus of activities. Additionally, teachers from a range of schools were trained in the handling of the platform and were supported in their initial experience with courses. A regular exchange with the teachers and contact persons at the schools about processes and content helps in the ongoing development of the e-business learning offering.

Further information is available at:
www.eco–cebra.de

9. Reports on eco Focus Topics

9.1 Digital Business Models

In 2020, eco further expanded its activities in the field of digital business models. In addition to the Service-Meister initiative, the Digital Business Models division also focused on activities in a number of other innovation projects.

Member Workshop

Over the course of the prior Members' Workshop held in 2019, the eco Association members participating had already identified the topic of standardisation and certification of AI as one of the focal topics for 2020/2021. In its approach to this topic, eco pays particular regard to supporting practical approaches that deal with the development of certification procedures and seals of approval for AI systems, and ensures that the outputs are disseminated and transferred via workshops and knowledge transfer events. In March, the Fraunhofer Institute for Intelligent Analysis and Information Systems (IAIS) presented initial approaches for criteria for a subsequent certification.

Certified AI Project

Since 2020, the eco Association has been involved as an Associated Partner in the Certified AI Project under the leadership of Fraunhofer IAIS and with the participation of the German Federal Office for Information Security (BSI), the Universities of Bonn and Cologne, RWTH Aachen University, and the German Institute for Standardisation (DIN). The project aims to develop technical testing principles for trustworthy AI. The title of this competence platform project is KI.NRW (Artificial Intelligence North Rhine-Westphalia) and is funded by the North Rhine-Westphalian federal state.

KI ASSIST Project

eco is also active as an Associated Partner in the KI.ASSIST (AI assistance) Project, funded by the German Federal Ministry of Labour and Social Affairs (BMAS) through the Equalisation Fund (Ausgleichsfond). This project develops assistance services and artificial intelligence in vocational rehabilitation for people with severe disabilities. The project commenced in April 2019 and will be completed in March 2022. eco supports this project through networking and dissemination of content.

SPAICER Project

The SPAICER Project, stemming from the AI Innovation Competition of the German Federal Ministry of Economics and Energy (BWMi) – in which eco is an active Associated Partner – aims to create an ecosystem for scalable, adaptive production systems through AI-based resilience optimisation.

Further information is available at:
international.eco.de/digital-business-models

Hauke Timmermann
Digital Business Models Consultant
Members Services

Emma Wehrwein
Project Manager Digital Business Models

9.1.1 Gaia-X

With Gaia-X, the German federal government, industry and science are striving for a high-performance, competitive, secure and trustworthy data infrastructure for Europe. Since the project's launch at the Digital Summit in October 2019, several hundred experts have been working on the comprehensive European data ecosystem.

eco began to accompany Gaia-X intensively at an early stage with discussions and concept drafts. The association actively contributed its many years of experience and good European contacts to the numerous working groups and committees. eco was represented in the various project areas, including the Architecture Board, and was thus also directly involved in the technical design of Gaia-X.

In addition to representation on the Architecture Board, fundamental measures to shape the Gaia-X Foundation and international outreach were promoted intensively in 2020. This was done via events, podcasts, webinars and far-reaching communication measures such as participation at the Gaia-X Summit, the Digital

Summit 2020 or in the Digital Agenda Committee. eco also joined the Gaia-X AISBL as a Day 1 Member.

Gaia-X Federation Services: eco took on project management

For the purposes of starting a concrete Gaia-X operation, central Gaia-X Federation Services are required, with these being the basis for Gaia-X ecosystems and for enabling the coordinated provisioning of infrastructure services, interconnection services and dataspace services. This calls for the following four core components:

- Identity & Trust: Implementation of secure and federated identity management and the creation of trust mechanisms

- Federated Catalogue: Providing user-friendly access to available providers, nodes and services

- Sovereign Data Exchange: Enabling data transactions in a secure, trustworthy and verifiable way

- Compliance: The introduction of compliance rules and certification and accreditation offers

4. **CREATION of DIGITAL INFRASTRUCTURES and an ECOSYSTEM FOR INNOVATION**

1. **DATA SOVEREIGNTY**

Sovereign Data Exchange

EU Policies & Code of Conduct

Sovereign Infrastructure

3. **INCREASING OF TRANSPARENCY and ATTRACTIVENESS of digital services**

2. **REDUCTION OF DEPENDENCIES**
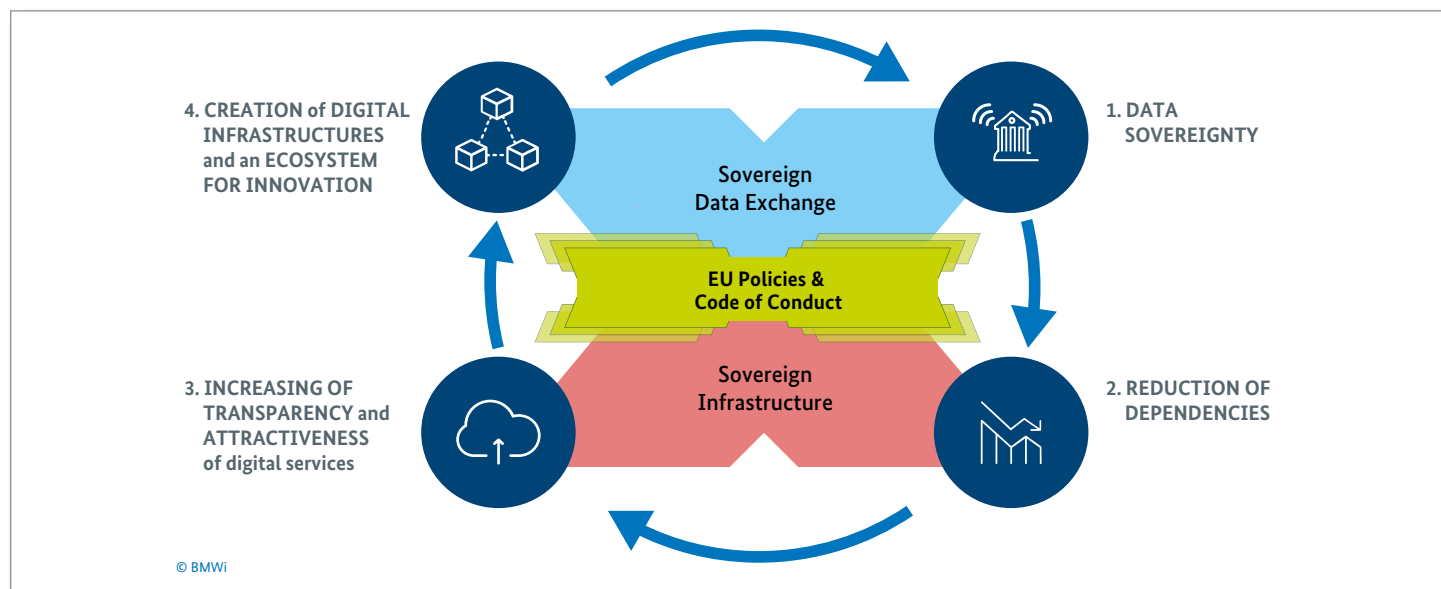
© BMWi

In addition, there is an integration layer that enables access to and interaction with the Federation Services.

In autumn 2020, on behalf of the German Federal Ministry for Economic Affairs and Energy (BMWi), eco took on the coordinating role in the project to develop the first set of Gaia-X Federation Services (GXFS). In addition to project management, this also includes the procedural handling of the project and the associated involvement of the Gaia-X stakeholders and the Gaia-X community in general. The project has a duration of 24 months, with a first release of the Federation Services planned for the end of 2021.

Further information is available at:
international.eco.de/gaiax

Photo: © DIN

9.1.2 Artificial Intelligence

Steering Group Standardisation Roadmap on Artificial Intelligence

Since its foundation in 2019, the eco Association has been a member of the Steering Group of the Standardisation Roadmap on Artificial Intelligence, led by the German Institute for Standardisation (DIN) for the development of standards for AI. With its Standardisation Road-map on AI, Germany was the first country in the world to present a comprehensive analysis of the status of and need for international standards and specifications for the key technology of AI. This not only takes the technical aspects of standards in AI into account but also, in equal measure, its ethical and social aspects.

The roadmap was drawn up in various working groups. In addition to the fundamentals and the particularly important AI application fields of industrial automation, mobility, logistics and medicine, these working groups developed rec-ommendations for action on ethics, quality, certification and IT security as horizontal top-ics. The standards are intended to accelerate the transfer of results from first-rate AI research to the German industry and open up international markets, especially for small and medium-sized enterprises (SMEs) and startups.

Further information is available at:
international.eco.de/artificial-intelligence

Dr. Torsten Schwarz
Leader, Online Marketing Competence Group

Hauke Timmermann
Project Manager Digital Business Models
Member Services

9.1.3 Online Marketing

The German-language study "Bench-marks of Internet Use 2020" analysed the status of online marketing of the 5,000 leading companies in the DACH (Germany, Austria and Switzerland) region. Approximately three out of four companies rely on the manifold possibilities of online marketing. These include search engine marketing, programmatic advertising or ads in social media.

Of the 5,036 companies surveyed in Germany, Austria and Switzerland, those who accord particularly close attention to pro-active marketing are retailers and brand manufacturers. 91 percent of these rely on paid advertising. In some sectors, these figures are even higher – for example, in electronics retailing (100 per cent) or fashion retailing (97 per cent). The health industry (70 per cent) and B2B companies (59 per cent) are more sparing when it comes to marketing expenditure.

Many brands do not protect themselves against abuse attempts

However, many companies still have room for improvement when it comes to security, for example, in protecting their own domain from abuse by third parties. This can be very damaging to their own email marketing and brand reputation. While there has been a marked growth in acceptance of encryption of data transmission via the website and the email server (with 99 percent acceptance of each), 44 per cent of the companies do not impede emails being sent via unauthorised servers with a falsified sender address, even though such prevention can be achieved quite easily with a tool such as SPF (Sender Policy Framework).

Only one in three email senders protect their own sender domain against abuse attempts from cybercriminals by means of DMARC (Domain-based Message Authentication, Reporting and Conformance). Rules on how Internet Service Providers (ISPs) should deal with these suspect mails are defined by only one in twenty companies.

Many have not yet internalised Mobile-First

The study reveals another weak point when it comes to the online presence of many companies: Websites are not yet optimised for use on mobile devices. "Google's indexing is based more and more on the viewing of a website via mobile devices, and many companies will have to reconfigure their websites in order to avoid falling to lower ranks", says Dr. Torsten Schwarz, Leader of the eco Online Marketing Competence Group. In particular, the loading times for many websites take too long on mobile devices. This is largely due to the tracking tools used, whose pixels slow down the site's loading. 42 percent of the companies surveyed attained only a poor PageSpeed Score for their mobile site. Only three per cent of the sites reviewed achieved exemplary scores.

Organic visibility for retailers five times higher than for brands

The study also examined the level of organic visibility of the 5,000+ companies. Here, what is particularly interesting is the comparison between brand manufacturers and retailers. On the one hand, more and more brands are now pursuing direct access to customers in addition to working with traditional retail partners or are joining the stationary trade. Vertical brands are going as far as completely dispensing with retailer distribution and selling directly to end customers. On the other hand, the comparison of the visibility in the organic search results shows that retailers have a large advantage in reaching customers. On average, their visibility is five times greater than that of brand manufacturers. This suggests that retailers will continue to be the frontrunners, especially in the early phases of the purchase decision process via search engines.

Further information is available at:
www.eco.de/online-marketing

Alexander Rabe
eco Managing Director

Dr. Béla Waldhauser
Spokesperson for the Alliance for the
Strengthening of Digital Infrastructures in
Germany

9.2 Digital Infrastructures

9.2.1 Alliance for the Strengthening of Digital Infrastructures in Germany

The Alliance for the Strengthening of Digital Infrastructures – an initiative of leading representatives from the digital infrastructures ecosystem, with a focus on the data centre industry – was founded under the umbrella of eco in 2018. Last year, the Covid pandemic in particular was evidence of the fact that high-performance digital infrastructures are the backbone of digital transformation and the engine for a functioning economy and society. During the first eco netTALK – which was a new online format initiated last year – eco's Managing Director Alexander Rabe and SPD

Federal Chairperson Saskia Esken discussed the importance of digital infrastructures and their positive influence in times of crisis.

In addition, the Alliance for the Strengthening of Digital Infrastructures was able to attract strong voices from the Internet industry to support its online presence – namely Hannes Ametsreiter, CEO of Vodafone Germany, Dr. Jörg Sommer, Director of Digital Foundation for Daimler AG, Hartmut Thomsen, SAP President for Central and Eastern Europe, and Hannes Federrath, President of the German Informatics Society (GI). In their respective statements,

they each emphasised that Germany needs to urgently accelerate the roll-out of digital infrastructures in order to keep pace internationally and remain competitive when it comes to mobile networks, mobility, artificial intelligence and digital sovereignty.

An informative three-minute film published by the Alliance on its website and on social media early in 2020 highlighted how a nationwide digital transformation can be achieved and the resulting advantages for Germany as a business location.

Potential of sustainable digitalisation in focus for political communication
At the same time, digital infrastructures contributed significantly to the reduction of the carbon footprint in 2020 by enabling an increase in teleworking from the home office and in home schooling. As a consequence, sustainable digitalisation became a focal topic for the eco Alliance in 2020. eco's Managing Director Alexander Rabe and other initiators were able to demonstrate the connection between digitalisation and sustainability, for example at the German federal government's Digital Summit, which in 2020 ran under the motto of "More Sustainability by Means of

Digitalisation". The Alliance for the Strengthening of Digital Infrastructures presented an informative film in the summit's cinema which highlighted the enormous potentials of digitalisation for sustainability and climate protection. The German Energy Agency's Congress provided a further platform for joint exchange on digitalisation and sustainability.

Throughout all of 2020, the Alliance publicly illustrated to policymakers the fact that Germany and Europe will only be able to achieve their climate targets with the assistance of high-performance digital infrastructures, as they contribute not only to working from home and therefore reduced road traffic, but also to resource-conserving industrial processes. A Borderstep study commissioned in 2020 by the eco Association for the Alliance for the

Strengthening Digital Infrastructures, with support from the Vodafone Institute, was able to show that operators of digital infrastructures are already on the right track and that European data centres are some of the most energy-efficient worldwide. This was also illustrated by numerous best-practice examples from Germany and Europe, which were discussed in the study.

High-ranking guests from politics and industry at eco events

In the course of presenting the study, the two online formats – eco pol*IT*alk and eco netTALK – allowed for exchange between the eco Alliance and high-ranking national and international guests from politics and industry. During a virtual meeting in Berlin, the opportunities and challenges of sustainable digital

transformation were discussed by the eco Alliance alongside other speakers including Manuel Höferlin, Chair of the Committee of the Digital Agenda of the German Bundestag; Marco-Alexander Breit, Head of the Artificial Intelligence Unit of the German Federal Ministry for Economic Affairs and Energy; and Inger Paus, Managing Director of the Vodafone Institute. In an online panel session initiated in Brussels, eco was also pleased to welcome the following: Daniel Mes, Cabinet Member of the Executive Vice President of the EU Commission Frans Timmermans, who is responsible for the Green Deal; Dr. Hinrich Thölken, Special Representative for International Digitalisation Policy and Digital Transformation of the German Federal Foreign Office; and Marcel Dickow, Head of Digitalisation and Environmental Protection at the German Environment Agency.

At the beginning of Germany's EU Council Presidency, the eco Alliance also drew up a list of demands, including the overhaul of the Energy Taxation Directive, the systematic use of the waste heat generated by data centres, and greater promotion of technological innovations for new and existing data centres.

At the German national level, the Alliance advocated for the abolition of the Renewable Energy Act (EEG) levy for operators of digital infrastructures. In a guest contribution to the "Tagesspiegel Background" and in other online communication to policymakers, Spokesperson Dr. Béla Waldhauser further called for the implementation of faster approval and planning processes for data centres in order to strengthen the future viability of Germany as a digital location.

In addition, the Alliance for the Strengthening of Digital Infrastructures addressed the persisting shortage of skilled workers in data centres. In a guest contribution to the Audimax MINT-Guide, Spokesperson Dr. Béla Waldhauser communicated the circumstances directly to higher education students, aiming straight for the target group. Since women are particularly underrepresented in the IT industry, Waldhauser called on female students in particular to apply a greater focus on STEM professions in general, but especially on work in data centres.

Further information is available at:
digitale–infrastrukturen.net/en

Roland Broch
Senior Project Manager Digital Infrastructures
Overall Coordination of the Data Centre Expert Group

Dr. Béla Waldhauser
Leader, eco Data Centre Infrastructure Competence
Group

Marc Wilkens
Leader, eco Data Centre Efficiency Competence Group

9.2.2 Data Centre Expert Group

In 2020, experts from the Data Centre Expert Group were once again active in various Competence Group meetings, workshops and panel discussions. Due to the Covid-19 pandemic, which was already emerging early on in the year, almost all of the meetups took place in the virtual space in the form of webinars and online meetings.

At the digital infrastructure conference "Digital Infrastructure Investment" in Frankfurt on 4 March, CG Leader Dr. Béla Waldhauser was able to represent the Competence Group and share his expertise with participants during the roundtable discussion on "Requirements for Investments".

The importance of digital infrastructures during the pandemic

What challenges has the Covid-19 pandemic posed for our digital infrastructure? This was one of the many questions Dr. Béla Waldhauser was able to answer for participants of the IT DATA Summit, in a discussion with Dr. Thomas King from DE-CIX on the morning of 31 March.

Later on the same day, CG Leader Dr. Béla Waldhauser participated in a joint meeting with the Security Competence Group on the topic of "Digital Sovereignty" and provided valuable insights into the role data centres play as the key to digital sovereignty.

On 28 May, participants of the virtual eco industry talk "Impact of the Corona Crisis – Part 1" were presented with the results of the eco study "The Internet Industry in Germany 2020-2025". Together with Stephan Hohmann from NetCologne, Lars Riegel from Arthur D. Little, and eco Member of the Board Prof. Norbert Pohlmann, CG Leader Dr. Béla Waldhauser commented on the growth prospects forecast in the study for the Infrastructure, Colocation & Housing sector.

In another edition of the IT DATA Summit on 16 and 17 June, various Competence Group representatives were able to actively participate in several online discussion panels with moderator Martin Puscher. For instance, in the online discussion on "Shock or Opportunity: What Corona Does to Companies", Gerd J. Simon from DE-CIX, Joachim Astel from noris network AG, and Jens

Weller from toplink GmbH discussed the effects on infrastructure caused by the first wave of the pandemic. Dr. Béla Waldhauser contributed an update on the Covid impact from the first half of the year, looked at from the perspective of infrastructure operations. In the online talk on "Last in Line or Champion? How Germany Will Go Digital", Carsten Kestermann from AWS provided answers to the moderator's questions.

"Covid has shown us just how important the Internet, broadband access and data retention are." This was the motto of an online discussion on 16 October to which digital infrastructure operators were invited by the Competence Group Leader Dr. Béla Waldhauser. In addition to Andreas Sturm from DE-CIX, the Competence Group also welcomed Wolfram Rinner from Gas-LINE GmbH and Tilo Heckmann from Telefonica Deutschland as further experts.

On 22 October, the Competence Group hosted a joint webinar with the Dutch Data Center Association (DDA) on "Data Centre Trends in Europe – Residual Heat & Sustainability". The discussion, which was conducted in English, included Competence Group Leader Dr. Béla Waldhauser, Erik Barentsen from DDA, Arjan Westerhoff from Equinix, and Jaime Comella from Cloud&Heat Technologies.

Reliable infrastructure operation between the first and second wave

"5G and Network Convergence – Enablers for the Digital Infrastructures of the Future." This was the title of a discussion panel on 27 October, during which CG Leader Dr. Béla Waldhauser, Sebastian Glatz from ZVEI e. V., and Uwe Hanelt from Corning Optical Communications discussed the importance of digital infrastructures in Germany for international competitiveness and continuing technological innovation.

At the eco Awards 2020 on 26 November, three companies were once again awarded the coveted prize in the Data Centre Infrastructure category. CG Leader Dr. Béla Waldhauser presented the awards. This time, SpaceNet AG, represented by its founder Sebastian von Bomhard, was honoured for its innovative solutions. Other awards went to the companies Infinera and Green Mountain Data Center.

Together with the Deutsche Unternehmensinitiative Energieeffizienz e.V. (DENEFF, the German Energy Efficiency Initiative), the Competence Group invited participants to the virtual 3rd Expert Roundtable discussion on "Energy Efficiency in Data Centres" on 11 December. The event was divided into three topical sections concerning energy-efficiency best practices for

data centre operators. In addition to Competence Group Leader Dr. Béla Waldhauser, eleven further experts from the industry and politics participated in the discussion.

Further formats in which Dr. Béla Waldhauser participated were carried out in his capacity as Spokesperson for the eco Alliance for the Strengthening of Digital Infrastructures (see Chapter 9.2.1).

Further information is available at:
international.eco.de/datacenter

Lorenz Grehlich
Leader, Networks Competence Group

Roland Broch
Senior Project Manager Digital Infrastructures
eco Contact for Networks

9.2.3 Networks Competence Group

In the pandemic year 2020, the Networks Competence Group also successfully transitioned from face-to-face meetings to online formats.

Competence Group Leader Lorenz Grehlich hosted a virtual CG Meeting on 3 July. After engaging in an exchange on best practices for the current Covid situation from a technological standpoint, Grehlich then discussed the developments in network technology of the post-Covid future.

How can network hubs be taken into operation in just a few minutes with SDN technology? This was one of the many questions Christian Dieckhoff from Wobcom GmbH answered for

participating experts from the ISP and carrier field in his talk on "Deep Network Automation". Based on an already implemented project, Dieckhoff demonstrated clearly how such an implementation can succeed and what the pitfalls are that need to be considered.

"The Network Feeds Computing" – this was the thesis of a presentation by Volker Meschonat, NVIDIA, in which he addressed new opportunities and flexibility in the field of network design. Meschonat's talk included a clear explanation of how an exponential increase in network bandwidth can prevent exponential data growth.

5G and fixed networks as driving forces of the post-Covid era

What does the "Future of Production" look like? This was the key question posed by viewers of the joint meeting of the IoT and Networks Competence Groups on 19 September. The joint event was broadcast as a live stream from the Huawei OpenLab in Munich.

Competence Group Leader Lorenz Grehlich illustrated why the interplay of 5G and fixed networks is essential for Industry 4.0 to finally gain momentum, using practical examples from the greater Munich area. His talk was complemented by presentations from Dr. Fred Jopp from USU Software AG, and Dr. Cesim Demir from Huawei Technologies.

In addition, the Network Competence Group's topics were taken up in events hosted by the eco Academy. There were, for example, numerous editions of the Academy roundtable discussion on "Future Internet – Build Your Own Broadband Internet" between July and November. On 22 September, the eco Academy hosted the roundtable discussion on "City Carrier & Regional Networks".

Demands from the field of network operations were also discussed in dialogue with policy-makers at both German state and federal levels within the framework of the eco initiative Alliance for the Strengthening of Digital Infrastructures in Germany (see also: Chapter 9.2.1).

Further information is available at:
international.eco.de/networks

Thomas Rickert, Attorney-at-Law
Director Names & Numbers
Leader, Names & Numbers Forum

Lars Steffen
Director eco International

Wolf-Ulrich Knoben
DE-CIX Advisor, ISPCP Chair

9.3 Names & Numbers

The eco Names & Numbers Forum is one of the world's largest interest groups for the domain industry. The more than 160 member companies include registries, registrars, back-end providers, consultants and experts from the secondary market, covering the entire spectrum of the industry.

As a long-standing member of the ICANN community, Thomas Rickert represents the interests of eco members in the GNSO and was significantly involved in the IANA Stewardship Transition. He currently represents the Internet Service Providers and Connectivity Providers Constituency (ISPCP) in the EPDP 2 process. As Chair of the ISPCP, Wolf-Ulrich Knoben also

represented the interests of eco members in the Constituency. The eco Names & Numbers Forum works with a broad network of partners.

In 2020, the work of the eco Names & Numbers Forum continued to be dominated by the second phase of the "Expedited Policy Development Process (EPDP) on the Temporary Specification for gTLD Registration Data" for the implementation of the General Data Protection Regulation (GDPR) for the Whois of domain names. Other central topics were the discussions about the protocol "DNS over HTTPS", dealing with DNS abuse and illegal content on the Internet, as well as the preparations for the next round of new top-level domains.

67th ICANN Meeting

The domain industry was caught off-guard by the global protection mechanisms relating to Covid-19. The ICANN meeting planned for 7-12 March in Cancún was reorganised at very short notice into the first online-only meeting in ICANN's history. Data protection in the context of Whois, the development of a Unified Access Model for Whois data, the preparation of the next application round for new top-level domains, Universal Acceptance and the increasing attacks on the DNS infrastructure were just some of the topics on the wide-ranging agenda. Before the meeting, Thomas Rickert commented on the state of work in the EPDP 2 working group with the article "The Bumpy Road to Cancún".

Webinars

On 2 April, the member companies InterNetX and Sedo presented the first edition of the newly launched "Global Domain Report" worldwide in a webinar at eco. In cooperation with ICANN and under the title of "DNS Security and Challenges during Covid-19", on 30 April, the impact of the lockdowns on the Domain Name System was analysed. Together with eco's US partner association, the i2Coalition, under the title of "Maintaining the Internet during Covid-19" on 8 May, member companies Cloudflare, DE-CIX, Tucows/Ting, NTT and OVHcloud reported on and discussed how the global Internet infrastructure was responding to intensive use during the pandemic.

In September, the eco Names & Numbers Forum organised two webinar sessions on the EPDP 2 Final Report for NamesCon Online and

the IGF Germany, with this taking place together with Elena Plexida, Government and IGOs Engagement Senior Director of ICANN, and Cathrin Bauer-Bulst, Head of the Cybercrime Unit DG HOME of the European Commission. For NamesCon Online, the Names & Numbers Forum organised two more online sessions, with members featuring on the panels. The sessions included: "Prevention, Attack and Defence in the World of Domains", alongside CSC Global, Safebrands, mmx.co, Donuts, CentralNic and LEMARIT; and "The Impact of the Corona Crisis on the Internet Industry" with Arthur D. Little, InterNetX, Sedo and United Domains.

68th ICANN Meeting

The ICANN68 Policy Forum was again held purely virtually from 22 to 25 June. One of the central topics of the meeting was the planned sale of the eco member company Public Interest Registry (.org) by the Internet Society (ISOC) to Ethos Capital. In April, eco Chair Oliver Süme, together with Thomas Rickert, wrote an open letter to the ICANN Board on behalf of the association members, calling on them not to be influenced by third party interests and to follow the statutes and defined processes. Several NGOs, associations and governments had tried to influence and prevent the transaction.

DNS over HTTPS

In December 2019, a small group of eco members met in Cologne to develop a joint discussion paper on the sometimes-controversial topic of "DNS over HTTPS". In cooperation with

the Anti-Abuse Competence Group, the first version of the comprehensive paper was published in September 2020. Members Open-Xchange, Cloudflare, Deutsche Telekom and sys4 worked intensively on the paper together with association board members and staff. In December 2020, work had already begun on preparing the translation for a Spanish edition.

The paper was presented in November at the eco webinar "DNS over HTTPS Policy Webinar" by Patrick Ben Koetter, Thomas Rickert and Lars Steffen. We would like to take this opportunity to thank Judith Ellis for her intensive editorial support of the project.

69th ICANN Meeting

eco, DENIC and the City of Hamburg would actually have been the joint hosts for the ICANN69 Annual General Meeting if it had

taken place in Hamburg between 19 and 22 October. Due to the ongoing pandemic, however, this meeting was again held purely virtually. Nevertheless, the host team was given the opportunity to introduce themselves and the city to the ICANN community at a virtual social event. In addition to a virtual city tour and a pub quiz, eco Chair of the Board Oliver Süme, DENIC Chair of the Executive Board Dr. Jörg Schweiger, and .hamburg CEO Dirk Krischenowski discussed the relevance of the DNS for more recently developed applications, such as artificial intelligence.

Thematically, this meeting focused on the final report on phase 2 of the working group on the "Expedited Policy Development Process (EPDP) Team on the Temporary Specification for generic top-level domain (gTLD) Registration Data", which not all participating interest groups were

willing to endorse – as expressed through various minority statements. Thomas Rickert commented on the state of the discussion on CircleID.com with the article "The Whois Wars Go On". The ISPCP formed a sub-working group at the meeting to revise the Constituency Charter. At the ISPCP Outreach Event "Impact of Covid-19 on ISPs, DNS and Connectivity Providers", Lars Steffen presented the results of the eco study "The Internet Industry in Germany 2020-2025". Thomas Rickert moderated the plenary session "DNS Abuse: Consideration of the Issues".

Further activities

Thomas Rickert and Lars Steffen participated in other virtual events throughout the year, such as Registrar Day and CENTR General Assembly in October, EuroDIG in June, and the Internet Governance Forum in November, to serve and represent association members.

The popular Domain stammtisch.nrw for informal exchange in Thomas Rickert's office was unfortunately cancelled this year. However, we are already looking forward to the next opportunity to meet our members again in person.

Further information is available at:
international.eco.de/names-numbers

Henning Lesch, Attorney-at-Law
Head of the Capital Office
Head of Policy, Law & Regulations Division

9.4 Law & Regulations Competence Group

The Law & Regulations Competence Group is a platform for discussion and information for eco member companies. It is where content coordination happens, position papers are prepared, inquiries on legal and regulatory topics are answered, and where eco's general positioning on the relevant Internet and network policy topics and questions is discussed. Through the Competence Group, members are given the opportunity to actively participate in legislation at the German federal and state, as well as the EU level, and thus to participate in the development of legal policy.

In the year under review, the Law and Regulations Competence Group had numerous points of contact with the political and regulatory arena. The meetings of the Competence Group were used to provide an overview on current legal policy issues and legislative projects and to discuss these together with the member companies.

Intervention points arose from the European plans for the Digital Services Act and the Digital Markets Act, which will decisively shape the European Digital Single Market in the coming decades. The focus was also on the much-discussed drafts of the German Federal Ministry for Economic Affairs and Energy (BMWi) and the German Federal Ministry of Transport and Infrastructure (BMVI) to amend the Telecommunications Act (TKG) and transpose EU law. The importance of this legislative project for the telecommunications market cannot be overestimated, as it sets the framework conditions for a period of approximately ten years. The transposition of the EU Directive on copyright by national legislators by 7 June 2021, as well as the discussion drafts put out for consultation by the German Federal Ministry of Justice (BMJV), provided an opportunity for exchange and consultation with member companies. The plans of the BMJV to amend the Network Enforcement Act and to combat hate crime also provided an opportunity for discussion and coordination with members. The European ePrivacy regulation in the field of platform regulation, the amendment of the Film Subsidies Act, and the further implementation and specification of the Interstate Treaty on the Media also presented further topical intervention points for the Competence Group.

With the imminent departure of the United Kingdom from the European Union, a workshop was held for members to learn about the current status and future prospects of Brexit. Representatives of the British Embassy and the Department for Digital, Culture, Media and Sport (DCMS) were on hand to provide members with information and answer practical questions about the impact of Brexit.

Further information is available at:
international.eco.de/policy-law

André Görmer
Leader, E-Mail Competence Group

Patrick Ben Koetter
Leader, E-Mail Competence Group

Michael Weirich
Security Analyst
eco Point of Contact for E-Mail

9.5 E-Mail Competence Group

The E-mail Competence Group is an integral part of the German Internet industry with regard to the development of common standards for sending and receiving emails.

Via the group, technical problems of all kinds are solved informally and unbureaucratically, and agreements on new developments are reached. The E-Mail CG is a closed group, as the handling of email is a sensitive subject; the data is valuable and needs protecting, and in order to find solutions to new challenges, participants have to be able to talk more openly about their systems than would be possible in a public forum. However, participation in the group is possible for all eco ISPs. Furthermore, the group may also extend invitations to further qualified persons to participate in the CG.

The E-Mail CG is led by recognised experts: senders (ESPs) are represented by André Görmer, Senior Manager Deliverability with mapp; while Patrick Ben Koetter, Managing Director of sys4, represents ISPs.

In January, the E-Mail CG met to discuss the practical application and security aspects of AMP (Accelerated Mobile Pages). The German Federal Office for Information Security (BSI) presented its new mailing system, in which experts from the E-Mail CG participated in an advisory capacity and promoted DMARC reports on the part of the large ISPs.

While it was unfortunately necessary to switch to purely virtual meetings over the course of the year, this did not contract the wide spectrum of topics. For example, the incidence of spam during the Covid crisis was examined and different impacts were detected among the providers. While Deutsche Telekom and Netcologne witnessed no significant increase in the incidence of spam from early March onwards, 1&1 – with its web.de, GMX and IONOS brands – experienced a doubling of emails with spam and potentially harmful attachments.

In response to this issue, 1&1 presented its Feedback Loop for ISPs and providers, which is used to process (spam) feedback on an automated basis.

In the second half of the year, the E-Mail CG started to revise and update its published documents, starting with the first of its projects, "Selecting a DNSBL".

The standardisation of abuse reports with a focus on the area of email was discussed in detail by the participants, a topic that is also of significant interest to the Anti-Abuse CG, and which is being jointly promoted by both Competence Groups. The German Federal Office for Information Security (BSI) is also pressing ahead with this discussion. Its goal is to make abuse reports interchangeable between individual companies, so that – in so far as possible – these reports can be processed by automated means.

Further information is available at:
international.eco.de/e-mail

Lucia Falkenberg

eco Chief People Officer

Leader, New Work Competence Group

Michaela Templin

Project Manager

Information Security / New Work

9.6 New Work Competence Group

In 2020, the future of work was already underway and received additional impetus from the Covid pandemic. In the New Work Competence Group, the impact of the pandemic on work processes and structures was omnipresent.

Jointly tackling the shortage of IT specialists

Right at the start of the year, the New Work Competence Group developed seven solid New Year's resolutions to support companies in their struggle for accessing the best talents. These recommendations were aimed at helping the member companies to compete for highly sought-after IT specialists and at supporting them in developing employer branding, in keeping with the times. Especially when it comes to the digital world of work, it is essential to rethink established processes and framework conditions. In concise terms, Lucia Falkenberg, Head of the New Work Competence Group, explains the seven guiding principles for contemporary HR marketing: "In view of the current shortage of IT specialists, companies must actively work on their image as employers in 2020 in order to position themselves on the market."

Webinars

Covid created a situation where, overnight, work and work processes were shifted into the digital sphere. The consequent questions that arose found their answers in the very successful New Work webinar series on topics such as "Remote Work", "Leadership at a Distance", "Digital Learning Concepts", and "Artificial Intelligence in Recruiting". But topics such as "Companies in Transition" and "Mindful Leadership" also attracted significant attention thanks to the expertise of eco speakers and member company specialists.

The start of the transformation of the world of work

At the end of the year, the Competence Group provided new findings from a German-based survey on "Work in the Pandemic Times". In these times, work had become far more digital – almost 75 per cent of German employees felt positive effects, and 41.1 per cent of those in employment were already relying increasingly on digital technologies and tools during the Covid crisis. Not only did technologies get to show their worth, but collaborative working had also experienced a massive transformation and shaped a new kind of corporate culture. For this reason, a particular concern of eco in 2020 was to convey a better understanding of the opportunities and possibilities of the digital world of work with all its facets and to set clear stimuli for virtual collaboration in pandemic times.

Further information is available at:
international.eco.de/new-work

Dr. Bettina Horster
Leader, Internet of Things Competence Group

Thorsten Stuke
eco Expert Mobility

Nils Klute
Project Manager Internet of Things and AI
Member Services

9.7 Internet of Things/Mobility

From 5G to AI, to security in the Internet of Things, to transformation in mobility driven by our connected world: these were a number of the focal topics and issues covered by the Internet of Things Competence Group in 2020.

The IoT Competence Group was also faced with numerous challenges in this year and had to cancel planned on-site events, trade fairs and congresses. Nevertheless, many topics could be addressed in online and hybrid events. To start with one example: the first webinar of the eco Academy was presented by the IoT Competence Group.

Connected mobility: eco at the eMonday Evening

In 2020, the topic of connected mobility was a central aspect that kept eco on the move throughout the year, and which led eco to Munich on 17 February for the eMonday event series. This network meeting brings experts together on a regular basis and promotes the exchange of ideas on Mobility 4.0. The connected world has placed mobility in a mode of constant transformation, given that transport is becoming smart – in every direction. This transformation naturally yields great potential for discussion.

The mobility of the future not only requires cybersecurity, but also updates for warranty and liability law – a topic that Thorsten Stuke, Mobility Expert at the eco Association, spoke about at the eMonday evening in Munich, with this triggering a lively discussion.

Digital twin: Central building block of Industry 4.0

In the industrial field, the digital twin is a growing trend. This is the case because this field is always looking for ways to further optimise processes in its digitalised and automated process structures, and to plan production steps in advance in order to find out whether a plant would be capable of producing a desired product in a desired quality.

How does a digital twin work and what concrete areas of application can it have? These questions were addressed by our speaker Peter Lasch, Head of Division at the Simulator Centre in Essen, at the first webinar of the eco Academy on 28 February.

5G, AI and Covid: How technology serves the healthcare industry

Of all industries, the healthcare sector, in particular, had to face completely new challenges in 2020, and thus plunged into a wave of digitalisation. Diagnosing diseases, calculating substances, detecting emotions and healing people – AI and 5G are creating completely new possibilities in the healthcare industry. In a joint webinar, HYVE and Huawei showed what can already be achieved with new technologies.

Dr. Michael Bartl, Board Member at HYVE AG, presented the opportunities offered by Emotion AI in healthcare and pharmaceuticals and the emerging fields of application.

In China, Huawei is a partner in the fight against the coronavirus. Hospitals are relying, for example, on remote-controlled diagnostic workstations with 5G and AI-supported CT image evaluation for the Covid-19 diagnosis. Dr. Michael Lemke, Senior Technology Principal (ICT) at HUAWEI TECHNOLOGIES Deutschland GmbH, showed how 5G can help the hospital environment in the pandemic and what relevant AI applications in medicine look like.

IoT Business Trends: Multimodal logistics with IoT
Smarter, more sustainable and more social – this is what Logistics 4.0 is becoming. The Internet of Things can save delivery costs, speed up shipments, and track raw materials from the customer back to the producer. Multimodal logistics networks were the focus of the IoT Business Trends on 22 June 2020.

Regardless of whether it's an ISO container, a trailer or a parcel – those who connect these via the IoT and who map data points can manage, optimise and forecast order and transport processes in real time.

Under the lead of Dr. Bettina Horster and Thorsten Stuke, the speakers explored the questions of how IoT is boosting multimodal logistics and minimising supply chain risks, and which best practices can be transferred to other sectors.

Impact of the Covid crisis: Smart Industries & Paid Content
The "Covid Effect" is impacting the Internet industry in different ways. A layer model developed by eco and Arthur D. Little shows how strongly the respective companies from a layer are affected.

In this webinar, several speakers talked about the impact of the Covid crisis and the overall economic significance and development prospects of the Internet industry in light of the study "The Internet Industry in Germany 2020-2025". In this context, the core focus was on the topics of Smart Industries & Paid Content. Among others, the speakers included: Prof. Norbert Pohlmann, Board Member of the eco Association; Lars Riegel, Arthur D. Little; Christian J. Pereira, SVP Operations, Member of the Executive Board at grandcentrix GmbH | A Vodafone Company; and Sven Ursinus, Manager Public Affairs at Huawei Technologies Deutschland GmbH.

The status of IoT security with AV-ATLAS: Only secure is really smart
Whether it's to do with voice assistants or robotic mowers: billions of connected devices worldwide not only mean billions of opportunities for sales with smart products, but also billions of potential gateways for hackers.

The topic of security for IoT devices was also on eco's agenda in 2020. AV-Test and eco entered into a partnership to secure IoT devices and services. To launch the AV-ATLAS IoT platform of eco's member AV-TEST, the partners held a joint webinar on 29 June. In this webinar, they outlined the current status of IoT threats, protective measures for IoT devices and services, and demonstrated what can be achieved by the new IoT monitoring as an extension of AV-ATLAS.
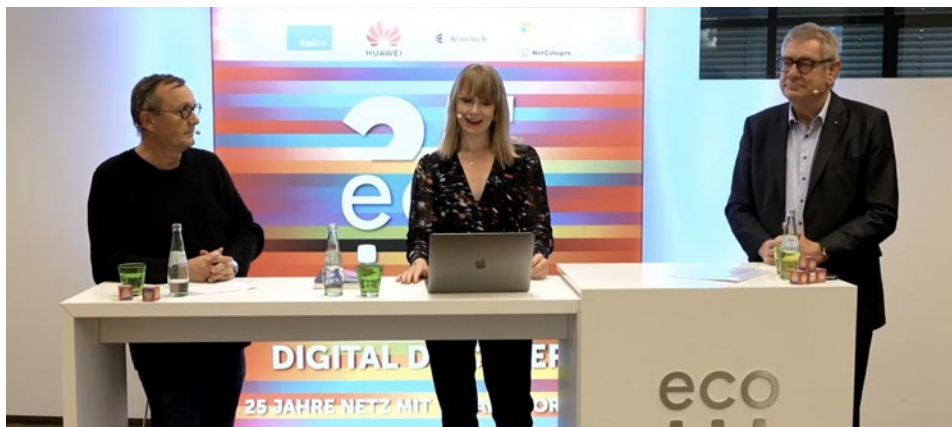
The future of production: Intelligent connectivity, digital alignment

In the Industrial Internet of Things, technologies such as edge computing, cloud, 5G and artificial intelligence are indispensable for overarching management of plants, the automation of supply chains, and the optimisation of manufacturing processes. What do industrial use cases with AI look like? How much wireless connectivity does intelligent manufacturing need? And how do edge and cloud interact in real-time applications?

In the live stream from the Huawei OpenLab near Munich, the Networks and IoT Competence Groups addressed these questions and showed possible concrete applications of these technologies. The discussion round focused in particular on the topic of infrastructure for future production.

eco Web Talk: The Future of Mobility

The future of mobility is intelligent and connected – the road leading to it is complex. Car manufacturers are becoming mobility service providers and, as a product, the vehicle is becoming more complex. Innovative, new concepts are increasingly paving the way and attempting to shape the ecosystem of future-oriented mobility through the connection of the automobile with the Internet.

What does the road ahead look like? What is needed to realise new mobility concepts? Which technologies are gaining acceptance or are already being used? These and other questions were answered in the interactive live stream on 7 October by Karl-Heinz Land, author, speaker and investor, Partner of neu-land.digital consulting, and Member of the eco Association Presidency Committee; and Arndt

G. Kirchhoff, Vice President of the VDA and Chair of the Advisory Board of the KIRCHHOFF Group.

Further information is available at:
international.eco.de/internet-of-things

Photo: ©antispameurope

Oliver Dehning
Leader, Security Competence Group

Cornelia Schildt
Project Manager IT Security

Michaela Templin
Project Manager Cybersecurity
Member Services

9.8 Security

9.8.1 Security Competence Group

In order to increase trust in the Internet, the topic of security is of the utmost importance to eco. In addition to a broad range of initiatives and services, a dedicated Competence Group deals with issues relating to the IT security sector. A further Competence Group, named "Anti-Abuse", serves as a forum for member-internal exchange on current abuse topics. Once a year, for its "IT Security Study", eco asks experts about their most important security topics, the threat situation, and current trends.

Digital sovereignty

The first meeting of the Security CG took place on 31 March, with its focus being on the topic of digital sovereignty. Due to the Covid crisis, the meeting was converted into a four-hour virtual conference, attended by 72 interested parties. The event focused on the questions of how high digital sovereignty is in Germany and Europe, where dependencies exist, and what the Internet industry can do to reduce these dependencies. For this purpose, a survey of 500 IT experts was conducted in advance, which formed the basis for a subsequently published press release. During the meeting, representatives of member companies and other experts spoke on the topic from a legal/regulatory perspective, but also presented specific initiatives which can enable a boost in digital sovereignty in Germany and Europe, including the Alliance for the Strengthening of Digital Infrastructures and GAIA-X. The meeting's topic subsequently formed the basis of content covered by both German specialist media and international press.

Digital identities

In June, the topic of "digital identities" was addressed in a webinar series, in which 109 attendees took part. The first three dates were open to both members and non-members for information and exchange. The fourth part of the series was exclusively reserved for members.

In detail, the following topics were covered:

- 3 June "Authentication beyond PIN and password"
- 10 June "Who owns the machines?"
- 17 June "Who am I on the Internet, who do I want to be?"
- 24 June "Identities made in Germany"

In the context of a Competence Group meeting following on from the presentations, a discussion took place on how the use of digital identities could become even more widespread, with the view shared that the trust required for secure business processes is only manageable on the strength of secure digital identities. The participants came to the conclusion that, while

the technical prerequisites are already very good, acceptance is still lacking and that, in this business field, the dominance of non-European providers is also very pronounced. During the discussion, it was considered how this could be addressed, for example, through the mobile integration of the nPa in authentication services. In addition to the central issue and the facets of digital identities, a representative survey had been conducted along with Civey to gauge the opinion of the German population. The findings of the survey were presented at the meeting and subsequently leveraged for a press release.

Human factor

In November, the work of the CG focused on the topic of human security. Initially, the topic was examined from different angles in three webinars. On 3 November, eco member ESET presented the results of a study on security in the home office, and IT-Seal showed how awareness can be raised among employees working remotely. The follow-up webinar presented acceptance factors for IT security. Based on a study by Christine Utz of the Ruhr University Bochum on the acceptance of the German Covid app, insights were drawn for IT security. In addition, Sebastian Kurowski, Fraunhofer IAO, presented the results of his work on policy compliance. At the final public webinar on 25 November, AXA Insurance presented a practice-based case study on its "PLC management systems" and showed at which point people become active. On 30 November,

Threat Situation 2020

My assessment of the general threat to Internet security is as follows:

unchanged 9 %
shrinking 0 %
growing strongly 42 %
growing 49 %

Protection Against Threats

The German industry is positioned as follows in relation to cybercrime:

well 6 %
insufficiently 66 %
sufficiently 28 %

I assess the protection of my company against cybercrime as follows:

insufficiently 15 %
very well 16 %
sufficiently 32 %
well 37 %

Notable discrepancy between the assessment of the situation in general and the situation in one's own company

the Security CG met to discuss how "human-centred security" can be achieved. Marcus Beyer from eco member Swisscom presented his many years of experience, and this was complemented by research results (HPI/ Ernest Young). This highlighted the immense potential of this topic area.

Security Expert Talks

The eco webinar offer was further extended with the addition of "Security Expert Talks". This format offers eco member companies a platform to present their competencies and, at the same time, profiles eco as a knowledge platform for interested new contacts. The series has been well received by member companies and participants and will be continued in 2021.

The first webinar in this series, which took place on 25 May, focused on the topic of "Safe and Secure in a Crisis" and addressed the impact of the Covid crisis and security standards in the home office. Experts from member companies were involved in the webinar: (State Criminal Police Office (LKA) of North-Rhine Westphalia, @-yet, ESET, Thorsten Urbanski – AV-Test Institute).

On 1 September, the second Security Expert Talk on the topic of IoT Security took place, with 38 participants. The speakers included eco member AREND Prozessautomation GmbH, who presented a highly secure, configurable, industrial IoT gateway, which had been specially developed for production shop floor applications. A second member, Kentix GmbH, explored the challenges

of Smart Building Security for the physical security of business-critical IT infrastructures.

The third Security Expert Talk took place on 8 December, this time on the topic of ISMS. Over the course of the webinar, experts from member companies presented the necessity for a structured approach to information security (Carmao) as well as various standards such as the German Federal Office for Information Security (BSI) IT baseline protection and ISO 27001 (from TÜV Rheinland). In addition, Heinz Krippel presented the ISIS12 approach promoted by networker NRW in North Rhine-Westphalia. The webinar was well received by 34 participants from both member and application companies.

Further information is available at:
international.eco.de/eco-security

Security Incidents 2020

Was there a serious security incident
in your company in the past year?

yes, several
12 %

yes, one
8 %

no
80 %

%
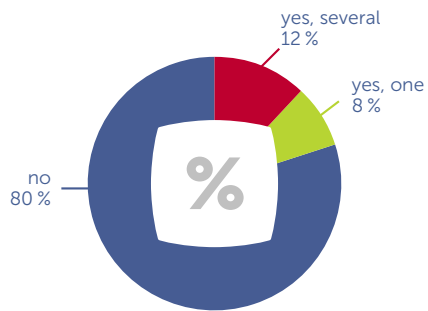
Security Incidents 2020

In which area?

- Ransom-ware: 28
- DDoS: 18
- CEO Fraud: 10
- Industrial Espionage: 8
- Website Hacking: 18
- Data Theft: 10
- Other: 8

Precautions

Has your company established internal processes
or a contingency plan to respond appropriately
in the event of a cybercrime incident?

in planning
23 %

yes
63 %

no
14 %

%

Do you train and sensitise your
employees to cybercrime?

no
10 %

regularly
52 %

in planning
7 %

not regularly
32 %

%

9.8.2 eco IT Security Study

Companies are improving their cyber resilience through contingency plans (+6 percent) and regular employee training (+11 percent)

More serious security incidents in companies than in the previous year

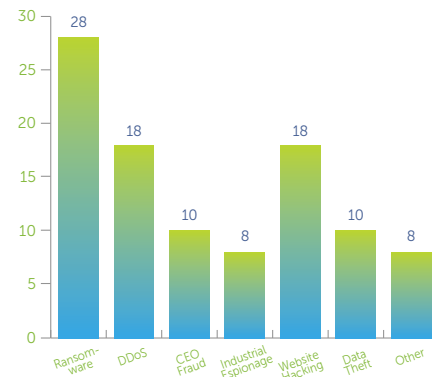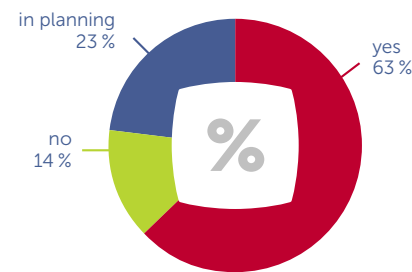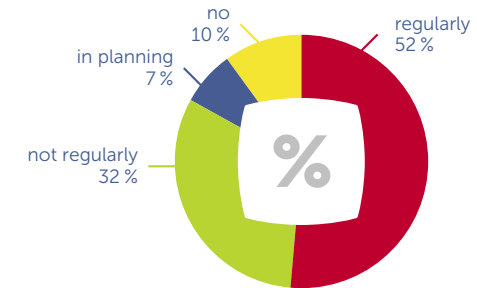More than 90 percent of IT experts in Germany estimate that the general threat to Internet security is growing. 42 percent describe the development as growing strongly. Only one in ten (9 percent) speak of a constant threat. These were the findings of the eco IT Security Survey 2020. eco – Association of the Internet Industry has been publishing this study annually since 2010. In 2020, a survey was undertaken among 294 experts from the IT industry for this purpose.

The experts assessed the threat situation in their own company much more positively than in Germany as a whole. Two thirds (66 percent) of the experts surveyed said that German industry was inadequately positioned in terms of IT security technology. Respondents were more optimistic about their own company, with only 15 percent thinking that their company was insufficiently protected against cybercrime. 32 percent felt that they were sufficiently protected, 37 percent that they were well protected, and 16 percent that they were very well protected.

Threat situation still underestimated

"The discrepancy in the assessment of our own security situation and the security situation in Germany in general shows how difficult even experts find it to assess the threat correctly," says Oliver Dehning, Leader of the Security Competence Group. "A great many small and medium-sized enterprises, in particular, are the in the focus of internationally active cybercrime networks and are not aware of this."

Other figures in the study also suggested an error of judgement in many companies: In 28 percent of the companies, there had been at least one serious security incident in recent years. This was a growth of 2 percent in the number of companies compared to the previous year. Most of these were attacks using ransomware, website hacking or DDoS.

Staff training for more cybersecurity

Nevertheless, companies were improving their precautions against such serious security incidents. Around 63 percent defined an emergency plan to be able to react appropriately in the event of a cybercrime incident. A year earlier, only 57 percent of the companies surveyed had defined a corresponding plan or internal processes. As a second preventative measure, companies were also increasingly focusing on employee training. While 41 percent of those surveyed in 2019 stated that they regularly trained employees on cybercrime and sensitised them to it, the 2020 study found that 52 percent, or an increase of 11 percent, were doing so.

Patrick Ben Koetter
Leader, Anti-Abuse Competence Group

Michael Weirich
Security Analyst
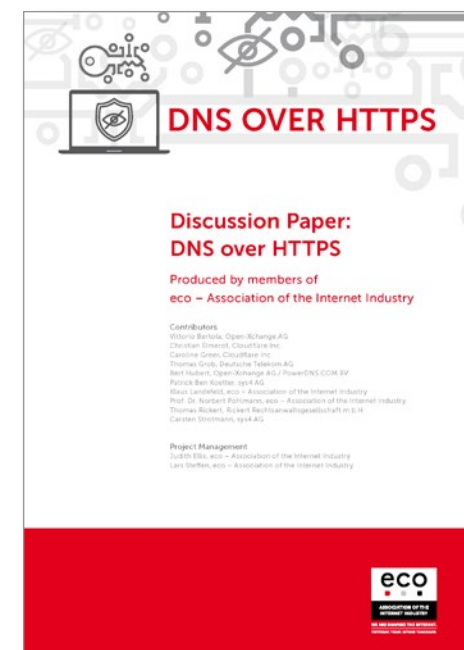
9.8.3 Anti-Abuse Competence Group

The eco Anti-Abuse Competence Group is comprised of representatives from the anti-abuse departments of German web hosting companies and Internet Service Providers, as well as select experts from the anti-abuse field.

The Anti-Abuse CG has a particularly strong culture of confidentiality and this allows a positive and open exchange between the specialist units of companies, many of whom are ordinarily each other's competitors. At the beginning of 2020, the CG comprised of 79 participants from 45 companies and institutions.

Due to the pandemic, Unitymedia in Cologne, as the host, had to cancel the first scheduled meeting of the Anti-Abuse CG, and a concept was drawn up for meeting virtually until further notice. In 2020, the individual anti-abuse teams continued to present their work and the tools they use. Of particular interest here was the ELK Stack and visualisation, which was presented, for example, at the Kibana workshop held by Hornetsecurity, as well as in the presentation on "The 1&1 data-driven anti-abuse system", in which it was clearly explained how 1&1 processes abuse in interaction with ELK/Kibana and other systems.

DNS over HTTPS (DoH) was a hot topic of discussion, given that it offers an alternative to resolving a website request over the Internet. For this reason, a webinar was offered on 3 April on the topic of DNS over HTTPS (DoH) in collaboration with the Leader of the Anti-Abuse CG, Patrick Ben Koetter.

On 16 June, the Anti-Abuse CG met to discuss the latest developments in connection with spam and malware, for which the German Federal Office for Information Security (BSI) provided an update and current case figures. The topic of "Kibana in Abuse" was discussed in depth, and practical examples from the daily anti-abuse business were presented. Arne Allisat, 1&1, presented the IONOS BUS and showed how 1&1 visualises data with Kibana. Axel Hagemeier, Strato, set up a Kibana demonstrator for the Anti-Abuse CG, in which he employed the daily email business as an example to show Kibana in detail as a statistics, visualisation and anti-abuse tool.

Here, the added value became apparent, especially for smaller anti-abuse teams and telecommunication providers. These can benefit directly from the experiences of the big players and profit from their know-how in the context of a direct exchange.

The final set of Anti-Abuse CG meetings of the year revolved around anomaly detection in data and built directly on the CG's preliminary work on data visualisation. Initial contacts were made with the AG KRITIS (KRITIS Working Group), with the Head of the KRITIS AG invited to attend an Anti-Abuse CG meeting. In this context, the aim of the CG is to pursue cooperation options and to open up new sources of information and help for its members – especially the ISPs. The Anti-Abuse CG also talked through eco's Internet Policy Agenda and finalised the CG's inputs to this agenda.

Lucia Falkenberg
eco Chief People Officer
Head of Human Resources Division

Hanna von der Au
Association Communication
PR Manager

9.9 #LiT – Ladies in Tech

As the largest association of the Internet industry in Europe, the promotion of women and diversity is a central issue for eco in order to ensure the future viability of Germany as a digital location. With the #LiT – Ladies in Tech initiative, we give the inspiring female specialists and executives of the Internet industry a profile and a voice in order to inspire even more women to enter the industry and to counteract the shortage of skilled workers in the long term. #LiT – Ladies in Tech was founded in spring 2019 by Oliver Süme, eco Chair of the Board, and Lucia Falkenberg, eco Chief People Officer.

At the heart of the initiative: Our event formats

Our Ladies in Tech network – #LiT for short – offers a platform for exchange: one which is both digital and analogue. It is as colourful and diverse as the Internet industry itself. This means that men are also welcome, because the promotion of the industry's female heroes can only succeed if it takes place in cooperation with male managers and colleagues. Only in this way can we jointly succeed in bringing the best possible combination of different strengths together.

A total of five events took place in 2020 under the umbrella of #LiT Ladies in Tech – always in cooperation with an eco member company or strong partners such as TWENTY2X virtual. While the kick-off event in February could still be held as a live event – one which took place in the Cologne Design Offices – the other events were switched to digital format as a result of the pandemic. The spectrum of topics covered by the digital events and online talks ranged from technical topics such as best practices for collaboration in agile teams (Kerstin Pape, freenet AG) or digital visibility and personal branding on LinkedIn (Britta Behrens, Piwik PRO); to biographical topics such as one's own successful career in the tech industry (Melanie Buck, GoDaddy); to digital-ethical topics such as unconscious bias and AI (including Kenza Ait Si Abbou Lyadini, Telekom) or the startup ecosystem with a focus on female entrepreneurship, with the latter involving renowned speakers such as Brigitte Zypries, Federal Minister of Economic Affairs and Energy (BMWi) and Dr. Julia Freudenberg, CEO Hacker School.

Women continue to be underrepresented in tech: Two studies on Women in Tech

At just under 17 percent, the proportion of women in the IT sector in Germany is still low, even in international comparison. This was a finding highlighted in two eco studies. The first, "Women in Tech", was a German-language study jointly compiled with the Institute for Innovation and Technology (iit) from Berlin and launched on International Women's Day 2020. The German study was published by numerous leading media – among others, Handelsblatt, FAZ, Zeit and Süddeutsche – and ran on five dpa channels. The study is available for public

Stefanie Kemp, Country Lead Oracle Germany

Women in Tech Across the Globe: A Good Practice Guide for Companies

A study by eco – Association of the Internet Industry

Author:
Eilin Geraghty
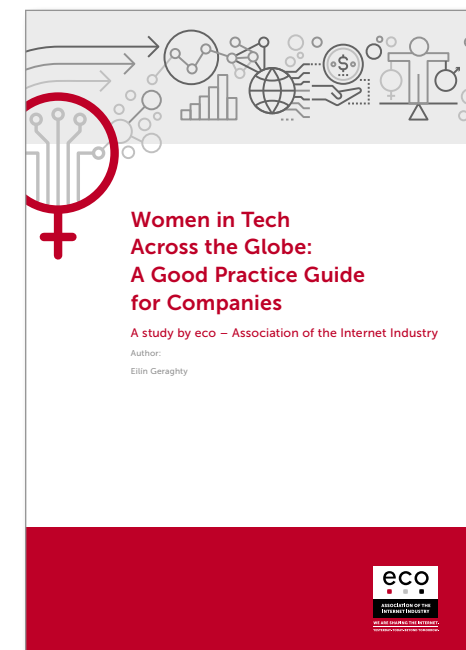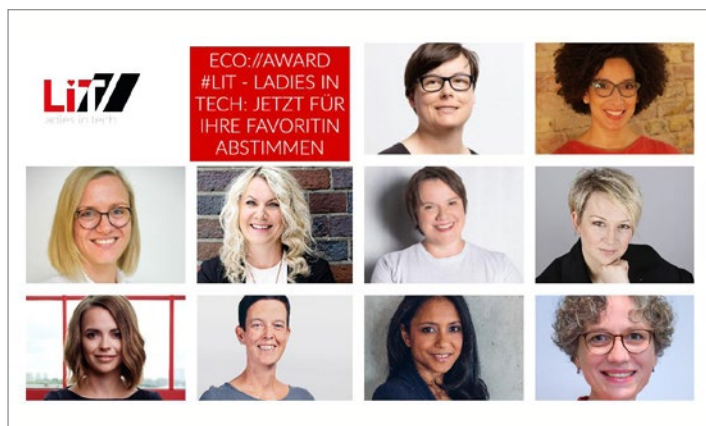
download via an accompanying landing page. The second study, "Women in Tech Across the Globe: A Good Practice Guide for Companies", was released in May 2020 and was presented at an eco online webinar in September, carried out in conjunction with the Internet Society (ISOC) and i2Coalition. This study can be downloaded here. Both studies shed light on the status quo and causes of the gender pay gap in the digital industry, both in Germany and internationally. In addition, the studies provide practical recommendations and case studies for employers and policy-makers, while hand-picked female experts and managers from eco member companies offer their views as testimonials.

Role models are an absolute must: Interview series with role models

In keeping with the motto of, "If she can see it, she can be it", in 2020, we continued our interview series with role models from the digital industry. With this monthly format, we underlined the importance of female role models. In total, twelve German-language interviews with inspiring female professionals and executives in the Internet industry were published in the 2020 series, with English versions of four of these interviews published in eco's online English-language dotmagazine. Among the interview partners were Simone Menne, former CFO of Lufthansa and member of multiple supervisory boards; Yuliia Diachuk, Moberries; Deepa Gautum-Nigge, SAP; as well as a male HeforShe role model, Peter Janze from digital@M.

Hand-picking the best in the industry: #LiT – Ladies in Tech at the eco:// award

Following on from the first #LiT – Ladies in Tech award granted in 2019, as of 2020 this prize has now become a permanent category of the eco://awards. In the open nomination process in 2020, a multitude of female professionals and managers were nominated. In the subsequent selection process by the jurors Stefanie Kemp, Country Leader Oracle Germany, Melanie Buck, Director Change Management GoDaddy, and Lucia Falkenberg, Chief People Officer eco of the eco Association, ten inspiring female professionals and executives from the Internet industry qualified for the final: Kenza Ait Si Abbou Lyadini, Britta Behrens, Dalia Das, Evgeniya Ettinger, Dr. Julia Freudenberg, Agnes Heftberger, Jutta Horstmann, Silvia Hurnaus,

Andrea Martin and Claudia Pohlink. In the public voting process, Agnes Heftberger, Vice President Sales DACH, IBM, received the highest number of votes. At the digital gala in November, Heftberger received the eco://award in the #LiT – Ladies in Tech category.

Further information is available at:
- lit.eco.de
- international.eco.de/women-in-tech
- dotmagazine Diversity Page

Christiane Skiba
Branch Manager Cologne
Head of Marketing & Events

eco Events Participants

1,497

total 6,837

5,340

- Non-Members
- Members

eco Events (Livestream Calls)

netTALK #1
netTALK #2
Startups in the Covid Crisis
The Future of Production
Connect Intelligently: Align Digitally (for CC & Networks eV)
Internet Policy Anniversary Forum 2020
webTalk – Future of Mobility
eco:// award
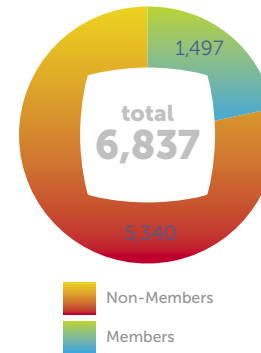
| 580 | 350 | 176 | 873 | 371 | 138 | 418 |

10. eco Events 2020

What a year it was! Despite all the restrictions brought about by Covid, we managed to host a multitude of events (live at the beginning, followed hot-on-the heels by digital formats) and to thus further tap into one of the greatest gifts of our association: animated and open interaction between the brightest of minds. Because in spite of the difficult circumstances and the need to host many events with purely digital formats, a wide range of new tools allowed us to continuously remain in dialogue and also underscored our role as a pioneer of digital solutions.

While most of our events were run as part of regular event series, in 2020 we were able to celebrate a truly unique event: our 25th anniversary. The big live party that we'd planned to celebrate with interactive time travel, numerous stage acts, food trucks and much more fell victim to the virus, but the scores of virtual guests and well-wishers received a surprise package in advance by post, decking them out with the perfect party supplies. Due to their enthusiasm, we will remember our virtual party for a long time to come – and not only due to the exceptional circumstances.

This and many other events can be found on the following pages.

eco Events (Without Livestream Figures)

- Non-Members
- Members

	NYR Cologne	NYR Berlin	NYR Brussels	25 Years Celebration	ISD	Internet Policy Anniversary Forum	net TALK #1	AGM	net TALK #2	eco:// awards
Total	233	120	71	252	121	197	129	59	69	58
Non-Members	202	94	69	170	91	182	100	5	56	37
Members	31	26	2	82	30	15	29	54	13	21
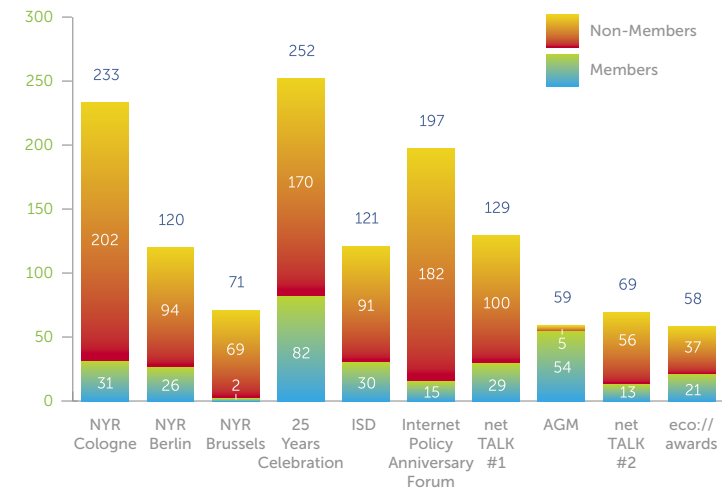
10.1 25 Years Internet with Responsibility

10.1.1 Jubilee Show: eco Celebrates 25 Years of Internet with Responsibility

It is 26 June 2020. Exactly 25 years ago to this day, a group of determined Internet pioneers, including the current eco CEO Harald A. Summa, founded the "Electronic Commerce Forum", eco for short. The aim was to make the then new Internet shine among German companies, to bring together companies interested in the commercial use of this highly innovative technology, and to get them engaged with one another. Today, eco is the largest association of the Internet industry in Europe, with more than 1,100 members.

The countdown has begun: 10 minutes before the beginning of the eco online birthday party, and the excitement in the studio is palpable. Over the following one and a half hours, eco entertainingly demonstrated just how impressively the eco Association and the Internet itself have developed in 25 years. "In the beginning, we had the idea of promoting the Internet in Germany, and eco was literally founded around the kitchen table", recollects eco's CEO Harald A. Summa. "Back then, I only managed with some difficulty to drum up the seven members necessary for the foundation of an association. That was the beginning of eco."

Congratulations from Internet pioneers and politicians

In addition to Harald A. Summa, other outstanding minds in the field of digitalisation looked back on 25 years of commercial Internet in Germany: Michael Rotert, Tim Cole, Michael Schneider and Sebastian von Bomhard were on location in the studio or joined via video link-up. Congratulatory videos were sent by the Digital Minister of North-Rhine Westphalia, Prof. Andreas Pinkwart and the Mayor of Cologne, Henriette Reker.

"The Internet has the potential to change our lives, our society and our work in a lasting manner", said Chair of the eco Board Oliver Süme in his welcoming address. For eco, this means that the Internet must be designed in the interest of people, even beyond laws and regulations. For this reason, the motto of the eco anniversary is "25 Years of Internet with Responsibility".

Music should be a part of birthday celebrations – and at eco this is especially true. The band Maceedo enriched the entertaining programme with their jazzy intermezzos. A troupe of artists from Chapeau Bas also provided entertainment.

Sponsors support eco anniversary

Birthday wishes were also offered by the sponsors of eco's anniversary campaign "Digital Discovery", with these sponsors presented by eco Managing Director Alexander Rabe. Toplink GmbH, Huawei Technologies, Microsoft, Leaseweb, and Netcologne congratulated eco live on site or via video clips.

After the ceremonial presentation of an eco:// award to Harald A. Summa and Michael Rotert for their pioneering work, there was also – it goes without saying – a birthday cake. After blowing out the 25 candles, Harald A. Summa then raised a glass with the audience to another 25 years of eco.

In the run-up to the live stream, a party package (balloons, confetti, popcorn and wine) had been dispatched to the spectators via post. Finally, Harald A. Summa thanked all spectators, companions and supporters for 25 years of eco. As soon as it is possible to celebrate once more in larger gatherings, eco would like to celebrate the birthday party together in person.

Watch the birthday show now:
www.youtube.com/watch?v=BQjkEt6LPas
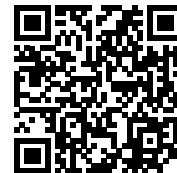
10.1.2 Videos with the eco Board / Management

Harald A. Summa, CEO eco Association

"We must take responsibility and engage in the societal discourse – for a people-centred, neutral and open Internet for all." Harald A. Summa, CEO eco Association

Oliver Süme, Chair of the eco Association Board

"We want to assume responsibility above and beyond what laws and standards dictate and to positively shape the Internet's development."
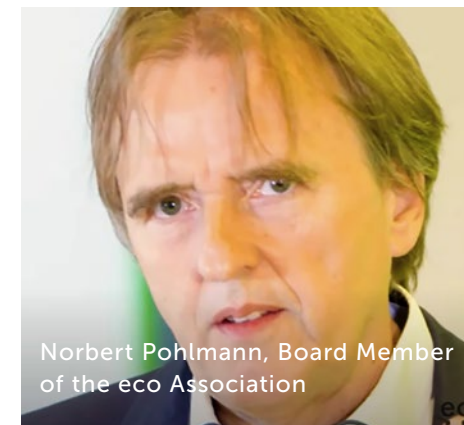
Norbert Pohlmann, Board Member of the eco Association

"We stand for an ethically-oriented digitalisation: for a free, technology-neutral and network-neutral, high-performance Internet. We want to supply the digital transformation with security, trust and reliability."
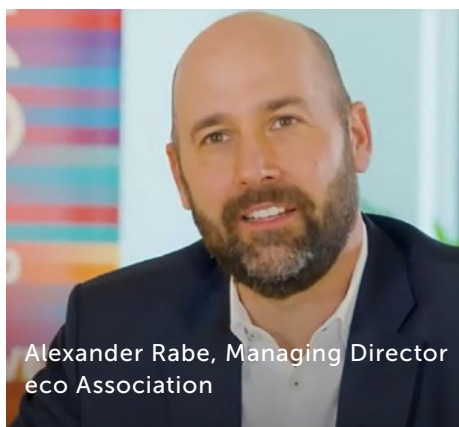
Alexander Rabe, Managing Director eco Association

"25 Years of Internet with Responsibility means to us:, Responsibly harness the opportunities of digitalisation for the good of people and society – and don't just simply do anything that's possible."

Felix Höger, Board Member of the eco Association

"In reflecting on innovations and making recommendations in the Competence Groups – we take our motto Internet with Responsibility very seriously."

Klaus Landefeld, Vice Chair of the eco Association Board

"For us, taking responsibility means addressing societal questions: How can we make innovative services safe and secure for everyone to use?"

10.1.3 Congratulatory Video Messages

eco says thank you for the
numerous congratulatory messages

Dorothee Bär, Federal Government
Commissioner for Digitalisation

Thomas Jarzombek, BMWi
Commissioner for the Digital
Economy

Saskia Esken,
SPD Federal Co-Chair

Martina Dresbach,
gtt GmbH

Jens Weller,
Managing Director toplink

Steffen David,
I/P/B Internet Provider Berlin

Thorsten Hennrich,
Plusserver

Frank Gross,
gridscale.io

Ursula Vranken,
CEO and Founder IPA Consulting

Michael Frey,
International Business Consulting

Detlev Artelt,
CEO aixvox GbmH

Joachim Astel,
noris network AG
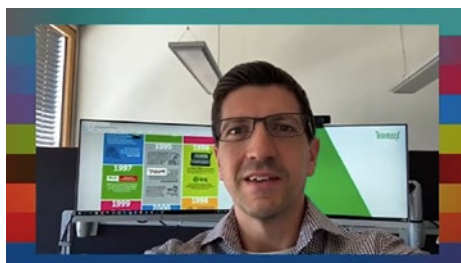
Raphael Bächle,
Telemaxx Telekomunikation GmbH

Stephan Rettenberger,
ADVA Optical Networking

Thomas Rickert, eco Leader of the
Names & Numbers Forum

10.1.4 eco Anniversary Publication
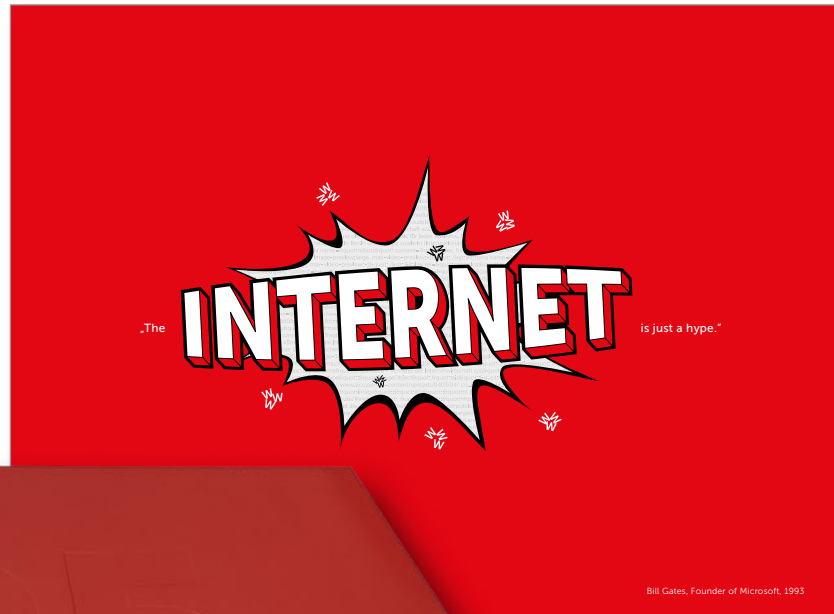
How can 25 years of Internet and 25 years of association history fit between two book covers? No problem, as shown by eco's anniversary publication. With loads of love for detail, we created a book of almost 100 pages. Here you can find not just historical facts, but also some nice anecdotes, not to mention inputs from a wide range of eco companions. Here are a few excerpts; those who have not yet held a copy in their hands can do so the next time they visit eco in Cologne or Berlin.

.The **INTERNET** is just a hype."

Bill Gates, Founder of Microsoft, 1993

"THE INTERNET IS LIKE A WAVE. EITHER LEARN TO SWIM WITH IT OR YOU SINK."

Bill Gates, Founder of Microsoft, 2017
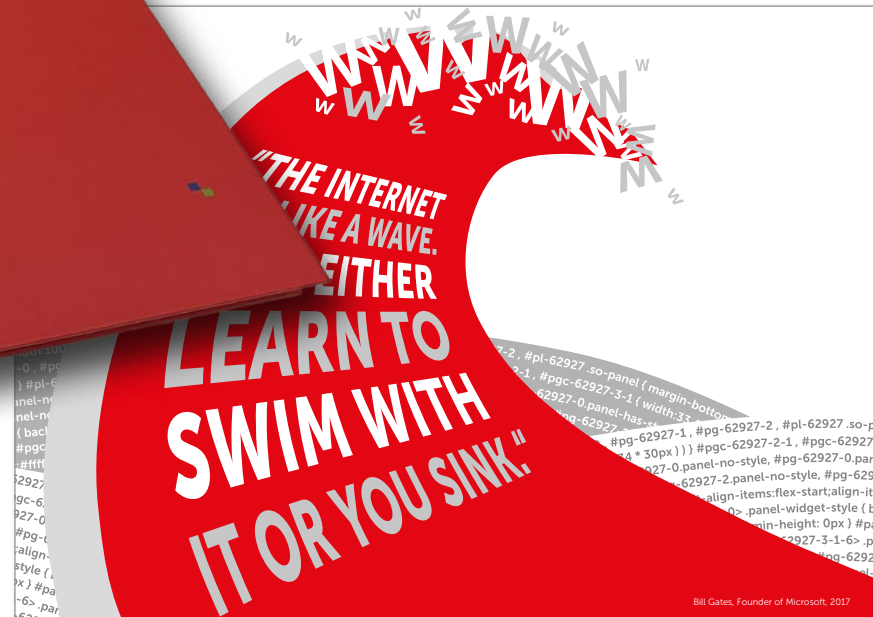
THE GREATEST ACHIEVEMENTS OF THE INTERNET

Giovanni Seppia
„The greatest achievement of the Internet is the connectivity it brings: the human diversity it inspires and its contribution to the democratization of digitized information diffused on a global scale."

Daniel Brans
„The Internet has in the meantime become the essential instrument for overcoming social barriers, whether local or global."

Melanie Buck
„In my view, the greatest achievement of the Internet is that, regardless of time and space, it enables us to provide services online. The small shop around the corner can now offer its products or services around the clock. And these can reach not only people in the immediate vicinity, but also those beyond local and national borders. This creates economic growth and more flexibility for people."

Christian Solmecke
„The Internet has created a new form of public sphere which has made us all global citizens. For politics, business and society, this presents a simultaneous opportunity and obligation."

Olaf Fischer
„The Internet has made grand-standing hierarchical knowledge obsolete."

Eric Schmidt
„The Internet is the first project that humanity has built that humanity itself doesn't understand; the largest experiment in anarchy that we have ever had."

Dr. Béla Waldhauser
„The biggest achievement is how the Internet has enabled us to manage the current pandemic so well. Digital services are the engine that keeps the economy and society going, even in times of curfews, home office and school closures."

Tutorial: Ingenieurwissen für Bergbahnbau Minuten

MILESTONES 2016-2020

eco WEBSITE

ALEXA, PUT MONSTER FOOD ON THE LIST!

From this point onwards, eco is heading down the same path as networker NRW and Digital Hub FrankfurtRheinMain.

Europe agrees on the EU-US Privacy Shield with the USA and introduces the General Data Protection Regulation (GDPR). eco welcomes both measures as well as the end of interference liability for hotspot operators.

The Association opens another office in Brussels and runs the first Internet Policy Forum in Berlin.

After a long struggle and with significant participation by eco, the Internet Assigned Numbers Authority (IANA) is finally released from US supervision at the 55th ICANN meeting.

The Internet in Germany also gains an ear with Amazon Echo; while with Pokémon Go, the world sets off on a pocket monster hunt.

BEYOND THE RED LINE

In the run-up to the German Bundestag elections, eco conducts a thorough Internet policy check of all party programmes, welcomes Heise Medien as its 1,000th member, and publishes the most comprehensive smart city study to date.

The Association ensures more security on websites with the "SIWECOS" project, joins forces with the i2Coalition in battling against cybercriminals and abuse attacks and, with a broad association alliance, fights against the Network Enforcement Act.

Influencer is the buzzword of the Year, and a global campaign against sexual harassment is launched under the hashtag #MeToo.

HIGH HANGING FRUIT

The implementation of the GDPR becomes mandatory and triggers some commotion among German companies.

For the first time, Germany gains a Minister of State for Digital Affairs, Dorothee Bär.

eco founds the "Alliance for the Strengthening of Digital Infrastructures in Germany" together with numerous important players in the industry, and introduces the "Digital Business Models" division.

Apple has become the first private company to reach a stock market value of one trillion US dollars.

According to the ITU, more than 80 percent of people in industrialised countries are using the Internet.

MANY ZERO'S FOR MORE ONES

eco presents its "Digital Ethics" compendium, the "Digital Compass of the German Federal States", and the "Service-Meister" AI project.

In Germany, the federal and federal state governments agree on a digital pact for schools, and the Federal Network Agency auctions off 5G licenses for over six billion Euro.

"Welcome to the age of upload filters" — the EU votes in favour of the controversial copyright reform. In return, the ECJ rejects the German ancillary copyright.

eco presents a study on the potential of AI for the German economy, works on the "eco Blockchain" initiative, and supports the conception of the European Gaia-X project.

THE SHOW MUST GO ONLINE

In its anniversary year, eco embarks on "Digital Discovery" and celebrates its 25th birthday with an entertaining online show.

The ECJ overturns the EU-US Privacy Shield, and eco works on a framework for a blockchain consortium.

The consequences of the Covid pandemic are successfully cushioned by the digital infrastructure: home office, webinars and video streaming are booming. At DE-CIX, this leads to a new world record for data throughput of over 9.3 Terabits per second. Digital sovereignty is suddenly gaining in importance and, in a multitude of ways, eco shows how an "Internet with Responsibility" can be shaped — even in times of crisis.

2016   2017   2018   2019   2020

10.2 eco New Year's Receptions

At its Cologne, Berlin and Brussels locations, eco welcomed its members as well as representatives from politics and business to the start of eco's anniversary year, 2020.

New Year's Reception Cologne

Around 200 guests gathered at the eco head-quarters in Cologne. At the opening of the event, they were greeted by eco Chair of the Board Oliver Süme, eco CEO Harald A. Summa, and eco Managing Director Alexander Rabe. Afterwards, networking took centre stage, with this complemented by drinks and finger food, and live lounge, reggae and jazz music by Maceedo.

New Year's Reception Berlin

Oliver Süme welcomed around 100 guests to the eco Capital Office in Berlin. Here, politics met up with the Internet industry: Klaus Vitt, State Secretary at the German Federal Ministry of the Interior (BMI), gave a keynote speech on the challenges of IT security in a connected world. Afterwards, the guests had the opportunity to network over drinks and finger food.

New Year's Reception Brussels

For the first time, in 2020 eco also invited guests to attend a New Year's Reception in its Brussels Office. In keeping with the start of the EU Commission's and Parliament's new legislative term, the European policy-makers discussed the topics and trends of the coming months and years. Following on from Oliver Süme's greeting, keynote speeches were delivered by the honorary guests Axel Voss, MEP (EPP) and Tiemo Wölken, MEP (S&D). In the run-up to the eco New Year's Reception in Brussels, eco presented its current study on the economic potential of artificial intelligence.
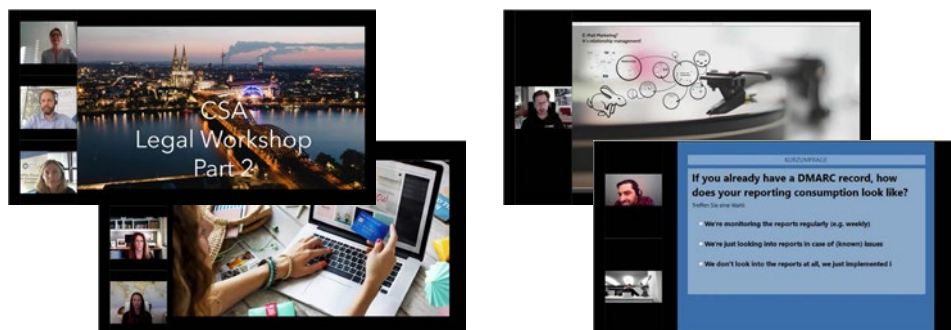
10.3 CSA Digital Email Summit: "Bridging the Gap – Reality vs. Expectations"

Bridging the gap between expectation and reality is often tricky – also in the field of email. The viewpoints of senders and recipients of commercial emails are often far apart. How can corresponding bridges be built in the field of email marketing? The 600 participants of the CSA Digital Email Summit received valuable tips in ten English-language online panels between August and December. Eighteen email experts from well-known companies explained their perspectives on the motto and spoke about various topics from the world of commercial emails.

The series of events opened with the three webinars of the Legal Insights series. Legal issues regarding documentation, the burden of proof and fines in email marketing were the focus. Topics such as the requirements of the GDPR for electronic communication, the legal framework in other selected countries, as well as the classic issues surrounding newsletter distribution were also addressed by the CSA legal experts.

Marcel Becker from Verizon Media and Clea Moore and Heather Goff from Oracle opened their webinar with their positive observations of recent times: ISPs and senders are talking to each other more and more and trying to understand each other's business. Nevertheless, it remains difficult for senders to persuade brands to adapt and invest in new technical standards such as BIMI and SCHEMA when the benefits of these technologies are difficult to measure. Marcel Becker's vision is: Making sure that users get all of the emails they want and that all the ones they don't want are kept out.

The relationship between a brand and an email service provider (ESP) is critical to success. However, tensions already arise when assessing who is responsible for delivery and placement in the inbox. Tamara Bond from dotdigital and Alice Cornell at Change.org shared what can go right and what can go wrong in their webinar. However, both also highlighted the successes that can be achieved through a symbiosis of two teams. Ultimately, brands and ESPs are both on the same side.

Jon Harmer from Google and Ryth Martin from Skipify focused on the future of email. Until recently, the content of emails was purely static. Users had to leave the inbox to take action. Yahoo Mail, mail.ru, AOL and other providers are currently introducing technologies such as AMP to enable interactive emails. Brands could, therefore, simply introduce dynamic emails in which people can shop directly.

What factors determine whether an email can fulfil its purpose in the recipients' inboxes? This was discussed by Dr. Conny Junghans and Arne Allisat from 1&1 Mail & Media Applications SE. They both took an analytical look at customer behaviour. What can we all do to help people fall in love with emails again?

What we humbly call email marketing is in itself a technological and organisational blueprint for highly automated and individualised marketing. This thesis was put forward by Nikolaus von Graeve from rabbit eMarketing GmbH. He showed: The ability to communicate individually is the key to building and maintaining relationships.

The BIMI (Brand Indicators for Message Identification) standard clearly indicates who an email comes from by displaying a logo in the inbox. This increases security and people's trust in the email. Romina Gansbühler and Peter Scholzuk, both from Josef Witt GmbH, showed how they put BIMI into practice: from the implementation of DMARC to the introduction of BIMI.

In the Implementing BIMI workshop, Florian Vierke from Mapp Digital and Peter Scholzuk from Josef Witt GmbH, a member of the Witt Group, shared best practices first-hand. They reported on their practical experiences with the joint implementation of BIMI. The change of perspectives was exciting for the audience – on the one hand, from the point of view of a brand, on the other hand, from that of an email provider.

Photo: Matthias Leitzke

Photo: Matthias Leitzke

10.4 Gaia-X Summit: Europe Lays the Foundation for a Common Ecosystem

Around 4,000 participants from politics, science and industry met in November 2021 at the Gaia-X Summit organised by the eco Association. The goal of the Online Summit: Laying the foundation for all the services and functions that Gaia-X will offer in the future.

What will it take for this international initiative to succeed? "Know-how, technology and dialogue", says Andreas Weiss, Head of Digital Business Models at the eco Association. And it is a dialogue that is also being conducted by German Federal Minister of Economics and Technology Peter Altmaier, his French counterpart Bruno Le Maire, and EU Commissioner Thierry Breton. After all, Gaia-X is regarded by politicians as the key to a digital Europe and a guarantor of growth and prosperity

Digital Summit 2020: Business with Gaia-X

How do we make digitalisation a driver for sustainability? The German federal government's Digital Summit 2020 sought answers to this central question. Peter Altmaier and Harald A. Summa discussed on the second day of the summit: How can Gaia-X be used to share data in a comprehensive, self-determined, secure and sovereign manner in order to benefit collectively and economically from digital business models?

The more than 160 companies and associations from all over the world that are involved in the Gaia-X initiative will ensure that this will be successful. "The Gaia-X AISBL will coordinate cooperation and further open up EU policy for the topic", said Harald A. Summa, CEO at the eco Association, which co-founded the initiative.

Gaia-X and the automotive industry: Foundation for growth and prosperity

At the invitation of Wobcom and eco, around 70 guests from politics, business and the public met in Wolfsburg in October 2020 to exchange views on digital sovereignty, innovation and Gaia-X. "We are recombining existing European cloud offerings", said Andreas Weiss. "This creates an open and interoperable system built on uniform standards and European values."

Video conferencing instead of on-site appointments, online lessons instead of school visits, home office instead of office work: "In Covid times, you first have to get used to how digital and fast things can run", said Stefan Mühlen, State Secretary in Lower Saxony's Ministry of Economics, in his welcoming address at Congresspark Wolfsburg.
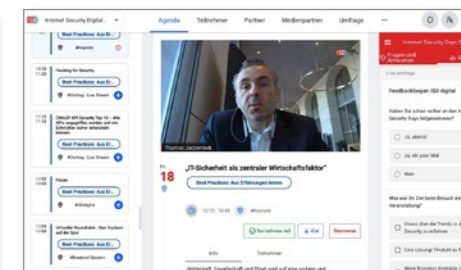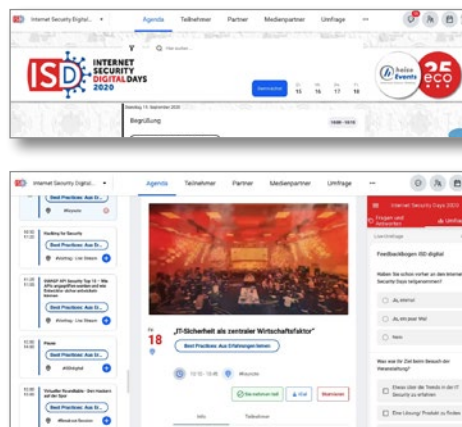
10.5 ISDdigital: Safely Through the Crisis

Around 150 security experts and 47 speakers discussed IT security and the special challenges of the Covid-19 crisis at the first ISDdigital, which took place from 15 to 18 September.

Four days, four focal points, 47 speakers, one topic: IT security – this was the concept of the first digital Internet Security Days (ISDs). Due to the Covid pandemic, for the first time eco and heise Events organised the renowned security conference, which has been in place for ten years, on a purely virtual basis. Over the event platform talque, eco Board Member for Security Prof. Norbert Pohlmann welcomed the 150 registered participants on the first day of the event. Walter Haas, CTO & CSO of Huawei

Technologies Deutschland GmbH, gave the opening keynote speech.

Each of the four event days had a motto. On Tuesday, it was "On the Trail of the Hackers". This was about new attack methods and defence mechanisms. After the lunch break, the "Cybersecurity in a Crisis" panel addressed safe and secure working during the Covid pandemic.

War Stories report from the field

The participants were able to expand their personal business networks during the business speed-dating slot. The individual profile created at the beginning of the event made it easier to meet up with precisely fitting contacts. The

system brought together two new interlocutors every eight minutes.

"Human Factor – the Human Firewall" was the motto of the second day. The focus here was on the users. After the lunch break, the War Stories were gripping, with experts reporting on fascinating cases from the field.

The third day was themed "Internet Everywhere – Security Everywhere?!" The panel discussion in the afternoon dealt with 5G, edge computing and Smart City. Christian Schottmüller, Senior Partner & Cooperation Manager at Perseus AG, then spoke about "Emergency Management – What to Do in a Cyber Emergency". Next up was Dr. Klaus Rummel with "Viruses in Healthcare: The Hospital in Times of Emotet and Covid-19".

Learning from experience

The fourth and last event day under the motto of "Best Practices: Learning from Experience" was opened by Thomas Jarzombek, BMWi Commissioner for Start-ups and Digitalisation. At lunchtime, virtual roundtables gave participants the opportunity to directly exchange views on par with other attendees on the main topics of the four days.

Finally, Markus Schaffrin, eco Security Expert and Head of Member Services, thanked the sponsors Huawei, IT-Seal, KnowBe4, Perseus, and SoSafe, without whom ISDdigital would not have been possible. He also thanked the approximately 150 participants, 50 speakers, and the entire ISD team. Together, everyone made ISDdigital 2020 a complete success and proved that, even as a purely online event, the Internet Security Days stand for top-class professional exchange and networking.

10.6 eco://awards

On 26 November 2020, the eco Association presented the eco://awards for the 19th time. Due to Covid, this was held for the first time as an exclusively online event. The number of applications for these awards, which are among the most prestigious in the Internet industry, remained high. A jury of experts with representatives from business, science and politics selected the best submissions in six categories. The key in evaluating the submissions was the uniqueness and innovation of each entry as well as its scope and impact for the industry.

The awards ceremony, which was an online-only event with live broadcasts of all nominees, speakers and award winners, was a complete success. "In our anniversary year, we are also honouring for the first time that special sense of responsibility that companies have shown during the Covid crisis", said eco CEO Harald A. Summa in his welcoming speech. "Once again, the best of the best in the Internet industry have competed for the coveted awards."

eco://awards 2020 honoured online peak performance

"This year, the Internet has proven more than ever just how indispensable it is for our society and working world during crisis situations", said Oliver Süme, eco Chair of the Board, in his welcoming speech, adding: "This year's eco://awards therefore honour solutions and the people who promote the further

development of the Internet in a responsible and outstanding manner."

Prizes were awarded in the categories of Data Centre Infrastructure, Security, Cloud & Hosting, and Start-ups. During the one-and-a-half-hour live broadcast via online stream, the presenters announced the eco://awards in a total of six award categories. With high-voltage excitement – and the smiles on the winners' faces – the time flew by, while live music from the band Saitenhieb created an all-round great atmosphere. The winners and nominees also celebrated their successes kitted out with eco party sets with prosecco, confetti and other celebratory goods, which had been sent by post to everyone's homes in advance of the event.

The winners of the eco://awards 2020

The following initiatives convinced the jury with their creativity, innovative strength and market potential, and were awarded the prestigious prize:

Cloud & Hosting Category

With its vertically-integrated business model, OVHcloud controls the entire value chain – from its own server production and water-cooled data centres to its own fibre optic network. This enables a high-quality product portfolio that leaves no customer wishes unfulfilled, while complying with the strictest data protection regulations.

Data Centre Infrastructure Category

The SDC SpaceNet DataCenter is the best example of "IT security made in Germany". In terms of both availability and security, it meets

Class 4 of the DIN EN 50600 data centre standard, and thus the highest requirements in terms of high-end colocation. The data centre on the outskirts of Munich, Germany, combines a modern, environmentally-friendly cooling concept with high energy efficiency and extremely fast data transmission.

Ladies in Tech Category

For Agnes Heftberger, diversity is a key topic because, as she sees it, many positions in business, politics and research are still too one-sided. She campaigns for us all to remove our biases and bring out the best in each individual and to get to the point where equal opportunities for men and women as well as female specialists and maneagers finally become an everyday reality.

Security Category

The R&S Trusted VPN Client of Rohde & Schwarz cybersecurity GmbH reliably protects employee access to the corporate network – regardless of whether they are working from home, in a hotel, or at the airport. The completely software-based solution is versatile and easy to integrate on existing systems.

Startups Category

With the decentriq software platform, data and machine learning models can be marketed in a targeted, application-oriented manner. The process is completely encrypted and the providers retain full data control. Using Confidential Computing as an interface, decentriq enables efficient data collaboration – securely and simply.

Special Prize: Internet with Responsibility

Microsoft Germany was particularly pleased to receive the eco://award in the category Internet with Responsibility. It was awarded for the Online Academy of the educational initiatives "Code your Life" and "IT-Fitness". Thanks to Microsoft and fjs, around 25,000 children and young people gained insight into IT, coding and artificial intelligence during the Covid crisis.

All nominees for the eco://awards 2020:
international.eco.de/ecoaward-2020
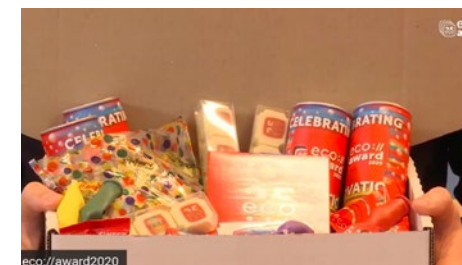
10.7 Webinars and Other Events

Total Number of Participants in the 67 Webinars 2020

Total
2,584

600
1,984
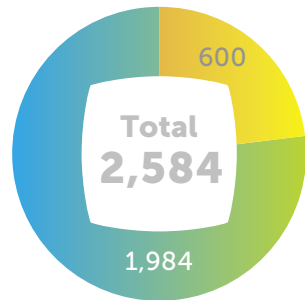
Participants · Members · Interested Parties and Potential New Members

Study: The Internet Industry in Germany 2020-2025: Impact of the Covid Crisis

Total
159
50
109

Press Briefing 1 · Webinar Part 1 · Webinar Part 2 · Webinar Part 3 · Press Briefing 2 · Webinar Part 4

Names & Numbers CG

Total
228
123
105

02.04. · 30.04. · 08.05. · 27.10. · 10.11.

Digital Business Models

Total
622
78
544

13.03. · 20.03. · 08.04. · 15.05. · 19.06. · 25.06. · 27.08. · 27.08. · 08.09. · 23.09. · 19.11.

Policy & Law

Total
447
96
351

03.04. · 21.04. · 27.05. · 16.06. · 01.07. · 07.07. · 16.10. · 27.10.
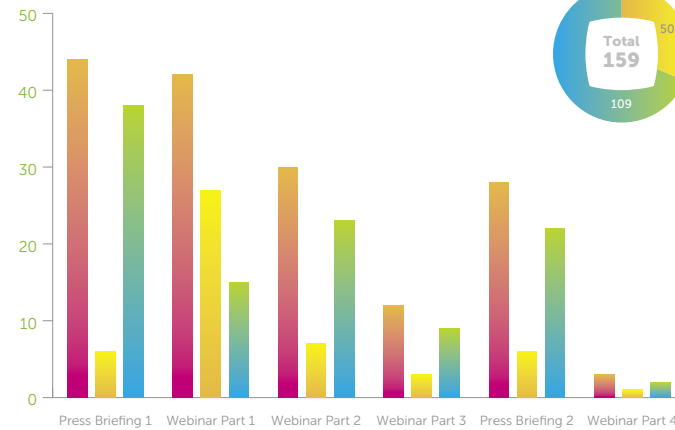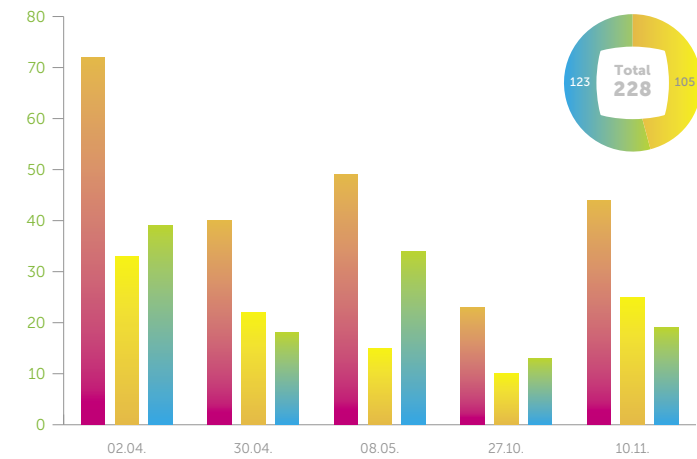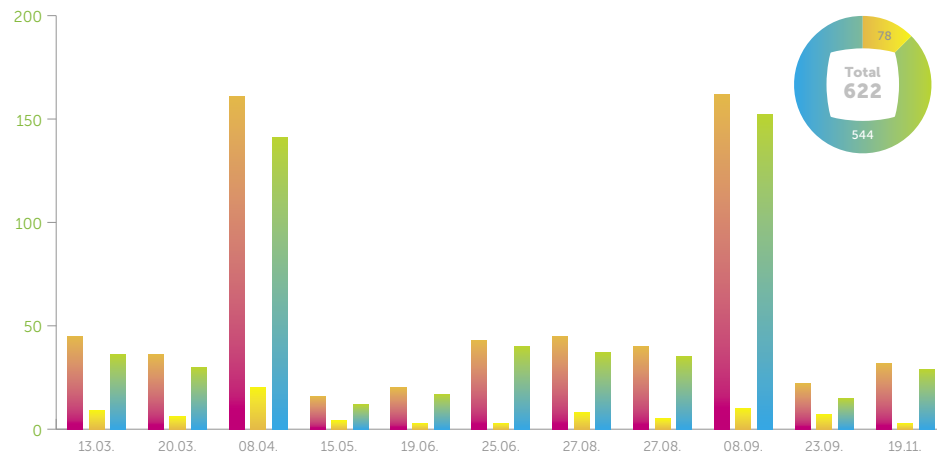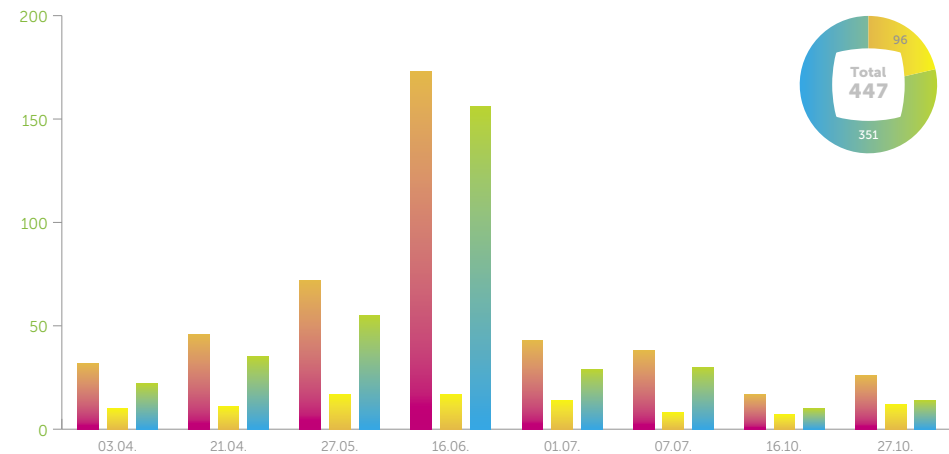
Security CG
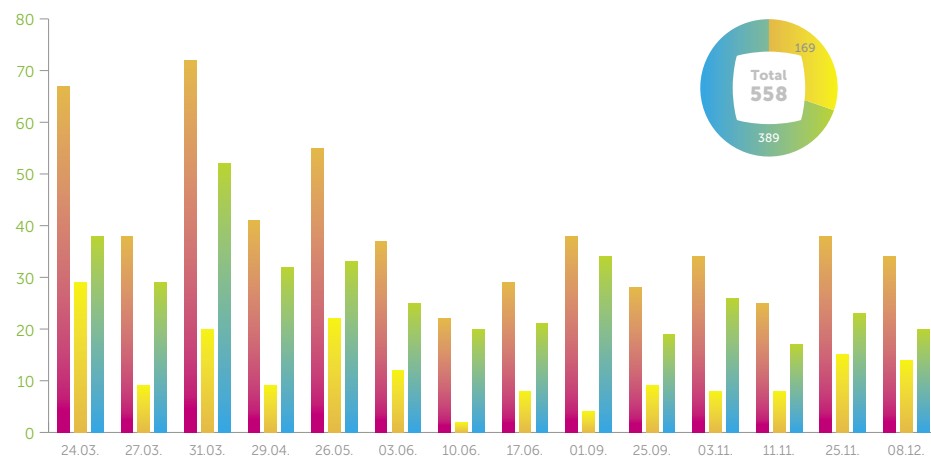
New Work CG

Cloud Computing CG (EuroCloud)

Data Centre CG
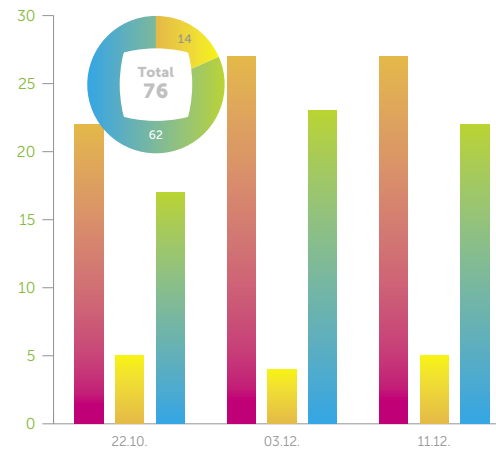
IoT CG
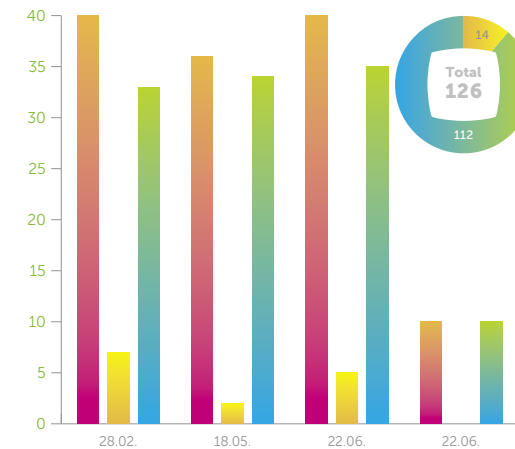
eco Events 2020

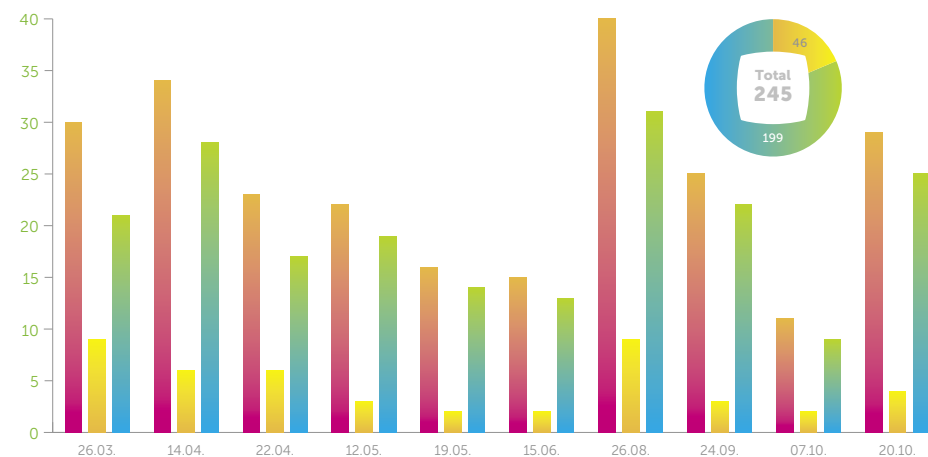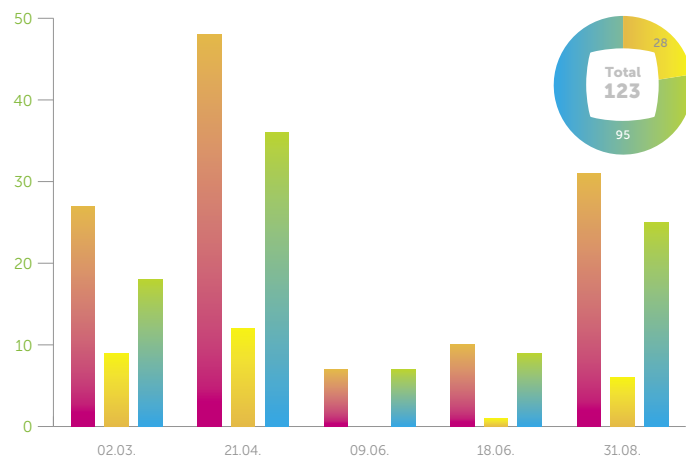| Date	Event	Topic	Location
15.01.20	Email CG	1st Meeting: Trends 2020 / BSI Collaboration / AMP Keynote Speech	Cologne
16.01.20	New Year's Reception Cologne	Outlook for the New Year	Cologne
16.01.20	CG Leaders' Meeting	Meeting of all CG Leaders	Cologne
21.01.20	Policy and Press Breakfast	Presentation of New Study on Artificial Intelligence	Berlin
23.01.20	Blockchain CG	eco Member Workshop: A Federated eco Blockchain-as-a-Service Platform	Frankfurt
28.01.20	New Year's Reception Berlin	Outlook for the New Year	Berlin
30.01.20	IoT CG	Advisory Board Meeting IoT	Cologne
04.02.20	LiT	LiT – Ladies in Tech Meetup Vol. 3	Cologne
05.02.20	Policy and Press Breakfast	Presentation of New Study on Artificial Intelligence	Brussels, Belgium
05.02.20	New Year's Reception Brussels	Outlook for the New Year & Presentation of the AI Study (English version)	Brussels, Belgium
05.02.20	eco Academy	Future Cloud 2020	Frankfurt
11.02.20	Service-Meister	Launch of the new AI project Service-Meister	Frankfurt
12.02.20	eco Roundtable / Policy & Law	Morning Dialogue	Berlin
18.02.20	eco Academy	IoT: Is Security Scepticism Following on from the Connectivity Hype?	Gelsenkirchen
28.02.20	eco Webinar / IoT CG	Digital Twin: Central Building Block of Industry 4.0	Webinar
02.03.20	eco Webinar / Cloud Computing CG	Data Protection Breach Notification Under the GDPR: Pitfalls from the Cloud Provider's Perspective	Webinar
09.03.20	eco Complaints Office	Youth Media Protection Expert Lunch	Berlin
10.03.20	eco Complaints Office	Presentation of Annual Report 2019	Berlin
13.03.20	eco Webinar / Digital Business Models	Trustworthy AI Technology - Certification Fields of Action	Webinar
20.03.20	eco Webinar / Digital Business Models	Virtual Work	Webinar
24.03.20	eco Webinar / Security CG	Human Factor: The Psychological Tricks of Modern Phishing Fraudsters and How You Can Protect Your Employees	Webinar
26.03.20	eco Webinar / New Work CG	What Employers Need to Know Now: Labour Law in Covid Times	Webinar
26.03.20	eco netTALK #1	Importance of Digital Infrastructures in Times of Crisis	eco live
27.03.20	eco Webinar / Security CG	Office 365: Implementing Security and Compliance in SMEs Easily and Efficiently	Webinar
30.03.20	eco Webinar / Complaints Office	Presentation of Annual Report 2019	Webinar
31.03.20	eco Webinar / Security CG	Digital Sovereignty	Webinar
02.04.20	eco Webinar / Names & Numbers CG	Global Domain Report – The Status Quo of the Domain Industry	Webinar
03.04.20	eco Webinar / Policy & Law	DNS over HTTPS (DoH): A Contribution to More Security and Privacy - or the Opposite?	Webinar
08.04.20	eco netTALK #2	Covid and the Effects on the Digital Industry: Crisis as Opportunity? Potentials and Challenges for Digital companies	eco live
08.04.20	eco Webinar / Digital Business Models / GAIA-X	GAIA-X in a Nutshell	Webinar
14.04.20	eco Webinar / New Work CG	Remote Leadership – Leading from Afar	Webinar

eco Events 2020			
Date	Event	Topic	Location
20.04.20	Alliance for the Strengthening of Digital Infrastructures in Germany	Steering Committee and Advisory Board Meeting	Webinar
21.04.20	eco Webinar / Policy & Law	Network Enforcement Act Reform: Overview and Outlook - Fields of Action and Challenges	Webinar
21.04.20	eco Webinar / Cloud Computing	Deep Dive: GDPR Code of Conduct for the Cloud	Webinar
22.04.20	eco Webinar / New Work CG	Digital Learning Concepts and Their Practical Application	Webinar
29.04.20	eco Webinar / Security CG	IT Security Breaches in Everyday Life incl. Live Demo	Webinar
30.04.20	eco Webinar / Study	Press Briefing: Exclusive Insights into the Study "The Internet Industry in Germany 2020-2025: Impact of the Corona Crisis"	Webinar
30.04.20	eco Webinar / Names & Numbers CG	DNS Security and Challenges during COVID-19	Webinar
08.05.20	eco Webinar / Names & Numbers CG	Maintaining the Internet During COVID-19: A Joint Industry Update from i2Coalition & eco	Webinar
12.05.20	eco Webinar / New Work CG	Bricks, Bytes & Behavior: Space, Tools and Culture of New Work	Webinar
13.05.20	LiT	LiT – Ladies in Tech Meetup Vol.4	Webinar
15.05.20	eco Webinar / Digital Business Models	AI for Service Technicians – Assembly and Drive Technology	Webinar
18.05.20	eco Webinar / IoT CG	5G, AI and Covid: How Technology is Helping the Healthcare Industry	Webinar
19.05.20	eco Webinar / New Work CG	The Digital World of Work – It's Not On Its Way; It's Already Here!	Webinar
26.05.20	eco Webinar / Security CG	Safe & Secure in the Crisis	Webinar
27.05.20	Service-Meister	First Service-Meister Partner Meeting	Online
27.05.20	polITalk	Digitalisation and Environmental Sustainability – What Roles Do Data Centres and Digital Infrastructures Play?	Webinar
28.05.20	eco Webinar Effects of the Covid Crisis Part 1	Network, Infrastructure & Operations	Webinar
03.06.20	E-Mail CG	2nd Meeting: Spam Volume in the Covid Crisis / FeedBackLoop for ISPs and Providers	Online
03.06.20	eco Webinar / Security CG – Digital Identity Month	Authentication Beyond PIN and Password	Webinar
04.06.20	eco Webinar Effects of the Covid Crisis Part 2	Service and Applications – Focus on Cybersecurity	Webinar
09.06.20	eco Webinar / Cloud Computing CG	Active in the Crisis - Initiative of the Trusted Cloud Providers for Home Office and Digital Collaboration	Webinar
10.06.20	eco Webinar / Security CG – Digital Identity Month	Who owns the Machines? – Identities in the Internet of Things	Webinar
15.06.20	eco Webinar / New Work CG	Everything Agile or What?	Webinar
16.06.20	Abuse CG	BSI Update //Kibana in Abuse Use of Demo from Strato 1&1 (IONOS Bus)	Online
16.06.20	eco Webinar / Policy & Law	The Digital Evolution – E-Commerce Directive to Digital Services Act and a Look at the German Council Presidency	Webinar

eco Events 2020			
Date	Event	Topic	Location
16.06.20	eco Webinar	Brussels: Motto "On the Status of European Digital Policy"	Webinar
17.06.20	eco Webinar / Security CG – Digital Identity Month	Legal and Ethical Aspects of Digital Identities	Webinar
18.06.20	eco Webinar Effects of the Covid Crisis Part 3	Aggregation & Transactions – Focus on E-Commerce	Webinar
18.06.20	eco Webinar / Cloud Computing CG	How the Hybrid Cloud is Revolutionising the Digital Future – More Than Just a Backup	Webinar
18.06.20	Livestream: Start-ups in the Covid Crisis	Start-ups in the Covid Crisis – Opportunities and Challenges	Livestream
19.06.20	eco Webinar / Digital Business Models	How AI is Transforming Work in Industry 4.0	Webinar
22.06.20	eco Webinar / IoT CG	IoT Business Trends 2020: Multimodal Logistics with IoT	Webinar
23.06.20	eco Webinar / Study	Press Briefing: "The Internet Industry in Germany 2020-2025"	Webinar
23.06.20	eco Webinar / eco Academy	"PropTech: Sensors, Platforms and Data Management First & Foremost" in Cooperation with GIMI RESEARCH	Webinar
24.06.20	eco Webinar / Security CG – Digital Identity Month	Identities in Germany (Members only)	Webinar
24.06.20	eco Webinar Women in Tech (as part of Twenty2Xvirtual) with toplink	Diversity and Female Entrepreneurship with a Focus on SMEs	Webinar
25.06.20	eco Webinar Effects of the Covid Crisis Part 4 / IOT CG	Smart Industries & Paid Content	Webinar
25.06.20	eco Webinar / Digital Business Models / Service-Meister	Data Strategies in the AI Field	Webinar
26.06.20	25 Years eco	The Digital Birthday Party	Livestream
29.06.20	eco Webinar / IoT CG	The Status of IoT security with AV-ATLAS: Only Secure is Really Smart	Webinar
01.07.20	eco Webinar / Policy & Law	Conversation with Policymakers – GWB Digitalisation Act	Webinar
02.07.20	eco Webinar / eco Academy	"Future Car": Electric, Autonomous – and Paid for With Data and Use of New Services?	Online
03.07.20	Networks CG	Moore's Law, AI and the Internet of Today and Tomorrow	Online
07.07.20	eco Webinar / Policy & Law	eco Roundtable: Covid Crisis - Implications for Future Digital Policy	Webinar
08.07.20	eco Webinar / eco Academy	Future Internet: Build-Your-Own Broadband Internet?	Webinar
23.07.20	eco Webinar / eco Academy	MarketingTech Between Euphoria and Scepticism: Will Algorithms Really Be First & Foremost in the Future?	Webinar
04.08.20	eco Webinar / eco Academy	Digital Health - Status and Perspective of the Health Data Economy	Webinar
13.08.20	eco Academy	"Future Car": Electric, Autonomous - and Paid for With Data and Use of New Services?	Online
18.08.20	eco Academy	Future Internet: Build-Your-Own Broadband Internet?	Berlin & Online
19.08.20	eco Academy	City Carrier & Regional Networks	Webinar

eco Events 2020			
Date	Event	Topic	Location
25.08.20	eco Academy	Future Internet: Build-Your-Own Broadband Internet?	Frankfurt
25.08.20	Alliance for the Strengthening of Digital Infrastructures in Germany	Steering Committee Meeting	Online
26.08.20	eco Webinar / New Work CG	AI in Recruiting: Status Quo, Data Basis & Outlook	Webinar
27.08.02	eco Webinar / Digital Business Models	Platforms in the AI Field – Acceptance or Rejection?	Webinar
27.08.20	eco Webinar / Digital Business Models / GAIA-X with EuroCloud Suisse	GAIA-X Information Webinar	Webinar
31.08.20	CSA – Email Summit digital	Legal Insights Vol.1 – Documentation/ Burden of Proof and Fines	Online Workshop
31.08.20	eco Webinar / Cloud Computing	Data Protection – Organisational and Technical Implementation?!	Webinar
01.09.20	eco Webinar / Security CG	Security Talk "IoT Security"	Webinar
02.09.20	E-Mail CG	3rd Meeting: "Reputation Building for New Brands/Domains", DNS Blocklists	Online
07.09.20	CSA – Email Summit digital	Legal Insights Vol. 2 – Advertising Concept and Permission	Online Workshop
08.09.20	eco Webinar / Digital Business Models / GAIA-X	Current Status and Outlook – What to Expect and How to Engage	Webinar
08.09.20	eco Academy	Future Internet: Build-Your-Own Broadband Internet?	Online
14.09.20	CSA – Email Summit digital	Legal Insights Vol. 3 – Opt-Out Notices and Imprint	Online Workshop
15.09.20	IoT CG & Networks CG	The Future of Production – Connect Intelligently, Align Digitally	Munich & Livestream
15.-18.09.2020	Internet Security Days	Cybersecurity in the Crisis	Online
21.09.20	CSA – Email Summit digital	ESP vs. Brands: Who Delivers?	Webinar
22.09.20	eco Academy	City Carriers & Regional Networks	Leverkusen & Online
23.09.02	eco Webinar / Digital Business Models	Acceptance of AI – Rejection or Trust?	Webinar
24.09.20	eco Webinar / New Work CG	Women in Tech International	Webinar
25.09.20	eco Webinar / Schoko & Sushi / Security CG	IT Security and Self-Help: Where Can I Assume Responsibility?	Webinar
28.09.20	CSA – Email Summit digital	How To Build a Bridge: A Sender´s Receiver´s Perspective	Webinar
29.09.20	EuroCloud	Kick-off for EuroCloud Native: The New Cloud-Native Initiative	Frankfurt
29.09.20	Internet Policy Anniversary Forum 2020	Digitalisation with Responsibility as the Key to Prosperity and Growth	Berlin & Livestream
30.09.20	LiT	LiT DigitalTalk: "Unconscious Bias and AI"	Online
05.10.20	eco Academy	Digital Identity: An ID Card for the Web: But Secure?	Berlin
06.10.20	GAIA-X	Digital Sovereignty and Innovation	Wolfsburg
07.10.20	webTalk / IoT CG	The Future of Mobility	Interactive Livestream
07.10.20	eco Webinar / New Work CG	Companies in Transition - Successfully Introducing Future Technologies Thanks to Professional Change Processes	Webinar
08.10.20	eco Academy	Future Internet: Build-Your-Own Broadband Internet?	Leverkusen & Online
15.10.20	Transatlantic Dialogue Part I	Intermediary Liability in the US	Webinar
16.10.20	eco Webinar / Policy & Law / Data Centre Expert Group	Digital Infrastructure Matters – Covid Highlights the Importance of the Internet, Broadband Acess and Data Storage	Webinar

eco Events 2020			
Date	Event	Topic	Location
20.10.20	eco Webinar / New Work CG	A New Approach to Management – Crisis-Proof Through Resilience	Webinar
20.10.20	eco Webinar / Names & Numbers CG / ICANN69	Hamburg Show @ ICANN 69	Webinar
22.10.20	eco Webinar / Data Centre Expert Group	Data Centre Trends in Europe – Part 1: Residual Heat and Sustainability	Webinar
26.10.20	CSA – Email Summit digital	Email for the Future	Webinar
27.10.20	eco Academy Expert Roundtable Series Future Internet: Build-Your-Own-Broadband-Internet	Module 1: Next-gen Digital Infrastructures	Webinar
27.10.20	eco Webinar / Policy & Law	5G and Network Convergence - Enabler for the Digital Infrastructures of the Future	Webinar
27.10.20	eco Webinar / Names & Numbers CG / ICANN69	ICANN69 Readout – Highlights & Take-Aways from the 22nd Virtual Annual General Meeting	Webinar
30.10.20	eco Complaints Office	Youth Media Protection Expert Lunch	Online
03.11.20	eco Webinar / Security CG – Monthly Topic: "Human Security Factor"	(In-)Security Factor for Humans – Is Home Office Becoming a Security Problem?	Webinar
04.11.20	eco Academy Expert Roundtable Series Future Internet: Build-Your-Own-Broadband-Internet	Module 2: Next-gen Internet	Webinar
04.11.20	E-Mail CG	4th Meeting: Standardisation for Abuse Reports	Online
04.11.20	IoT CG	IoT Advisory Board Meeting	Online
10.11.20	eco Academy Expert Roundtable Series Future Internet: Build-Your-Own-Broadband-Internet	Modul 3: Next-Gen Use Cases	Webinar
10.11.20	eco Webinar / Names & Numbers CG	DNS over HTTPS Policy Webinar – How eco Produced Its Discussion Paper on DoH	Webinar
10.11.20	eco netTALK	Sustainability & Digitalisation	Online
11.11.20	eco Webinar / Security CG – Monthly Topic: "Human Security Factor"	IT Security As a Bitter Pill to Swallow? – How Can the Acceptance of IT Security Measures Be Increased?	Webinar
11.11.20	LiT	Each & Every Person is Different – How Artificial Intelligence Brings Everyone Together	Online
16.11.20	CSA – Email Summit digital	Customer Expectations – Surprising Facts About the Reality in People's Inboxes	Webinar
18.11.20	eco Webinar / Complaints Office with FSM and jugendschutz.net	A Virtual Parents' Evening: Together We Accompany Children Safely and Soundly On the Internet	Webinar
19.11.20	eco Webinar / Digital Business Models / GAIA-X	GAIA-X Summit Press Conference	Webinar
19.11.20	eco Webinar / Digital Business Models	Use of AI in the Legal Sector, with Legal Tech as an Example	Webinar
20.11.20	eco	Annual General Meeting	Online
20.11.20	EuroCloud	Annual General Meeting	Online

| eco Events 2020			
Date	Event	Topic	Location
23.11.20	CSA – Email Summit digital	E-Mail Marketing? It's Relationship Management!	Webinar
24.11.20	eco netTALK	Online Presentation and Discussion of Part 2 of the Study "Sustainability Potentials of Data Centres"	Online
25.11.20	eco Webinar / Security CG – Monthly Topic: "Human Security Factor"	A Day Like No Other – How a Wrong Click Brought Production Operations to a Standstill for Several Days	Webinar
25.11.20	Abuse CG with Manuel Atug	Contact with KRITIS Working Group – Abuse CG Meets Critical Infrastructures + Discussion on eco's Internet Policy Agenda	Online
25.11.20	eco Academy	Data from the Centre to the Edge – The EDGE Revolution?	Online
26.11.20	eco Webinar	Roundtable: Security Update – EU Cybersecurity Regulation and the Geopolitics of Infrastructures	Webinar
26.11.20	eco:// award 2020	Celebrating Innovation	Livestream
27.11.20	Alliance for the Strengthening of Digital Infrastructures in Germany	Steering Committee Meeting	Online
30.11.20	eco Webinar / Security CG – Monthly Topic: "Human Security Factor"	People vs. Security – How Human-centred Security Succeeds (Members only)	Webinar
30.11.20	CSA – Email Summit digital	How to use BIMI as a Brand – from the Idea to GoLIve	Webinar
30.11.20	Alliance for the Strengthening of Digital Infrastructures Press Tour as part of the Digital Summit	Presentation of Infofilm	Online
03.12.20	eco Webinar / Data Centre Expert Group	Data Centre Trends in Europe – Part 2: Data Center Education & Employment	Webinar
03.12.20	CSA – Email Summit digital	Implementing BIMI	Webinar
08.12.20	eco Webinar / Security CG	ISMS – (Not) a Book with Seven Seals	Webinar
10.12.20	eco Policy & Law	Virtual Information Event on Brexit – Current Status and Outlook	Online
11.12.20	eco Webinar / Data Centre Expert Group	Expert Roundtable on Energy Efficiency in Data Centres: Best Practices for Energy Efficient Data Centre Operation	Webinar
15.12.20	eco Academy	Automation + Connectivity – An Inseparable Pair?	Online
17.12.20	eco Academy	Biometrics – Marching Towards Omnipresent Access and Identification Technology?	Online

10.8 Events in Cooperation with eco

Foto: The Hague Security Delta

Events in Cooperation with eco 2020			
Date	Event	Organiser	Location
13.01.20	IT Security Afternoon – SIWECOS	SIWECOS	Hannover
22.01.20	Everything-as-a-Service Instead of Own Investment?	deutsche medienakademie GmbH	Sankt Augustin
29.01.20	eco@LinkedIn Local Cologne	LinkedIn Local Cologne powerd by eco	Cologne
31.01.20	IT´s Breakfast January – Cybercrime...reloaded – Approach and Motivation of an Attacker	nrw.uniTS	Online
03.02.20	eco @ Blockchain in the SME Sector	IDG Business Media GmbH	Hamburg
11.02.20	6th Forum 3D Printing & Law	dwf	Cologne
17.02.20	eco @ eMonday Evening Event	MunichExpo Veranstaltungs GmbH	Munich
18.02.20	DIGITAL FUTUREcongress	AMC Media Network GmbH & Co. KG	Frankfurt
18.02.20	AI Marketing Day	SM:ILe	Vienna, Austria
19.02.20	eco @ GAIA-X: Can the European Cloud Meet the Industry's Requirements?	Fieldfisher (Germany) LLP	Hamburg
19.-20.02.2020	Jeck´n ´Tech	PIRATE.global	Cologne
20.02.20	C.m.C. 2020	IDG Business Media GmbH	Munich
24.-28.02.2020	eco @ RSA Confernce 2020	RSA	San Francisco, USA
04.03.20	Di² Summit 2020 – Workshop Béla Waldhauser	Di²	Frankfurt
07.-12.03.2020	eco @ ICANN 67	ICANN	Online
11.03.20	TEC Evening Event "Can Telcos Do Data?"	TEC	Frankfurt
30.-31.03.2020	Executive Forum 2020	Empolis Information Management GmbH	Online
31.03.20	Online Panel: "Digital Euro for Smart Contracts in the Industry"	Frankfurter School Blockchain Center	Webinar
31.03.20	IT & Data Summit: Current Challenges for our Digital Infrastructure	IT Data Summit	Online
03.04.20	Online Panel: "Will Corona Kill Blockchain Startups?"	Frankfurter School Blockchain Center	Webinar
07.04.20	DE-CIX Virtual Get-together	DE-CIX	Online
07.04.20	Online Panel: "Will Corona Kill Corporate DLT Projects?"	Frankfurter School Blockchain Center	Webinar
05.05.20	Webinar: What is Everyone Doing Wrong with Content?	united domains	Webinar
07.05.20	National Cybersecurity Center, UA den Haag	NCSC	Den Haag, Netherlands
12.-14.05.2020	IoT Security Bootcamp	Seven Shift	Online
14.05.20	eco @ "European Union: Online Trust and COVID-19: What´s Next for Encryption in Europe?"	Global Encryption Coalition	Webinar
19.05.20	Webinar: Optimise Online Meetings – Shorter, More Effective and to the Point	deutsche ict+ medienakademie	Webinar

Events in Cooperation with eco 2020		
Date	Event	Organiser	Location
25.05.20	Webinar: Optimise Online Meetings – Shorter, More Effective and to the Point	deutsche ict+ medienakademie	Webinar
25.05.20	Service-Meister @ USU World Berlin	USU Software AG	
26.-28.05.2020	DIGITAL FUTUREcongress	AMC Media Network GmbH & Co. KG	Virtual
27.05.20	Webinar: Optimise Online Meetings – Shorter, More Effective and to the Point	deutsche ict+ medienakademie	Webinar
04.06.20	Livestream: German-French Pitch on GAIA-X with Ministerial Talk and Virtual Expert Forum	German Federal Ministry for Economic Affairs and Energy (BMWi)	Online
09.06.20	Heise Security Tour	Heise	Online
10.-12.06.2020	eco @ EuroDIG 2020	EuropDIG	Online
18.06.20	Heise Security Tour	Heise	Online
18.-19.06.2020	Growth Europe Summit	Lennarz Consulting	Online
19.06.20	German-wide Digital Day	DFA Digitla für alle GmbH	Online
19.06.20	Expert Dialogue: "Jobsharing in the Crisis (?)"	Jobsharing Hub Community	Online
22.-25.06.2020	eco @ ICANN68	ICANN	Online
23.06.20	Preliminary Webinar: Prop Tech: Above All Sensors, Platforms and Data Management	deutsche medienakademie GmbH	Online
23.-24.06.2020	eTail Europe 2020	Worldwide Business Research	Online
06.-09.07.2020	IoT Security Bootcamp	Seven Shift	Online
23.07.20	Best Practice: Women in Leadership Positions	Oracle	Webinar
29.07.20	Cloud Expo Europe Frankfurt	CloserStill media	Online
05.08.20	Prop Tech: Above All Sensors, Platforms and Data Management	deutsche medienakademie GmbH	Cologne & Online
19.08.20	Cloud Expo Europe Frankfurt – Summer Webinar Series: "New Momentum for Your Data - How to Manage Documents Future-Proof"	CloserStill Media	Online
26.08.20	Cloud Expo Europe Frankfurt – Summer Webinar Series: "Connecting Companies with SAP Cloud ERP"	CloserStill Media	Online
02.-04.09.2020	eco @ solutions:	Silpion Events GmbH	Online
02.09.20	MarketingTech Between Euphoria and Scepticism: Will Algorithms Really Be the Mainstay of the Future?	deutsche medienakademie GmbH	Online
08.09.20	2nd Cybersecurity Day Energy	VGB PowerTech e.V.	Essen
09.09.20	Cloud Expo Europe Frankfurt – Summer Webinar Series: "Strengthening Cybersecurity through ML and AI"	CloserStill Media	Online
09.-11.09.2020	eco @ NamesCon	WHD Event GmbH	Online
10.09.20	eco @ Internet Governance Forum Germany	IGF-D e.V.	Online
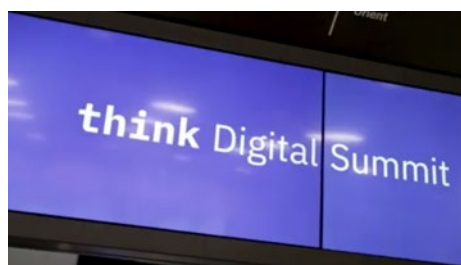
Events in Cooperation with eco 2020			
Date	Event	Organiser	Location
15.-30.09.2020	Handelsblatt Summit Artificial Intelligence 2020	euroforum	Online
15.09.20	TEC Annual Conference: "Strategic Outlook for the TC Market"	Telecommunications Executive Circle	Online
15.09.20	13th E-Health Roundtable – now data above all?	deutsche medienakademie GmbH	Cologne & Online
16.09.20	IBM Forum Application Modernisation	IBM	Online
17.09.20	Digital FUTUREcongress	AMC Media Network GmbH & Co. KG	Online
23.09.20	IBM Cloud Summit	IBM	Online
24.09.20	22nd SmartHomeNRW Expert Roundtable	SmartHome Initiative Deutschland e.V.	Online
25.09.20	THE NEXT STEP: Working Securely Worldwide	DRACOON	Online
25.09.20	plusforum: Who Needs GAIA-X and the Sovereign Cloud Stack?	plusserver	Online
28.-29.09.2020	Datacloud Africa Leadership Summit 2020	BroadGroup	Online
30.09.20	with #Security in the Future	Systemhaus SAR GmbH	Webinar
06.-08.10.2020	eco @ it-sa	it-sa - Die It-Security Messe und Kongress	Virtuell
09.10.20	Reply Cybersecurity Challenge 2020	REPLY	Online
13.10.20	DE-CIX Academy Webinar: Introduction to Networks 01– Packets and Protocols	DE-CIX	Online
13.-22.10.2020	eco @ ICANN69	ICANN	Online
20.-21.2020	Think Digital Summit	IBM	Online
20.-23.10.2020	Assessing and Exploiting Control Systems & IoT	Seven Shift GmbH	Cologne
22.-23.10.2020	Heise DevSec	Heise	Heidelberg
20.-23.10.2020	Assessing and Exploiting Control Systems & IoT	SevenShift GmbH	Cologne
21.10.20	Adblocker Developer Summit	eyeo GmbH	Online
27.10.20	Roadshow Cybercrime with LKA NRW – Focus on Corporate Culture	networker NRW und Lamdeskriminalamt NRW	Online
27.10.20	The SME Digital Congress: "Digitalisation – Strengthened through the Crisis"	Mittelstand-Digital	Livestream
02.11.20	25th Broadband Forum	deutsche medienakademie GmbH	Online
10.11.20	Industry Talk "VR at BER – Using Innovative Tools to Prevent Costly and Time-Consuming Mistakes".	WeAre GmbH	Online
11.11.20	eco @Big Data & AI World: Panel: How Will AI Enter the SME sector?	CloserStill media	Online
11.11.20	eco @Big Data & AI World: Panel: Scaling AI into Real Business	CloserStill Media	Online
16.11.20	Roadshow Cybercrime with LKA NRW – Focus on Secure Software	networker NRW und Lamdeskriminalamt NRW	Online
18.11.20	Women in the Corona Crisis – Winners or Losers?	Women´s Club	Online
18.-19.11.2020	GAIA -X Summit	GAIA -X AISBL	Online

Events in Cooperation with eco 2020			
Date	**Event**	**Organiser**	**Location**
23.11.20	GAIA -X and More – EuroCloud and its Added Values	networker NRW	Online
24.-26.11.2020	IoT Security Bootcamp	SevenShift GmbH	Online
02.12.20	IT Security Day NRW 2020	IHK NRW	Online
03.12.20	Digital Sales – How Has 2020 Changed the Sales Channels?	Telecommunications Executive Circle	Online
09.12.20	Blockchain 2020	deutsche medienakademie GmbH	Hürth & Online
10.12.20	23rd Expert Roundtable SmartHome NRW	SmartHome Initiative Deutschland e.V.	Online
10.12.20	CXO Online Talk "What Will Our Events Look in the Future?"	Hamburg@work	Online
10.12.20	"Campus Potentials IT" – Virtual Jobs Trade Fair	Deutsche Hochschulwerbung	Online
Several dates	IT Trends 2020: DIGITAL & Secure	networker NRW & Bochumer Wirtschaftsentwicklung	Online
Several dates	Blockchain Masterclass	Frankfurter School Blockchain Center	Webinar
Several dates	Blockchain in a Nutshell	Frankfurter School Blockchain Center	Webinar
Several dates	FITSM Certification Courses	PSW GROUP GMbH & Co. KG	Online
Several dates	ISO /IEC 27001	PSW GROUP GMbH & Co. KG	Various Cities/Online
Several dates	ISO 19011	PSW GROUP GMbH & Co. KG	Various Cities/Online
Several dates	E-Invoicing Series Spring 2020	Seeburger	Online
Several dates	Artificial Intelligence Lecture Series	TH Aschaffenburg	Online
Several dates	Security 2020	Vogel IT.Medien GmbH	Online
Several dates	DevCamp – WE PLAY TECH	DevCamp	Various Locations
Several dates	IT Job Shuttle	young targets GmbH	Various Locations
Several dates	Campus Hackathon	young targets GmbH	Various Locations
Several dates	Aschaffenburger Lecture Series	mainproject digital	Various Locations

11. Memberships and Cooperations

11.1 Representation in Pivotal Committees

As an association, one of eco's most important tasks is the representation of its members' interests vis-à-vis politics and in both national and international committees. Along with the main office in Cologne, eco has its own Capital Office in Berlin and representation in Brussels, so that it can be in situ at all relevant political decision-making processes.

eco represents the interests of its members in these committees and initiatives, among others:

11.2 Council for Digital Ethics

The Council for Digital Ethics of the German federal state of Hesse – which, in addition to Harald A. Summa, includes 24 other high-ranking thinkers – is a strategic advisory and reflective body for current digitalisation projects in the federal state of Hesse. It also focuses on societal challenges of digital transformation in order to reflect on and evaluate the impact of new technologies and applications on people from the word go.

The Council for Digital Ethics meets in private sessions twice a year. At each of its meetings, members address a focus topic of their own choosing. Aside from a contribution from a Council member, an external expert is also invited to provide input. The Council for Digital Ethics regularly presents its thesis papers to the members of the Hessian Parliament and the public.

In 2020, the Council published its thesis paper, "Trust in AI", in which it explores solutions to many societal challenges such as climate change, medical treatments, traffic flows, and more. Council members caution that the potential of AI solutions can only unfold if people have confidence in their development and use.

Hessische Staatskanzlei
Ministerin für Digitale Strategie und Entwicklung

HESSEN

**Thesenpapier des Rats für Digitalethik
der Hessischen Landesregierung**
Vertrauen in KI

digitales.hessen

11.3 KI Bundesverband

Through various projects, the eco Association and the German KI Bundesverband (AI Association) are extending their strategic cooperation, which they entered into in 2019. Together, they are shaping framework conditions for a beneficial and value-oriented application of artificial intelligence.

AI Innovation Service-Meister Project, funded by the German Federal Ministry for Economic Affairs and Energy (BMWi)

Ever since the inception of the Service-Meister project, the KI Bundesverband has supported the initiative as an Associated Partner. In the project, the Bundesverband focuses on strengthening the economically key service sector through an AI-based ecosystem. Due to the digitalisation of machines and systems, services are becoming increasingly complex and, from a competitive perspective, can no longer be offered with the necessary quality and time solely by individual service employees or even companies. For this purpose, an AI-based platform is to enable the digitalisation of service knowledge and thus the provision and easier distribution along the service chain.

DIN Steering Group Standardisation Roadmap on Artificial Intelligence

As is the case with the eco Association, the KI Bundesverband is also significantly involved in the development of standards for artificial intelligence as a member of the Steering Group of the Standardisation Roadmap on Artificial Intelligence, led by the German Institute for Standardisation (DIN). The Standardisation Roadmap on Artificial Intelligence is the first global exemplar of a comprehensive analysis of the status of and need for international standards and specifications for the key technology of AI. This not only takes the technical aspects of standards in AI into account but also, in equal measure, its ethical and societal aspects.

AI Village Hürth

The eco Association also supports the KI Bundesverband in the AI Village project in Hürth, in the Rhineland region. With this project, the aim is to create Europe's first fully digitalised campus. In particular, the development of innovative workspaces and experiential zones is intended to generate a unique symbiosis that makes artificial intelligence tangible. The innovative connected network encompasses a broad spectrum of future-oriented industries, which not only promotes the city of Hürth and the Rhineland region as a business location, but also provides the opportunity for an association of highly qualified experts for the further development of AI in Germany.

Daniel Brans
CEO networker NRW e.V.

11.4 networker NRW

In 2020, networker NRW showed how digital regional association work functions: eco and networker NRW supported each other in the organisation and communication of their digital events and gave each other's topics a stage.

From the outset, the aim of the entrepreneurial congress "IT-Trends 2020: DIGITAL & SECURE" – which was scheduled to take place on 31 March at the Ruhr Stadium in Bochum – was to assist SMEs from the region in becoming acquainted with advanced concept topics such as digital collaboration, the Internet of Things and artificial intelligence in business practice – and, as usual, to have a special focus on information security in the digital space. At the time

of its conception, no one could have imagined how topical these issues actually would be at the end of March: Across the world, companies made a massive pandemic shift to digital collaboration. For many SMEs outside the IT sector, however, the transition was more than a bit bumpy. This confirmed how high the need for information was and how important the topical events that eco and networker NRW organised were.

Contacts: In-person to digital

After a start to the year with well-attended in-person events and new cooperations, networker NRW also had to engage in a massive reconceptualisation of its events format. Events for members and for the presentation of their

topics were held in digital format from March onwards. For example, the one-day event "IT-Trends 2020: DIGITAL & SECURE" with around 25 lectures turned into a weekly online series; the ComIn Talk became an online podium with breakout sessions; and Competence Group meetings, the majority of which had been hybrid up to that point, went completely digital.

The unexpected situation did nothing to diminish the proven cooperation between eco and networker NRW. In some areas it could even be intensified – thanks to quick and easy digital communication. In 2020, the two associations continued to support each other in the organisation and communication of their events and

gave each other's topics a stage. For example, networker NRW presented the initiatives of EuroCloud Deutschland to its members, while eco supplemented the spectrum of its contemplated information security management systems with ISIS12, whose licensing partner for North-Rhine Westphalia is networker NRW.

To be continued

The regional association work thus did not come to a standstill in 2020 as a result of the contact restrictions, but was continued in full in digitalised form. Despite positive feedback on its adjusted formats, networker NRW is looking forward to having in-person events take place once more, because it continues to see itself as the network of personal contacts around corporate IT in North-Rhine Westphalia, and sees a continued need for professional exchange, joint activities, and information events in the analogue world in future. Nonetheless, with the newly embedded forms of communication, networker NRW can now even more efficiently fulfil its role as a contact in IT matters and as a supporter in the search for suitable IT service providers.

11.5 Cooperation Partners

eco cooperates intensively with a large network that actively supports the association's work. The partners include, among others:

12. The eco Team 2020

Michel Ast
System Engineer,
Enterprise IT
michel.ast@eco.de

Susi Behrens
Office Manager
susi.behrens@eco.de

Stephanie Bender
HR Representative
stephanie.bender@eco.de

Clarissa Benner LL.M.
Attorney-at-Law
Legal & Compliance
clarissa.benner@eco.de

René Bernard
PR Editor
rene.bernard@eco.de

Thomas Bihlmayer
Policy Adviser
Brussels Office
thomas.bihlmayer@
eco.de

Alexander Boden
Executive Assistant
alexander.boden@eco.de

Astrid Braken
Legal Counsel CSA
astrid.braken@eco.de

Roland Broch
Senior Project Manager
Digital Infrastructures
roland.broch@eco.de

Benjamin Büttrich
Head of Web Development
benjamin.buettrich@
eco.de

Melanie Busse
Office and Event Manager
Berlin Office
melanie.busse@eco.de

Nicole Chemnitz
PR Specialist
nicole.chemnitz@eco.de

Larissa Deichmann
Financial Accountant
larissa.deichmann@
de-cix.net

Sabine Dorn
Accountant Debitors /
Creditors International
sabine.dorn@eco.de

Philipp Ehmann
Legal Consultant Internet
Law and Telemedia
Regulation
philipp.ehmann@eco.de

Judith Ellis
Project Manager &
Team Head International
Communications
judith.ellis@eco.de

Lucia Falkenberg
Chief People Officer
Head of Human Resources
lucia.falkenberg@eco.de

Christina Feit
Office Manager
christina.feit@eco.de

Sebastian Fitting
Attorney-at-Law (Legal Counsel)
Consultant Complaints Office
sebastian.fitting@eco.de

Benedikt Gauer
Event Manager
benedikt.gauer@eco.de

Eilin Geraghty
Project Manager
eco International
eilin.geraghty@eco.de

Nicolas Goß
Consultant
Telecommunications Law and Regulation
nicolas.goss@eco.de

Kerstin Guthaus
Finance/Controlling
Accountant
kerstin.guthaus@eco.de

Rosa Hafezi
Attorney-at-Law
Professional Services Division
rosa.hafezi@eco.de

Natalie Haller
Project Manager
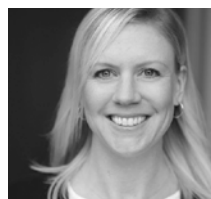Marketing & Events
natalie.haller@eco.de

Tatjana Hein
Project Manager Internet of Things and AI,
Member Services
tatjana.hein@eco.de

Stephan Hradek
System Engineer CSA
stephan.hradek@eco.de

Ivo Ivanov
Attorney-at-Law/
Corporate Counsel
Head of Legal & Compliance
ivo.ivanov@eco.de

Julia Janssen-Holldiek
Director CSA
julia.janssen-holldiek@eco.de

Peter Joniec
Sponsoring and Member Recruiting
peter.joniec@eco.de

Malena Kalhöfer
Student Assistant
Marketing & Events
malena.kalhoefer@eco.de

Cáit Kinsella
Project Manager
eco International
cait.kinsella@eco.de

Daniela Klinck
Senior Controller
daniela.klinck@eco.de

Nils Klute
Project Manager
Communication Cloud Services, Member Services
nils.klute@eco.de

Sebastian Kluth
Technical Lead CSA
sebastian.kluth@eco.de

Alexandra Koch-Skiba
Attorney-at-Law
Head of Complaints Office
alexandra.koch-skiba@eco.de

Peter Koller
Senior Project Manager
Cloud Computing
peter.koller@eco.de

Sidonie Krug
Head of Communications & Spokesperson for
Political Communication
sidonie.krug@eco.de

Christian Kubiak
Attorney-at-Law (Legal Counsel)
Consultant Complaints Office
christian.kubiak@eco.de

Dr. Katharina Küchler
Attorney-at-Law
Legal & Compliance
katharina.kuechler@eco.de

Nathalie Langley
HR Representative
nathalie.langley@eco.de

Henning Lesch
Attorney-at-Law
Head of Capital Office
Head of Division
Policy, Law & Regulation
henning.lesch@eco.de

Laura Lottner
Office Manager
laura.lottner@eco.de

Anna Mahlberg
Junior Controller
anna.mahlberg@eco.de

Maike Marx
Marketing & Customer Relations CSA
maike.marx@eco.de

Claus Meteling
Screen Designer
claus.meteling@eco.de

Florian Mielke
Manager Business Development CSA
florian.mielke@eco.de

Katrin Mielke
Membership Manager
katrin.mielke@eco.de

Christin Patricia Müller
Senior PR Specialist for Policy and Law
Deputy Spokesperson
Political Communication
christin.mueller@eco.de

Christine Neubauer
Member Services
Project Manager AI and Industry 4.0
christine.neubauer@eurocloud.de

Kira Peek
Attorney-at-Law (Legal Counsel)
Consultant Complaints Office
kira.peek@eco.de

Alexander Rabe
Managing Director
alexander.rabe@eco.de

Gregor Reinhold
Head of Commercial Services
Head of Finance
gregor.reinhold@eco.de

Michael Rind
Financial Accountant
michael.rind@de-cix.net

Qadir Rostamzada
Marketing & Business Development CSA
qadir.rostamzada@eco.de

Joon Sames
Software Developer
joon.sames@eco.de

Markus Schaffrin
Head of Member Services
markus.schaffrin@eco.de

Dr. Folke Scheffel
Legal Consultant for Internet and Media Law
folke.scheffel@eco.de

Cornelia Schildt
Project Manager
IT Security
cornelia.schildt@eco.de

Hanna Sissmann
PR Trainee
hanna.sissmann@eco.de

Axel Skiba
Head of Accounting
axel.skiba@eco.de
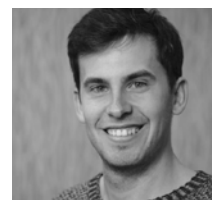
Christiane Skiba
Branch Manager Cologne
Head of Marketing &
Events
christiane.skiba@eco.de

Lars Steffen
Director eco International
lars.steffen@eco.de

Harald A. Summa
Chief Executive Officer
harald.summa@eco.de

Phillip Summa
Controller
phillip.summa@eco.de

Johanna Tantzen
Policy, Law & Regulations
Legal Consultant Policy & Law
johanna.tantzen@eco.de

Tobias Tauch
Project Manager
Marketing
tobias.tauch@eco.de

Michaela Templin
Project Manager
Cybersecurity
Member Services
michaela.templin@eco.de

Hauke Timmermann
Project Manager
Digital Business Models
Member Services
hauke.timmermann@eco.de

Laura Treskatis
Junior PR Specialist Policy
& Law
laura.treskatis@eco.de

Peter-Paul Urlaub
Attorney-at-Law
(Legal Counsel)
Consultant Complaints
Office
peter.urlaub@eco.de

Hanna von der Au
Communication Writer
hanna.vonderau@eco.de

Emma Wehrwein
Project Manager
New Work and Webinars
Member Services
emma.wehrwein@eco.de

Michael Weirich
Security Analyst
michael.weirich@eco.de

Andreas Weiss
Head of Digital Business
Models
andreas.weiss@eco.de

Stand: 2020

13. eco Members 2020

@-yet GmbH, Leichlingen; [netzquadrat] Gesellschaft für Telekommunikation mbH, Dusseldorf; 1&1 Ionos SE, Montabaur; 1&1 Versatel GmbH, Dusseldorf; 20C, United States of America; 23media GmbH, Münster; 31173 Services AB, Sweden; 3S S.A., Poland; 3T Com, Bulgaria; 4Brain GmbH, Oberhausen; 4Sellers GmbH, Rain **[A]** A1 Bulgaria EAD, Bulgaria; A1 Telekom Austria AG, Austria; A2A Smart City, Italy; ABSOLIT Consulting, Waghäusel; Acronis Germany GmbH, Munich; active 1 GmbH, Hamburg; Adacor Hosting GmbH, Essen; ADDIX Internet Services GmbH, Kiel; ADIGMA GmbH Agentur für digitales Marketing, Osterode; Adista, France; adRom Media Marketing GmbH, Austria; ADVA Optical Networking SE, Meiningen; Afilias, Inc., United States of America; AFNIC / NIC-France, France; AGILE ANTS GmbH, Essen; ahd GmbH & Co. KG, Ense; aicovo gmbh, Rosenheim, Oberbayern; Aiticon GmbH, Frankfurt; aixit GmbH, Frankfurt; aixvox GmbH, Aachen; Akamai Technologies GmbH, Garching b. München; Akamai Technologies Inc., United States of America; akquinet outsourcing gem. GmbH, Hamburg; Alexander Thamm GmbH, Munich; Alice&Bob.Company GmbH, Berlin; All for One Group SE, Filderstadt; all-connect Data Communications GmbH, Munich; AlpineDC SA, Switzerland; Alter Solutions Deutschland GmbH, Dusseldorf; Altitud S.r.l., Italy; AltusHost B.V.,

Netherlands; Amazon Web Services Germany GmbH, Berlin; amcm GmbH, Bonn; Ancestry Ireland Unlimited Company, Ireland; ANEXIA Deutschland GmbH, München; Angola Cables, SA, Angola; ANKA Rechtsanwaltsgesellschaft mbH, Essen, Ruhr; Aossia Bulgaria EAD, Bulgaria; AppNexus Inc., United States of America; APTIS GmbH, Goch; Aptum Technologies (USA) Inc., Canada; A-Quadrat Werbeagentur GmbH, Essen; Arendar IT-Security GmbH, Wittlich; Arthur D. Little GmbH, Frankfurt; Arvato Systems GmbH, Gütersloh; Ascio Technologies Inc., Denmark; Ashampoo GmbH & Co. KG, Rastede; AT&T Global Network Services Deutschland GmbH, Böblingen; atene KOM GmbH, Berlin; ATM S.A., Poland; Atos SE, France; Atos Worldline, France; atrify GmbH, Cologne; Audatex UK Ltd, United Kingdom; audatis Consulting GmbH, Herford; Automattic Ltd., United States of America; Avallon GmbH, Aurich; Avelacom Ltd., Russian Federation; AVERDIS e. K., Mechernich; Avira GmbH & Co. KG, Tettnang; AV-Test GmbH, Magdeburg; AWARE7 GmbH, Gelsenkirchen; AXA Konzern AG, Cologne; Axians IT Solutions GmbH, Ulm; axilaris GmbH, Chemnitz; AZ International, LLC, United States of America **[B]** BACKCLICK GmbH, Braunschweig; Badoo Technologies Limited, Cyprus; Baffin Bay Networks AB, Sweden; Bahnhof AB, Sweden; Bayern Connect GmbH, Munich; BBCC.NRW

i.Hs. FH Südwestfalen Breitbandkompetenzzentrum NRW, Meschede; BCT Deutschland GmbH, Aachen; Bdot Blue Infrastructure (Germany) GmbH, Frankfurt - Seckbach; BE IT-Systeme GmbH, Bochum; Bechtle AG, Neckarsulm; Becom Systemhaus GmbH & Co. KG, Wetzlar; Belcenter, Belgium; BelWue-Koordination Universität Stuttgart, Stuttgart; Berlin University of Digital Sciences, Berlin; bevuta IT GmbH, Cologne; Bfz-Essen GmbH, Essen; Bharti Airtel Limited, India; BICS SA, Belgium; Big Data World Europe GmbH, Berlin; Bigfoot Telecom Ltd., Russian Federation; BioCampus Cologne Grundbesitz GmbH & Co. KG, Cologne; Bisping & Bisping GmbH & Co. KG, Lauf an der Pegnitz; BIT BV, Netherlands; bit GmbH, Karlstein a. Main; BITEL Gesellschaft für Telekommunikation mbH, Gütersloh; Bitobito GmbH, Stuttgart; BitPoint AG, Rosenheim; Blackberry Limited, Canada; Blacknight Internet Solutions Ltd., Ireland; Blizzard Entertainment SAS, France; bn:t Blatzheim Networks Telecom GmbH, Bonn; BNMG Brandenburgische Netz- und Media-Service GmbH, Brandenburg an der Havel; Bouygues Telecom, France; Box Inc., United States of America; bplan-solutions GmbH & Co. KG, Cologne; brain4kom AG, Gaggenau; Brandl Services GmbH, Pavelsbach; Brand's Mill GmbH, Oerlinghausen; Brandwatch, United Kingdom; Brennercom AG, Italy;

bridge4IT®, Geldern; Bringe Informationstechnik GmbH, Karlsruhe; BroadGroup, United Kingdom; Bulgarian Telecommunications Company EAD, Bulgaria; Bundesverband IT-Mittelstand e.V., Aachen **[C]** C.C.D. Cogent Communications Deutschland GmbH, Frankfurt; Cablenet Communication Systems Ltd., Cyprus; CacheNetworks, LLC, United States of America; Campaignmonitor, Australia; CANCOM Managed Services GmbH, Jettingen-Scheppach; CANCOM synaix GmbH, Jettingen-Scheppach; Capital Online Data Service Co., LTD, United States of America; Career-Women in Motion e. V./ PepperMINT, Cologne; CARMAO GmbH, Limburg; carmasec GmbH & Co. KG., Essen; CastLake, Estonia; Caucasus Cable System Bulgaria Ltd., Bulgaria; CCNST Deutschland GmbH, Teisnach; CDP Netia Sp. z o.o., Poland; Celeste, France; Cellcom Israel Ltd., Israel; CENTR – Council of European National Top Level Domain Registries CENTR asbl, Belgium; CentralNic Ltd., United Kingdom; centron GmbH, Hallstadt; CenturyLink Communications Germany GmbH, United Kingdom; CenturyLink Germany GmbH, Frankfurt; Certivation GmbH, Lingen (Ems); CETIN a.s., Czech Republic; cgb.consulting Management- und Organisationsberatung, Essen, Ruhr; Chainsulting UG, Flensburg; China Mobile International (Germany) GmbH, Frankfurt; China Telecom (Europe) Ltd., United

Kingdom; Cinia Group Ltd., Finland; CIRA – Canadian Internet Registration Authority, Canada; Cisco Webex, United States of America; CITIC Telecom CPC Netherlands B.V., Netherlands; CJ2 Hosting BV, Netherlands; Claranet GmbH, Frankfurt; CleverReach GmbH & Co. KG, Rastede; CLOUD & HEAT Technologies GmbH, Dresden; Cloud Mates GmbH, Dusseldorf; Cloudeteer GmbH, Hamburg; Cloudflare Inc., United States of America; cloudKleyer Frankfurt GmbH, Frankfurt; Cloudsigma AG, Switzerland; cloudSME UG, Duisburg; CMS Garden e.V., Berlin; CNR – Istituto di Informatica e Telematica – Registro .it, Italy; CNS E-Business Services GmbH, Witten; CO4S GmbH, Essen; ColocationIX GmbH, Bremen; COLT Technology Services GmbH, Frankfurt; Comarch AG, Dresden; ComHem AB, Sweden; COM-IN Telekommuni-kations GmbH, Ingolstadt; Comlink Telecom Ltd, Russian Federation; Commercial Network Services, United States of America; communicode AG, Essen; Comnet Internetional BV, Netherlands; CompanyTransTeleCom JSC, Russian Federation; Con PlanA Beratung, Essen; Concedra GmbH, Bochum; Connectivity Architects Ltd. CMC Networks, Mauritius; Connectivity I.T, Australia; Connesi s.p.a., Italy; conova communications GmbH, Austria; Consultix GmbH, Bremen; Contabo GmbH, Munich; ContactLab S.r.l., Italy; contagi DIGITAL IMPACT GROUP GmbH, Frankfurt; Content Pool Media GmbH, Potsdam; Continum AG, Freiburg im Breisgau; CoolSolution GmbH, Cologne; CORE Association, Switzerland; Core-Backbone GmbH, Nuremberg; Corning Optical

Communications GmbH & Co. KG, Berlin; Cosmonova LLC, Ukraine; Crucible IT Consulting GmbH, Paderborn; CSB-System AG, Geilenkirchen; CSC®We are the business behind businessSM, United States of America; CSR j&c GmbH, Nuremberg; Cyando AG, Switzerland; Cyberlink AG, Switzerland; cyberways Informationsdienste GmbH, Augsburg; Cyta, Cyprus **[D]** D2 CLOUD COMMUNICATIONS LTD, United Kingdom; Dailymotion S.A., France; Daisy Corporate Services Trading Limited, United Kingdom; DAM United AG, Essen; DARZ GmbH, Darmstadt; Datacenter One GmbH, Stuttgart; DATAGROUP Frankfurt GmbH, Neu-Isenburg; DATAGROUP SE, Pliezhausen; dataheads, Bochum; Dataline LLC, Ukraine; Datatech UK Ltd, United Kingdom; DATATREE AG, Dusseldorf; dc-ce RZ-Beratung GmbH & Co. KG, Frankfurt; DC-Datacenter-Group GmbH, Wallmenroth; DCORE GmbH, Munich; DE-CIX Management GmbH, Cologne; DEDS Dr. Esins Datenschutz, Barnekow; Deepshore GmbH, Hamburg; Delta Telecom Ltd., Azerbaijan; DEMANDO GmbH, Kaiserslautern; Derra, Meyer & Partner Rechtsanwälte PartGmbB, Dusseldorf; detlef baukenkrodt.beratung, Dortmund; Deutsche Glasfaser Wholesale GmbH, Borken; Deutsche Herzstiftung e.V., Frankfurt; Deutsche Telekom AG, Bonn; Deutsche Welle Anstalt des öffentlichen Rechts, Bonn; Deutscher Fachverlag GmbH, Frankfurt; Deutscher IPTV Verband e.V., Potsdam; Deutscher Online Casinoverband e.V., Kiel; Dial Telecom a.s., Czech Republic; Dial Telecom S.r.l. Digital Cable Systems S.A, Romania; Dialog Axiata PLC, Sri Lanka; Die

Ausbrecher, Bonn; Digital Networks CJSC, Russian Federation; Digital Ocean Inc., United States of America; Digital Realty Germany GmbH c/o Intertrust (Deutschland) GmbH, Frankfurt; Digital Telecommunication Services SRL, Italy; Digitale Stadt München e. V., Munich; DMI GmbH & Co. KG, Münster; DNS:NET Internet Service GmbH, Berlin; dnsXperts UG, Bonn; Docler Holding S.à r.l., Luxembourg; DOKOM Gesellschaft für Telekommunikation mbH, Dortmund; DomainFactory GmbH, Ismaning; domainworx Service & Management GmbH, Austria; Donuts Inc., United States of America; Doorhan 21 vek LTD, Russian Federation; dotBERLIN GmbH & Co. KG, Berlin; Dotdigital EMEA Ltd., United Kingdom; dotHIV gemeinnütziger e.V., Berlin; DOTRO Telecom, Romania; DOTZON GmbH, Berlin; Dr. Hörtkorn München GmbH, Heilbronn; dr. limper gmbh next level IT consulting and services, Essen, Ruhr; Dr. Vanessa Giese - Innovationsbegleitung, Dortmund; DraftKings UK Services Ltd., United Kingdom; Dropbox International Unlimited Company, Ireland; DT Netsolution GmbH, Stuttgart; dtm Datentechnik Moll GmbH, Meckenbeuren; DTS Systeme GmbH, Herford; DVPT Deutscher Verband für Post, Infor-mationstechnologie und Telekommunikation e.V., Offenbach am Main; DWDM.RU LLC, Russian Federation **[E]** E.D.B. Bildungs-gesellschaft für erfolgreiche Berufe GmbH, Velbert; e.discom Telekommunikation GmbH, Potsdam; E4A s.r.l., Italy; eBay Inc., United States of America; EBRC (Trusted Data Centre, Cloud and Managed Services), Luxembourg;

ebuconnect GmbH, Grevenbroich; ECONDITION GmbH, Garching b. München; ecotel communication AG, Dusseldorf; Ecritel, France; ecsec GmbH, Michelau i.OFr.; Efficient Energy GmbH, Feldkirchen; eGovernment Consulting and Development GmbH (eGovCD), Berlin; EGSZ Gerow Schmitz Zeiss PartmbB Wirtschaftsprüfer Steuerberater Rechtsanwälte, Dusseldorf; ELBRACHT-COMPUTER Netzwerk & Grafik Service GmbH, Alsbach–Hähnlein; Eletronet SA, Brazil; Elisa Corporation, Finland; Emango Internet Services BV, Netherlands; emarsys eMarketing Systems AG, Austria; EMC HostCo GmbH, Munich; Emirates Integrated Telecommunications Company PJSG, United Arab Emirates; empaction GmbH, Frankfurt; Empolis Information Management GmbH, Kaiserslautern; EnBITCon GmbH, Bonn; ennit AG, Kiel; Entanet International Ltd., United Kingdom; ENTEGA Medianet GmbH, Darmstadt; Enterprise Ireland, Dusseldorf; Entreprise des Postes et Telecommunications - EPT, Luxembourg; envia TEL GmbH, Markkleeberg; EPAG Domainservices GmbH, Bonn; ePages GmbH, Hamburg; epcan GmbH, Vreden; epic Ltd., Cyprus; Episerver GmbH, Berlin; Epix, Poland; Epsilon Telecommunications Ltd., United Kingdom; equada GmbH, Alzenau; Equinix (Germany) GmbH, Frankfurt; EQUINIX (SERVICES) LTD, United Kingdom; Ericsson Edge Gravity Inc., United States of America; Ertl & Groß OG, Austria; ESET Deutschland GmbH, Jena; Esports Pte Ltd., Singapore; ESTRACOM SPA, Italy; Ethihad Etisalat Company (Mobily), Saudi Arabia; Etisalat Emirates Telecommunications

Corporation, United Arab Emirates; Etix Everywhere, Luxembourg; e-Trado GmbH, Mülheim an der Ruhr; euNetworks GmbH, Frankfurt; EURid vzw, Belgium; EVOLINK AD, Bulgaria; EWE TEL GmbH, Oldenburg; eww ag ITandTEL, Austria; Exaring AG, Munich; EXATEL S.A., Poland; Expereo International BV, Netherlands; ExperTeach GmbH, Dietzenbach; Exponential-e Ltd., United Kingdom; eyeo GmbH, Cologne; ezNetworking Solutions Pte. Ltd., Singapore **[F]** F.I.R.M. CONSULT, Essen; Fabasoft Deutschland GmbH, Frankfurt; Facebook Inc., United States of America; Fandom, Inc., United States of America; Fastweb S.P.A., Italy; faveo GmbH, Essen; FDNT „InData", Russian Federation; Feral Hosting, United Kingdom; FHE3 Datacenter GmbH & Co KG, Karlsruhe; Fiber Optics Bulgaria OOD, Bulgaria; FIBERAX NETWORKING&CLOUD LTD., United Kingdom; Fiberway Sp. z o.o., Poland; Fidelis Cybersecurity GmbH, Berlin; Fieldfisher (Germany) LLP, Hamburg; Filanco Europe Ltd. Citytelecom, United Kingdom; Filiago GmbH & Co. KG, Bad Segeberg; Filoo GmbH, Gütersloh; Finanz Informatik Technologie Service GmbH & Co. KG, Haar; First Colo GmbH, Frankfurt; FNE-Finland Oy, Finland; FNOH-DSL Südheide GmbH, Uetze; FNT GmbH Facility Network Technology, Ellwangen, (Jagst); ForceLine, Russian Federation; Forcepoint, Unterföhring; Formware GmbH, Nußdorf am Inn; Forschungsinstitut für Regional- und Wissensmanagement gGmbH, Plettenberg; FORTHnet S.A., Greece; Frama Deutschland GmbH, Ratingen; Frank Wassong - CertMobile, Bedburg-Hau; Fraunhofer-Verbund IuK-

Technologie, Berlin; Fredonia Trading Ltd., Cyprus; FREE S.A.S., France; freenet AG, Büdelsdorf; FreiNet GmbH, Freiburg; FREISCHEM & PARTNER Patentanwälte mbB, Cologne; FRESH INFO +++, Hennef; Frey - International Business Consulting, Heusweiler; Friedrich Böhm Consulting e.K., Bochum; Fuchs macht, Odenthal; Fujifilm Recording Media GmbH, Kleve **[G]** G DATA CyberDefense AG, Bochum; G&L Geißendörfer & Leschinsky GmbH, Cologne; G3 Comms Ltd., United Kingdom; Gameforge 4D GmbH, Karlsruhe; Gandi.net, France; GasLINE GmbH & Co. KG, Straelen; GBI HQ Coöperatief UA, Netherlands; GCI Network Solutions, United Kingdom; G-Core Labs S.A., Luxembourg; Gerd J. Simon, Bad Homburg; GÉANT Vereniging, United Kingdom; GELSEN-NET Kommunikationsgesellschaft mbH, Gelsenkirchen; Gemnet LLC, Mongolia; Genesis-Software GmbH, Bochum; G-FIT Gesellschaft für innovative Telekommunikationsdienste mbH & Co. KG, Regensburg; GFN Glasfasernetz Olfen GmbH, Olfgen; GFOS Technologieberatung GmbH, Essen; GG Software AS, Norway; GGEW net GmbH, Bensheim; Giants For Renting Computer Systems Company W.L.L., Kuwait; Gitoyen, France; GleSYS AB, Sweden; Global Access Internet Services GmbH, Munich; Global Cloud xChange, Ireland; Global Switch FM GmbH, Frankfurt; Global Village GmbH, Voerde (Niederrhein); GlobalConnect A/S, Denmark; GlobalConnect NN A/S, Denmark; globaldatanet GmbH, Hamburg; GlobalDots Services and Support GmbH, Berlin; GlobalNet JSC, Russian Federation; GLOBE Development GmbH,

Münster; Globe telecom, Philippines; GlobeNet Cabos Submarinos America, Inc., United States of America; GNC-Alfa CJSC, Armenia; Go for the 100 - Beratung, Essen; GoDaddy.com, LLC, United States of America; Google Germany GmbH, Hamburg; grandcentrix GmbH, Cologne; GRASS-MERKUR GmbH & Co. KG, Hannover; greenSec GmbH, Unterhaching; gridscale GmbH, Cologne; GTT Communications, Inc, United States of America; GTT GmbH, Frankfurt; Gulfnet Communications Co, Kuwait; Gutschild. de Eduard Reinhardt, Weitenstadt **[H]** Haak GmbH, Heiligenhaus; HALLAG Kommunal GmbH, Austria; Hambach & Hambach Rechtsanwälte PartG mbB, Munich; Hamburg Top-Level-Domain GmbH, Hamburg; Hamburg@work e.V., Hamburg; Hasso Plattner Institut für Softwaresystemtechnik GmbH, Potsdam; Hawe Telekom sp. z o. o. w restrukturyzacji, Poland; Hees Bürowelt GmbH, Bochum; Heficed, United Kingdom; Heidelberg iT Management GmbH & Co. KG, Heidelberg; HeidelbergCement AG, Heidelberg; Heinlein Support GmbH, Berlin; Heise Medien GmbH & Co. KG, Hannover; Helge Petersen, Lüneburg; HeLi NET - Telekommunikation GmbH & Co. KG, Hamm; Herbst Datentechnik GmbH, Berlin; HERE Global B.V., Netherlands; Herman IT Ltd., Finland; Hetzner Online GmbH, Gunzenhausen; Heuking Kühn Lüer Wojtek PartGmbB, Cologne; Hewlett-Packard GmbH, Böblingen; Hexanet, France; HEXONET GmbH, Homburg; Hivane, France; HKN GmbH, Krefeld; HL komm Telekommunikations GmbH, Leipzig; Hochschule Düsseldorf, Dusseldorf; Hofmeir Media GmbH,

Munich; Hofnetz IT und Services GmbH, Berlin; Höger Management GmbH, Bornheim; HomeTV Pro Ltd., Lithuania; Hornetsecurity GmbH, Hannover; Horst Görtz Institut für IT-Sicherheit, Bochum; Host Europe GmbH, Cologne; Host Virtual Inc., United States of America; hosting. de GmbH, Aachen; hostNET Medien GmbH, Bremen; HostPalace Web Solution Private Limited, India; Hostserver GmbH, Marburg; Hostsharing eG, Hamburg; Hostway Deutschland GmbH, Hannover; HOT-NET Internet Services Ltd., Israel; House of Finance - Goethe Universität Frankfurt, Frankfurt; htp GmbH, Hannover; HUAWEI TECHNOLOGIES Deutschland GmbH, Dusseldorf; Hub Network Services Ltd., United Kingdom; Hurricane Electric Int. Service, United States of America; hurtig informationssicherheit, Bochum **[I]** I NET Bulgaria EOOD, Bulgaria; I.T.E.N.O.S. GmbH, Bonn; I/P/B/ Internet Provider in Berlin GmbH, BERLIN; i3D.net B.V., Netherlands; IBH IT-Service GmbH, Dresden; IBM Deutschland GmbH, Ehningen; IDKOM Networks GmbH, Kempten; IDNet LTD, United Kingdom; IDNT Europe GmbH, Linden; IDS-GmbH, Herne; IELO LIAZO SERVICES, France; IfKom- Ingenieure für Kommunikation e. V., Dortmund; IGN GmbH, Munich; IHK Gesellschaft für Informationsverarbeitung mbH, Dortmund; IKB Innsbrucker Kommunalbetriebe AG, Austria; ILK Internet GmbH, Karlsruhe; Image Transfer GmbH, Essen; ImagineOn GmbH, Cologne; IMPERVA Inc., United States of America; Index Exchange Inc., Canada; inexio Informationstechnologie und Telekommunikation GmbH, Saarlouis; Infinera Limited, United

Kingdom; Infonas W.L.L., Bahrain; INFOnline GmbH Forum Bonn Nord, Bonn; INFORENT GmbH, Frankfurt; Information Management Institut IMI, Aschaffenburg; Infotech EDV-Systeme GmbH, Austria; Infotecs Internet Security Software GmbH, Berlin; InfraBurst B.V., Netherlands; Infradata GmbH, Dortmund; Ing.-Büro DaTeCom e.K., Duisburg; Ingenico e-Commerce Solutions SPRL/BVBA, Belgium; ingenit GmbH & Co. KG, Dortmund; Init7 (Schweiz) AG, Switzerland; INM - Insitut für Neue Medien, Frankfurt; inno-focus businessconsulting gmbh, Berlin; Innovations ON GmbH, Ulm; inovex GmbH, Karlsruhe; INST-IT GmbH- Institut für IT-Sicherheit, Bochum; Institut für Internet-Sicherheit - if(is), Gelsenkirchen; Integrated Telecom Co. Ltd., Saudi Arabia; Intellicore UG (haftungsbeschränkt), Essen; INTELSVYAZ, Russian Federation; INTEON GmbH, Duisburg; Interactive Network Communications GmbH, Frankfurt; InterCloud S.A.S., France; International Business Consultants (IBC), Wiesbaden; INTERNET AG, Frankfurt; Internet Central Ltd, United Kingdom; Internet Harbor International Co. Limited, Hong Kong; Internet Solutions a Division a Dimension Data (Pty) Ltd., South Africa; InterNetX GmbH, Regensburg; Interplanet S.r.l, Italy; Intersaar GmbH, Saarbrücken; Interxion Deutschland GmbH, Frankfurt; Invitech Solutions Zrt, Hungary; Inxmail GmbH, Freiburg; IONOS by 1&1, Berlin; IP Only Networks AB, Sweden; IP Serverone Solutions Sdn. Bhd., Malaysia; IP Telecom Bulgaria Ltd., Bulgaria; IP Transit, Inc., United States of America; IPA Institut für

Personalentwicklung und Arbeitsorganisation, Cologne; IPACCT ODD, Bulgaria; IPHH Internet Port Hamburg GmbH, Hamburg; ip-it consult GmbH, Austria; iPlace Internet & Network Services GmbH, Austria; IP-Max S.A., Switzerland; IQ Networks, Iraq; IRF GmbH, Cologne; IRIDEOS S.p.A., Italy; isits AG International School of IT Security AG, Bochum; ISP Service eG, Stuttgart; ISP system, Russian Federation; IT Sachverständigen Büro Marcel Schäfer, Erftstadt; IT square Marcel Hader und Tobias Wiedow GbR, Essen, Ruhr; IT Systems LLC, Cyprus; IT Union Holding GmbH, Dusseldorf; IT-Consult Ralf F. Emons e.K., Münster; ITgration GmbH, Hilden; ith Kommunikationstechnik GmbH, Plattling; it-motive AG, Duisburg; IT-Point Eckert, Velbert; IT-SEAL GmbH, Darmstadt; iWelt GmbH + Co. KG, Eibelstadt; IX Reach LTD, United Kingdom **[J]** JAGUAR NETWORK SAS, France; JasTel Network Co., Ltd., Thailand; JL-Automation GmbH, Bochum; Jobware GmbH, Paderborn; Johannes Gutenberg-Universität Mainz Zentrum für Datenverarbeitung, Mainz; JSC „COMCOR" Otdel Mezhoperatorskogo Vzaimodeistvia, Russian Federation; JSC Capital, Russian Federation; JSC Mediasoft Ekspert, Russian Federation; JSC RICT, Russian Federation; JSC Ufanet, Russian Federation; JSK Severnoe Volokno, Russian Federation **[K]** Kakao Corp., Korea, Republic of; Kalaydo GmbH & Co. KG, Cologne; KAMP Netzwerkdienste GmbH, Oberhausen; Kantonsschule Zug, Switzerland; Kentix GmbH, Idar-Oberstein; Keppel Data Centres Holdings Germany GmbH, Frankfurt; KEVAG Telekom GmbH, Koblenz;

Keycom PLC, United Kingdom; Key-IT Geßner-Steiner GbR, Bochum; Key-Systems GmbH, St. Ingbert; keyweb AG, Erfurt; Kingston Technology GmbH, Munich; Klaus vom Ende - Dianet, Duisburg; KLESYS Consulting GmbH, Kalkar; Knipp Medien und Kommunikation GmbH, Dortmund; Kölner Studierendenwerk AöR, Cologne; KomMITT - Ratingen GmbH, Ratingen; Komro GmbH, Rosenheim; Konica Minolta Business Solutions Europe GmbH, Langenhagen; K-Opticom Corporation, Japan; Korbank S.A., Poland; KPMG IT Service GmbH, Berlin; KPN EuroRings B.V., Frankfurt; KPS digital GmbH, Dortmund; KraftCom e.U., Austria; kreuzwerker GmbH, Berlin; KSG Kraftwerks Simulator Gesellschaft mbH, Essen; KT Corporation, Korea, Republic of; KT-NET Communications GmbH, Austria; Kubermatic GmbH, Hamburg; KUMA IT-Solutions GmbH, Moers; KünzlerBachmann Directmarketing SIG AG, Switzerland; KVANT-TELECOM CJSC, Russian Federation **[L]** LANTA Ltd., Russian Federation; Larsen Data ApS, Denmark; Lasotel, France; LeaseWeb Deutschland GmbH, Frankfurt; LeaseWeb Network B.V., Netherlands; legitimis GmbH, Bergisch Gladbach; Leitwert GmbH, Ingolstadt; LEMARIT GmbH - Business Domain Management, Harrislee; LEON Sp. z o.o., Poland; Lepida SpA, Italy; LIMEBIRD GmbH, Ketsch; Limelight Networks Inc. - Int'l HQ, United States of America; Link11 GmbH, Frankfurt; LinkedIn Ireland Unlimited Company, Ireland; Links2U GmbH, Essen; Linode, LLC, United States of America; LinzNet Internet Service Provider GmbH, Austria; Liquid Telecom, United Kingdom;

LLC „Wnet Ukraine", Ukraine; LLC ArpNet, Russian Federation; LLC DataCenter M100, Russian Federation; LLC Equant, Russian Federation; LLHost Inc., Belize; LSEC - Leaders in Security, Belgium; luckycloud GmbH, Berlin; Luxembourg Online SA, Luxembourg; LUXNETWORK S.A., Luxembourg; LWLcom GmbH, Bremen **[M]** M247 Ltd., United Kingdom; m2m-Tailors, Lünen; Mabs4.0 Deutschland GmbH, Dusseldorf; Machine Zone, United States of America; macworx GmbH & Co. KG, Dortmund; Magna International (Germany) GmbH, Sailauf; maincubes one GmbH, Frankfurt; MAMEDO IT-Consulting GmbH, Dortmund; Manx Telecom Ltd., United Kingdom; Marx & Marx Versicherungsmakler GmbH & Co. KG, Dortmund; Mastertel, Russian Federation; Mattner - Consulting, Dortmund; MAXnet Systems, Russian Federation; maxspot GmbH, Landau in der Pfalz; McAfee Germany GmbH, Unterschleißheim; MDlink online service center GmbH, Magdeburg; Meanie, Netherlands; Media Exchange GmbH, Unterföhring; Media Network Services AS, Norway; media:net berlinbrandenburg e.V., Berlin; mediaBEAM GmbH, Ahaus; Mediainvent Service GmbH/ fonira Telekom GmbH, Austria; Medianova Internet Hiz. Tic. A.S., Turkey; Megaspace Internet Services GmbH, Landau; Melbikomas UAB, Lithuania; Menerga GmbH, Mülheim an der Ruhr; MEO - Serviços de Comunicações e Multimédia, S.A., Portugal; Metaliance ISP Systems e.K., Berlin; Metroset, Russian Federation; mgm technology partners GmbH, Munich; mib Mittelstand in Bayern e. V.,

Landsberg am Lech; Micron21 Datacentre, Australia; Microsoft Deutschland GmbH, Munich; Minds + Machines Group Ltd., United States of America; Minimax GmbH & Co. KG, Bad Oldesloe; Mitsubishi Electric Europe B.V., Ratingen; Mittwald CM Service GmbH & Co. KG, Espelkamp; MIVITEC GmbH, Munich; MK Netzdienste GmbH & Co. KG, Minden; M-net Telekommunikations GmbH, Munich; MoBerries GmbH, Berlin; Mobicomnetworks, Mongolia; Mobifone Global JSC, Viet Nam; Mobile Telecommunications Limited, Namibia; mobile. international GmbH, Kleinmachnow; Modern Solutions, Russian Federation; Modern.Work GmbH, Essen; Mohawe Systemanalyse, Bergisch Gladbach; MOLDTELECOM S.A., Moldova; Monzoon Networks (Deutschland) GmbH, Hohentengen am Hochrhein; msg systems AG - Niederlassung Essen, Essen; MSK-IX JSC, Russian Federation; MTS PJSC, Russian Federation; MTX Services s.a r.l. Linkey, Luxembourg; Multimedia Polska S.A., Poland; MVM NET Ltd., Hungary; myLoc managed IT AG, Dusseldorf; myNET gmbh, Austria; Myra Security GmbH, Munich; mywire Datentechnik GmbH, Mannheim - Käfertal **[N]** n@work Internet Informationssysteme GmbH, Hamburg; Naitways, France; National Research Centre "Kurchatov Institute", Russian Federation; Nauka-Svyaz Ltd., Russian Federation; Naukowa I Akademicka Siec Komputerowa (NASK), Poland; Naver Business Platform Europe GmbH, Frankfurt; NDIX bv, Netherlands; NELEX AG, Cologne; neoalto GmbH, Cologne; neomatt GmbH, Essen; neotel DOO, Macedonia; NERIM

SAS, France; NESSUS GmbH, Austria; Net at Work GmbH, Paderborn; net services GmbH & Co. KG, Flensburg; net.DE AG, Hannover; NET1 Ltd., Bulgaria; NetAachen GmbH, Aachen; NetArt Telekom sp. z o.o., Poland; NetAssist Ltd., Spain; NetByNet Holding LLC, Russian Federation; NetCologne GmbH, Cologne; NetCom BW GmbH, Ellwangen (Jagst); Netcom Kassel Gesellschaft für Telekommunikation mbH, Kassel; netcup GmbH, Karlsruhe; NetEarth UK Ltd., United Kingdom; Neterra Ltd., Bulgaria; netgo group GmbH, Borken; NETHINKS GmbH, Fulda; NetIX Communications, Bulgaria; NetLan, Bulgaria; Netorn LLC, Russian Federation; netplace Telematic GmbH, Munich; NETPLANET GmbH, Austria; netplus.ch, Switzerland; Netrouting, Netherlands; Netsign networks GmbH, Berlin; Netskope UK Ltd., United Kingdom; NetUSE AG, Kiel; Network Platforms, South Africa; networker NRW e. V., Essen; Networx-Bulgaria Ltd., Bulgaria; Neue Medien Münnich GmbH, Friedersdorf; Neupart GmbH, Ratingen; Neuronnexion, France; neusta software development West GmbH, Essen Rellinghausen; Neustar, Inc., United States of America; New Continuum Holdings, United States of America; Nexeon Technologies, Inc., United States of America; nexiu GmbH, Wehrheim; next layer Telekommunikations-dienstleistungs- und Beratungs GmbH, Austria; nextindex GmbH & Co. KG, Bochum; nfon AG, Munich; NFOrce Entertainment B.V., Netherlands; nGENn GmbH, Wehrheim; nic.at GmbH, Austria; NMMN New Media Markets & Networks IT-Services GmbH, Hamburg; Node Pole, Sweden;

Nokia Solutions and Networks GmbH & Co. KG, Munich; noris network AG, Nürnberg; NOVATEL EOOD, Bulgaria; NOVELLUS Integrierte Dienste GmbH, Appenweier; NRM Netzdienste Rhein-Main GmbH, Frankfurt; NTT Europe Ltd. Head Office Europe, United Kingdom; NTT Germany AG & Co. KG, Bad Homburg; NTT Global Data Centers EMEA GmbH, Hattersheim am Main; numetris AG, Essen; NürnbergMesse GmbH, Nuremberg; NYNEX satellite OHG, Darmstadt **[O]** OBTEL Ltd., Russian Federation; odix Ltd., Israel; ODN OnlineDienst Nordbayern GmbH & Co. KG, Fürth; OEV Online Dienste GmbH, Dusseldorf; OFIGO GmbH & Co. KG, Essen; oja. at GmbH, Austria; OMCnet Internet Service GmbH, Quickborn; One.com, Denmark; oneclick AG, Switzerland; ONECOM Global Communication Ltd., United Kingdom; OneSpan International GmbH, Switzerland; Online Solutions Group GmbH, Munich; Onstage Online GmbH, Austria; OOO „TK Telecom", Russian Federation; Ooredoo, Oman; Ooredoo Qtel aka Qatar Telecom, Qatar; Oosha Limited, United Kingdom; Open Peering B.V., Netherlands; Open Systems Germany GmbH, Dusseldorf; OpenCarrier eG, Dusseldorf; OpenDNS, United States of America; Open-Xchange AG, Olpe; Opteamax Infrastructure GmbH, Rheinbreitbach; Orange Romania SA, Romania; Oriental Power Holdings Ltd., China; ORTHOS Consult GmbH & Co. KG i.G., Essen; OSN Online Service Nürnberg GmbH, Nuremberg; OTEGlobe S.A., Greece; OVH GmbH, Saarbrücken; OVH SAS, France; OXSEED Logistics GmbH, Bielefeld **[P]** Pacnet Global Headquarter Singapore,

Singapore; Pakistan Telecommunication Company Limited, Pakistan; Pallas GmbH, Cologne; Palo Alto Networks GmbH, Munich; PartnerGate GmbH, Munich; PCCW Global Ltd., Hong Kong; PE Besman Anastasia Aleksandrovna, Belarus; Peering GmbH, Berlin; Penta Infra, Netherlands; Perdix GmbH, Bochum; Peter Rauter GmbH, Austria; Petricore Systems UG (haftungsbeschränkt), Dusseldorf; PFALZKOM GmbH, Ludwigshafen am Rhein; Phibee Telecom SARL, France; PIN Co. Ltd, Russian Federation; pir.org The Public Interest Registry, United States of America; PJSC Datagroup, Ukraine; PJSC MegaFon, Russian Federation; plaarconsult - Unternehmens- und IT-Beratung, Erftstadt; plan b digitation GmbH, Berlin; PLDT Global Corporation, Philippines; Plus.line AG, Frankfurt; Plusnet GmbH, Cologne; PlusServer GmbH, Cologne; Polkomtel Sp. z o.o., Poland; pop-interactive GmbH, Hamburg; portrix Systems GmbH, Hamburg; Poznan Supercomputing and Networking Center PSNC, Poland; Premiere Conferencing Ireland Ltd., Ireland; Previder BV, Netherlands; Prime Telecom S.r.l., Romania; PrimeTel PLC, Cyprus; PRIOR1 GmbH, Sankt Augustin; Private Layer, Panama; Probe Networks, Merzig; Profineon GmbH, Freisbach; Proleagion GmbH, Wiesbaden; provalida GmbH, Bochum; Proximus Luxembourg S.A., Luxembourg; PR-TELECOM Zrt., Hungary; PSW GROUP GmbH & Co. KG, Fulda; Purtel.com GmbH, Munich **[Q]** Q.One Technologies GmbH, Essen; qbee AS, Norway; Quadratwissen, Dusseldorf; Quickline AG, Switzerland; Quines Capital GmbH, Dusseldorf; Qwest Germany

GmbH, Frankfurt **[R]** R.iT GmbH, Bochum; RACCOM AD, Bulgaria; Rackspace Germany GmbH, Munich; Ralf Bender RB C+C, Muehltal; Ramtel Ltd., Russian Federation; Rascom CJSC, Russian Federation; Ratiodata AG, Münster; ratiokontakt GmbH, Hallstadt; Raucamp Consulting, Wülfrath; RCS&RDS S.A., Romania; Realtime Register B.V., Netherlands; Rechtsanwalt Dörre, Berlin; Redder Telco SRL, Italy; regio[.NET] Upstream GmbH & Co. KG, Ebersburg; regiodot GmbH & Co. KG, Essen, Ruhr; RegioNet Schweinfurt GmbH, Schweinfurt; RegionSvayz LTD, Russian Federation; RelAix Networks GmbH, Aachen; Rendszerinformatika Zrt., Hungary; RENTALOAD, France; resch media - web your business, Dortmund; RESET LLC, Russian Federation; retarus GmbH, Munich; Retelit Digital Services S.p.A., Italy; RETN GmbH, Frankfurt; rh-tec Business GmbH, Bad Oeynhausen; Rickert Rechtsanwaltsgesellschaft mbH, Bonn; Riot Games, Ltd., United States of America; Rittal GmbH & Co. KG, Herborn; R-KOM GmbH & Co. KG, Regensburg; RLT IT- und Systemprüfung GmbH WPG, Essen; rockenstein AG, Würzburg; Rocket Fuel Inc., United States of America; Rohde & Schwarz Cybersecurity GmbH, Munich; Rosami : Agentur für Vertrieb, Marketing und Digitalisierung, Dortmund; R-PHARM, Russian Federation; RSM Freilassing Michael Reiner Rack, Freilassing; r-tec IT Security GmbH, Wuppertal; RTL interactive GmbH, Cologne; RTS GmbH, Dusseldorf; Rubicon Project Hopper, United States of America **[S]** SafeBrands SAS, France; Salesforce.com Germany GmbH, Munich; SALSUP GmbH,

Ergolding; SAP Deutschland SE & Co. KG, Walldorf; Sapphire Networks, Gibraltar; SaSG GmbH & Co. KG, Schmiechen; Saticon GmbH, Bochum; Saudi Telecom Company - STC, Saudi Arabia; SBB - Serbia Broadband Srpske Kablovske Mreze d.o.o., Serbia; ScaleUp Technologies GmbH & Co. KG, Hamburg; Scality, France; ScanPlus GmbH, Ulm; Schleifenbauer Deutschland GmbH, Netherlands; Schneider Electric GmbH, Ratingen; schönwälder datenmanagement, Rheurdt; SCHUFA Holding AG, Wiesbaden; Schwarz IT KG, Neckarsulm; SDS Rechtsanwälte Sander Schöning PartG mbB, Xanten; sdt.net AG, Aalen; SDV Plurimedia, France; SE „Special Telecommunications Center", Moldova; SEACOM Ltd., Mauritius; Seal Systems AG, Röttenbach; Security Assist GmbH, Dortmund; Sedo GmbH, Cologne; SEEBURGER AG, Bretten; Selectel Ltd., Russian Federation; SEMPACON GmbH & Co. KG, Hilden; Sendinblue GmbH, Berlin; SentinelOne, France; Serverel Corp., United States of America; Serverius B.V., Netherlands; servicenaut GmbH, Munich; Services Industriels de Geneve SIG Telecom, Switzerland; SevenShift GmbH, Cologne; SFR SA, France; SG.GS Pte Ltd, Singapore; Shenzhen WE Trans, Hong Kong; SIA Lattelecom, Latvia; SIDN, Netherlands; Siemens AG, Munich; Sify Technologies Ltd., India; Signal Spam, France; Silknet JSC, Georgia; Silver Media Direct Marketing GmbH, Fürth; Simple Carrier LLC, United States of America; SIPARTECH SAS, France; Sipwise GmbH, Austria; Sirius Technology, Italy; Six Degrees Technology Group Ltd., United Kingdom; sixclicks GmbH, Gladbeck;

SK broadband, Korea, Republic of; Skylogic S.p.A. Unipersonale, Italy; SkySystems IT GmbH, Iserlohn; Slashme BV, Netherlands; Slovanet a.s., Slovakia; SlyCon GmbH, Saarbrücken; smartlutions GmbH, Hürth; Smart-NIC GmbH, Munich; SMB GmbH, Bochum; SMK Energy Plc., Bulgaria; Soco Network Solutions GmbH, Düren; Sofia Connect EAD, Bulgaria; Softlayer Dutch Holdings B. V., Netherlands; Softnet d.o.o., Slovenia; SolNet - Internet Solution Provider BSE Software GmbH, Switzerland; Sony Interactive Entertainment LLC, United States of America; SoSafe GmbH, Cologne; SOTEL, LLC, Russian Federation; SpaceNet AG, Munich; Sparheld International GmbH, Berlin; Sparkassen-IT GmbH & Co. KG, Calw; Spectrum, Bulgaria; SPLIO, France; Sportfox Holding GmbH, Dortmund; Spotify GmbH, Berlin; SprintLink Germany GmbH, Neu Isenburg; Sri Lanka Telecom PLC, Sri Lanka; StackPath, LLC, United States of America; Stadtnetz Bamberg Gesellschaft für Telekommunikation, Bamberg; Stadtwerke Feldkirch, Austria; StarHub Ltd, Malaysia; StarNet Solutii SRL, Moldova; STARTPLATZ Köln, Cologne; Stella Telecom, France; Stenle GmbH, Essen; Stofa A/S, Denmark; Storm Reply GmbH, Dortmund; Storm Systems LLC, Russian Federation; STRATO AG, Berlin; Subspace Inc., United States of America; süc// dacor GmbH, Coburg; Summa Unternehmens-beratung, Cologne; Sunrise Communications AG, Switzerland; Superonline Iletisim Hizmetleri A.S., Turkey; SurfRight B. V., Netherlands; SWAN, a.s., Slovakia; Swisscom IT Services Finance S.E., Switzerland; SwissSign AG, Switzerland;

SWN Stadtwerke Neumünster GmbH, Neumünster; Swyx Solutions GmbH, Dortmund; Symantec (Deutschland) GmbH, Munich; Symphony Communication Public Company Ltd., Thailand; Synapse Networks GmbH, Gau-Algesheim; Syncier GmbH, Munich; sys4 AG, Munich; SysEleven GmbH, Berlin **[T]** TalkTalk Communications Ltd., United Kingdom; Taqnia Space Co., Saudi Arabia; TARR KFT, Hungary; Tata Communications Deutschland GmbH, Frankfurt; T-CIX, Bulgaria; TDC A/S, Denmark; Te@mconsult Solutions & People Ltd. Niederlassung Deutschland, Wuppertal; Teamware GmbH, Munich; Technische Universität Darmstadt Hochschulrechenzentrum, Darmstadt; Technische Universität München, Garching; Technology & Networks Co, Russian Federation; tecRacer Consulting GmbH, Hannover; TELE AG, Leipzig; Telecom Egypt, Egypt; Telecom Infrastructure Company of the I.R., Iran; Telecom Namibia Ltd., Namibia; Telecom TZ Ltd., Russian Federation; Telecom-Birzha, LLC, Russian Federation; TeleData GmbH, Friedrichshafen; Telefónica Germany GmbH & Co. OHG, Munich; Telehouse Deutschland GmbH, Frankfurt; Telehouse EAD, Bulgaria; Telekom Malaysia Berhad, Malaysia; TELEKOM ROMANIA COMMUNICATIONS S.A., Romania; TELEKOM SLOVENIJE d.d., Slovenia; Telekom Srbija Business Customer Division, Serbia; TelemaxX Telekommunikation GmbH, Karlsruhe; TeleNet, Russian Federation; TELENET SOLUTION Ltd., Russian Federation; Telenor Global Services AS, Norway; TeleTrusT - Bundesverband IT-Sicherheit e.V., Berlin; Telia Carrier Germany GmbH,

Frankfurt; Teliko GmbH, Limburg; Telkom SA SOC Ltd., South Africa; Telxius Cable España, S.L., Spain; TENET Scientific Production Enterprise LLC, Ukraine; Tenzir GmbH, Hamburg; tetraguard systems GmbH, Euskirchen; teuto.net Netzdienste GmbH, Bielefeld; The Cloud Networks Germany GmbH, Munich; The Mindful Leader, Berlin; The unbelievable Machine Company GmbH, Berlin; Thüga SmartService GmbH, Naila; Thüringer Netkom GmbH, Weimar; TI Sparkle Germany GmbH, Frankfurt; TIMOCOM GmbH, Erkrath; TIRASTEL GmbH, Wiesbaden; Titan Networks Internet & Telecommunications Service Providing GmbH, Hofheim am Taunus; TMR - Telekommunikation Mittleres Ruhrgebiet GmbH, Bochum; TMT GmbH & Co. KG, Bayreuth; toplink GmbH, Darmstadt; TOT PUBLIC COMPANY LIMITED, Thailand; TrafficPlex GmbH, Bremen; Trafo2 GmbH media engineering, Essen; Train Consult GmbH Peter Gross, Essen, Ruhr; Transatel, France; TRANSDATA, Norway; Transworld Associates (Pvt) Ltd., Pakistan; TRC FIORD LLC, Russian Federation; Treml & Sturm Datentechnik GmbH, Offenbach a. M.; Trivago N.V., Dusseldorf; tronet GmbH, Troisdorf; Trovent Security GmbH, Bochum; TrunkMobile JSC, Russian Federation; Trusted Network GmbH, Unterschleißheim; T-Systems International GmbH, Frankfurt; Türk Telekom International HU Kft., Hungary; Turk Telekomünikasyon A.S., Turkey; TÜV Rheinland Akademie GmbH, Dortmund; TÜV Rheinland Cert GmbH, Cologne; TV1 GmbH, Unterföhring; TVINGO telecom, Russian Federation; Twitch Interactive Inc., United States of America; Twitter International Company, United Kingdom; TWL-KOM GmbH, Ludwigshafen am Rhein; TYPO3 Association, Switzerland **[U]** UAB Bité Lietuva, Lithuania; UAB Nacionalinis telekomunikacijų tinklas, Lithuania; Uber Germany GmbH, Berlin; UBISECURE Germany, Munich; Ucom CJSC, Armenia; UIMC Dr. Voßbein GmbH & Co KG, Wuppertal; Umniah Mobile Company, Jordan; Unikrn Ltd., Isle of Man; Union Betriebs-GmbH, Rheinbach; Uniontel ZAO, Russian Federation; unique projects GmbH & Co. KG, Duisburg; Uniscon GmbH - A member of TÜV SÜD, Munich; united-domains AG, Starnberg; Universität zu Köln Seminar für Medien- und Technologie-management, Cologne; Upcloud Ltd, Finland; URAL WES CJSC, Russian Federation; USU Software AG, Karlsruhe; uvensys GmbH, Linden **[V]** VainahTelecom JSC, Russian Federation; Varonis Systems (Deutschland) GmbH, Munich; vB Internet GmbH, Munich; Vectra S.A., Poland; vente-privee.com, France; Vereinigte Stadtwerke Media GmbH, Nusse; Verizon Deutschland GmbH, Dortmund; VERIZON MEDIA EMEA Ltd., Ireland; Veronym Holding GmbH, Berlin; Viatel, Frankfurt; Vietnam Telecommunications International (VNPT-I), Viet Nam; Viettel Telecom Corporation International Business Center, Viet Nam; ViewQwest Private Limited, Singapore; VimpelCom PJSC, Russian Federation; Virtual Internet (UK) Ltd, United Kingdom; VISTEC Internet Service GmbH, Wiesbaden; vitroconnect GmbH, Gütersloh; VIVAI Software AG, Dortmund; VKontakte Ltd., Russian Federation; VL-telecom Ltd., Russian Federation; Vodafone BW GmbH, Cologne; Vodafone Enterprise Germany GmbH, Munich; Vodafone GmbH, Dusseldorf; Vodafone Hessen GmbH & Co. KG, Cologne; Vodafone Kabel Deutschland GmbH, ; Vodafone NRW GmbH, Cologne; VODAFONE Ukraine, Ukraine; Voxility GmbH, Frankfurt; VSE NET GmbH, Saarbrücken; Vshosting s.r.o., Czech Republic; VTEL GmbH, Austria **[W]** W Kubik GmbH, Bochum; Wagner Group GmbH, Langenhagen; warescale network, Goch; WeAre GmbH, Berlin; Webdiscount GmbH & Co. KG, Münster; Weber eBusiness Services GmbH, Balingen; webgo GmbH, Hamburg; Webstrategy GmbH, Kronberg im Taunus; Well-comm Ltd, Russian Federation; West Indian Ocean Cable Company, Mauritius; Westcon Group Germany GmbH, Berlin; Wharf T&T Limited, Hong Kong; Whitelabel, Netherlands; Whow Games GmbH, Hamburg; WideVOIP / Chmurtz SARL, France; Wifiweb s.r.l., Italy; WIK Consult GmbH, Bad Honnef; WILDE BEUGER SOLMECKE Rechtsanwälte, Cologne; wilhelm.tel GmbH, Norderstedt; Wind Telecomunicazioni S.p.A., Italy; Wintercloud GmbH & Co. KG, Heidelberg; Wirtschaftsförderung Bochum GmbH, Bochum; Wirtschaftsförderung Frankfurt - Frankfurt Economic Development GmbH, Frankfurt; WIRUlink Pty Ltd, South Africa; WISPONE SRL, Italy; WiTCOM Wiesbadener Informations- und Telekommunikations GmbH, Wiesbaden; W-IX Ltd., Russian Federation; WOBCOM GmbH, Wolfsburg; Wolf Assekuranz-Service GmbH, Essen; Workonline Communications (Pty) Ltd., South Africa; World Streamedia, Inc., United States of America; WUPNET IT-Lösungen, Wuppertal; WVNET GmbH, Austria; WWZ Telekom AG, Switzerland **[X]** Xantaro Deutschland GmbH, Hamburg; x-ion GmbH, Hamburg; XO International Inc., United States of America; XQueue GmbH, Offenbach **[Y]** Yandex Europe B.V., Netherlands; young targets GmbH, Berlin **[Z]** Zain Group Head Office, Kuwait; Zajil International Telecom Company KSCC, Kuwait; Zattoo Europa AG, Switzerland; Zayo France (AS8218), France; Zayo Group UK Ltd., United Kingdom; Zscaler Germany GmbH, Munich,

As of December 2020

25
eco

Association of the Internet Industry
Lichtstrasse 43h, 50825 Cologne, Germany
phone +49 (0) 221 / 70 00 48 - 0
fax +49 (0) 221 / 70 00 48 - 111
info@eco.de
international.eco.de

eco
ASSOCIATION OF THE
INTERNET INDUSTRY